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Sustainability in International Business:
Wishful Thinking or Reality?

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Economic Sustainability and Innovation

Research-in-Progress

A.C. Samli

*Research Professor of Marketing and
International Business
Coggin College of Business
University of North Florida*

Weston Probst

*Research Assistant
Coggin College of Business
University of North Florida*

Abstract

In this article, the authors differentiate between product sustainability and quality of life enhancement. They maintain that the ultimate goal in sustainability must go in the direction of both of these concepts. The authors distinguish 4 layers of sustainability and connect those to another 4 layers of innovation and quality of life connections. It is maintained here that the connection between sustainable innovation and quality of life is not clear and must be subject to much research effort.

Introduction

There are perhaps thousands of product innovations every year. While many of them fail, the others can make major contributions to our society and to the world. While we may not consider rainbow suspenders, for example, to have made a major contribution to quality of life, certainly the computer has made a tremendous impact. Sustainability and contribution to quality of life are two critical attributes of any innovative product. The authors define sustainability as meeting the needs of people today without compromising those of future generations (Dormann and Holliday, 2010). For all practical purposes, the authors believe that quality of life is ease of ability for individuals to satisfy their needs and capability to raise the ability further to generate satisfaction and happiness (Christensen 2003, Sirgy et al , 2008, Philips 2010). In this paper, the authors maintain that there are different levels of innovation with different levels of sustainability. It is therefore critical to analyze the degree of sustainability as it is related to new product development.

In recent years, much has been said and written on sustainability. The basic idea is that the way the world economies are functioning, this fragile planet will not be able to sustain itself. If we start with this position, then a critical question arises: how sustainable a product innovation should be, and how much support such sustainable product introduction should receive.

In this article, we propose 4 innovation categories and point out that only 1 is particularly desirable, and that individual companies as well as countries should target the development primarily of that category of innovation.

Categorization of Innovations

If we were to evaluate innovations first 2 categories that come to mind are to what extent it would improve the quality of life in general, and secondly, how it would contribute to sustainability in general. In order to have a discussion we put together exhibit 1. Certainly it is critical to examine these two aspects of any innovation in order to judge its contribution and its desirability.

(Exhibit 1 here)

In dealing with sustainability, the authors believe that there are 4 levels of sustainability. The first level deals with acceptability of a new product by the market; any product that does not survive in the market is by definition not sustainable. The second level = corporate entity – sustainable, but not profitable – nationally, then globally.

Although, according to some scholars, sustainability and innovation are commonly mentioned together, the connection is not quite successfully made (Hopkins/Eppinger, 2010). However, in order to make this particular connection, it is necessary to have a cogent definition of sustainability. Sustainability, as defined, indicates how countries can meet the needs of the people today without creating major hardships on their future generations (Gilson and Stigson, 2004). Here, the literature has been active in biological, ecological, and industrial life cycles (Hopkins/Eppinger). Although sustainability has three critical areas as indicated in the literature – the authors believe there is at least one more aspect which is discussed in this article. According to Eppinger, sustainability and the environment are connected in terms of 3 areas.

First – the toxins that are created when toxic materials are utilized to create new products. Toxins are difficult to get rid of, they are dangerous, and the last for a long time. The second problem is being forced to use non-renewable resources. Human beings started out as gatherers; in the beginning, they gathered only food. Today, humans are still engaged in the gathering of non-renewable resources, which poses a number of risks to the sustainability of new product development. Thus, in the current literature, sustainability is related to how much material is used as well as what materials are used in the production of new products. The third problem is perhaps the most critical – that is the problem of energy. Once again, in today's world, energy is almost equated completely to fossil fuels. But, fossil fuels are a non-renewable resource. Not only will they be depleted, but they also are prime pollutants (Eppinger).

The second level is the corporate entity that introduced it if it isn't the product; profitability as criterion of sustainability. The third level deals with innovation as beneficial national economic entity- if it doesn't succeed in doing so, it may be discontinued or discouraged by local or national governments. Finally, the 4th level is global sustainability – if a product is sustainable for a company or one government, but creates hardship on other people in different parts of the world, that product is not considered sustainable.

In fact, the authors believe that sustainability elements are discussed variously in the literature (Philips, Giddings), however the sustainability characteristics of new products are not related to quality of life. This is why the authors think the attempts at sustainability have been ineffective. By definition, sustainability must enhance quality of life. Exhibit 1 presents our point of view regarding sustainability and quality of life connections. As can be seen in the exhibit, there are four alternatives: The category on the left side, sustainability of a new product is negative, meaning that it may be using toxins, non-renewable resources, and maybe non-renewable energy. But, if all of these were to be put together, the outcome of the whole activity in terms of quality of life would be very negative.

The second alternative in the exhibit shows that even though the product is not sustainable because of toxins, resources, energy usage, it may create some degree of quality of life enhancement. The greatest current consumer products, say automobiles or televisions, are in that category. They are creating certain levels of pollution, but also enhancing quality of life. One even more questionable product is batteries – extensively used, but not recyclable. They have a terrible impact in the environment.

The third alternative in exhibit 1 deals with the opposite – although the product is sustainable, it doesn't enhance quality of life. According to public research, bottled water is not even as good as some municipal water supplies, and yet is still being produced and consumed all over the world.

Finally and most importantly, the new product might have sustainable characteristics, meaning at least that it doesn't create toxins, uses renewable resources and energy (Eppinger 2010). Yet, those products may also be very positive in terms of enhancing quality of life. Here, enhancing quality of life has two basic meanings: one, enhancement of quality of life in terms of not creating pollution, and second, enhancement of quality of life in terms of obtaining more utility, or benefit, out of a product. The authors present the example of organic farming is an environmentally-friendly, sustainable, and quality-of-life enhancing innovation.

As exhibit 2 is discussed, we observe the natural or biological life cycle and the product industrial life cycle overlapping. However, one thing is missing from this model, and that is product life-cycle extension. For almost any product, but particularly sustainability-proof products, there can be an extension of value if technology improves the product life span.

(Exhibit 2)

As seen in exhibit 3, although implied, the actual technology to enhance product life span is technological activity, and the extension of product life cycle is a critical component of sustainability.

In current markets systems, where competition is becoming unbearable, and economic conditions are extremely adverse, companies are forced to consider introducing a product that will be captured by the market almost immediately. Here, there may not be any preference to quality of life and sustainability may be a question. However, one would find many, many products of that kind.

If we go one step beyond the above concept, we may be thinking of product sustainability in terms of market acceptance. Once again, without thinking of quality of life considerations, companies might be much interested in product sustainability at least for a while. A simple example may be red dye #2 or asbestos.

Some companies may consider enhancement of quality of life, almost by definition helping the product's actual national market sustainability. At the time of writing of this article, there are numerous weight loss programs. Although product sustainability, particularly in terms of resource utilization and greenness are not considered, the quality of life impact of these products will create typically a national sustainability.

Perhaps, the best alternative in case of innovational sustainability will be in terms of greenness, renewable resource utilization, as well enhancement of quality of life. The author's believe this is the ultimate sustainability. In order to elaborate on these 4 layers of sustainability, i.e., product, company, country, global, we have developed an innovational sustainability model.

Barriers to Sustainability

Typically, societies are somewhat conservative, and particularly if there is a dramatic innovation with significant claims on its sustainability, there may be automatically emerging barriers. Exhibit 3 illustrates the most serious barriers to sustainability of innovation. These barriers are worldwide problems.

The first barrier is inertia – companies would hesitate to, or will simply ignore radical innovations. This is because they are tied down to existing technologies which may be very good. However, employing existing technologies may not be enhancing sustainability as displayed by the automotive industry.

(Exhibit 3 here)

The second impediment to sustainability is the cost – much of the time, companies are required to make excessive sacrifices to generate disruptive technologies, which, to begin with, they are not entirely in favor of. Thus, excessive cost requirements would deter development of sustainable products with major emphasis on quality of life.

The third barrier to proper sustainability deals with knowledge. Much of the time, companies are very busy focusing on core competencies. However, what they do best may not involve sustainability and quality of life enhancement knowledge, and the company may not be able to acquire the necessary knowledge.

The fourth impediment is quite connected to the third above. Unless the company has the proper orientation to develop new products that are sustainable in terms of product characteristics as well as capable of enhancing quality of life. Unless there are certain pressures on the corporate entity, that kind of orientation may not come about naturally (Doob, 1995).

The fifth barrier to sustainable product development is related to technology. Even if the company has the resources, knowledge, and proper orientation, unless it has the necessary technology, it may not be able to generate sustainable products that will also enhance quality of life.

All in all, these 5 impediments will inhibit the objectives of stage 4 in exhibit 1. In other words, it is very difficult to develop sustainable products as displayed in exhibit 3 and quality of life enhancement because of the fact that these 5 impediments are extremely powerful and block the advancement because of realistic tendencies to survive in the market place. That means, corporate entities have to survive in the marketplace completely irrespective to sustainability and quality of life. Survival first, then quality of life.

Conclusions and Future Research

We in this article point out that first and foremost, sustainability is very closely connected to quality of life enhancement. In an effort to illustrate the relationship, we presented 4 layers of innovational activity, which are somewhat connected to innovative sustainability. It is extremely critical that when innovation-related ideas are generated to think of their contribution to quality of life enhancement. Needless to say, any product that is totally green will have some quality of contribution; however, if the product is totally green, and its quality of life contribution is carefully identified as well, this would be the ideal situation for innovative sustainability.

The authors feel that the typical literature of sustainability deals neither with innovation nor deals directly with quality of life enhancement(Philips, 2010, Giddings et al, 2002). Thus, much research must go in the direction sustainability through innovation leading to quality of life enhancement as well. This, the authors believe, is a very critical challenge for government, science, and business.

Exhibit 1 – Sustainability and Quality of Life Matrix

Attribute	Failed Innovation	Unacceptable Sacrifice	Short-Run Innovation	The Goal of Progress
Sustainability	Negative	Positive	Negative	Positive
Quality of life	Negative	Negative	Positive	Positive

Exhibit 2 – The Three Domains of Sustainability

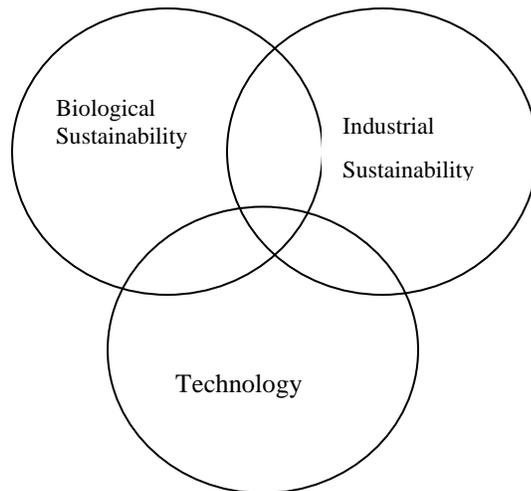


Exhibit 3 – Barriers to Sustainability

- **Inertia** –ties to existing technology
- **Cost** – Concern about product’s contribution to firm
- **Knowledge** – lack of or lack of appropriate knowledge
- **Orientation** – company occupation with tradition internal/external objectives
- **Technology** – Lack of required technical sophistication

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Can Uncertainty Avoidance Explain Prospect Theory?

Student Paper

Randall Thomas
J.D./D.C.L Candidate
Louisiana State University

Oliver Schnusenberg
Associate Professor of Finance
The University of North Florida

We would like to thank our colleagues and students at the four German universities that participated in this study: the Cologne University of Applied Sciences, the University of Applied Sciences and Arts Dortmund, the Berufsakademie Bad Mergentheim, and the University Duisburg-Essen. We would also like to thank Dr. Paul Fadil at the University of North Florida for helpful comments and suggestions.

Abstract

This study examines results acquired from surveys administered to German and American university students to determine whether a relationship exists between an individual's ranking on Hofstede's cultural dimension of uncertainty avoidance and the individual's predisposition to behave according to the tenets of prospect theory. Results indicate American and Germans choose similarly among risky alternatives. Moreover, results for the American subsample indicate that Americans with higher uncertainty avoidance choose alternatives that are more certain. Lastly, there is no difference in the relationship between uncertainty avoidance and choices among risky alternatives between the American and German subsamples.

Introduction

On April 9, 2010, an article in the *Financial Times* referenced the “emotional markets hypothesis” relative to the Greek debt crisis. Also mentioned in the article was a conference on the future of economics, held at King's College in Cambridge. One of the main conclusions of this conference was that:

“...economists and market traders alike need to devote far more time to human psychology, rather than just the raw economic numbers beloved of many policy wonks.

‘We need to recognise that humans are partly rational and partly instinctive,’ Adair Turner, head of Britain's Financial Services Authority, solemnly declared. Or as Mr. Soros echoed: ‘Economic phenomena have thinking participants, natural phenomena do not ... [but] participants' thinking does not accurately represent reality.’”

The article held that economic behavior depends as much on culture and on politics as on traditional economic analysis. Interestingly, very little research has been conducted as to how different cultures engage in economic decision making. One step in this direction is to investigate whether the economic choices individuals make depend on that individual's cultural dimensions.

The manifestation of culture in an individual's choices and preferences has been shown through previous research (Hofstede 1983). Although Hofstede's dimensions are not comprehensive and cannot accurately describe all inhabitants of a country, they do present a framework through which a nation's preferences and behavior can be predicted. Prospect theory (Kahneman and Tversky 1979) has shown that individuals often abandon expected utility theory and instead become risk-averse in their gains and risk-seeking in their losses. We seek to identify

relationships between an individual's uncertainty avoidance and predisposition for subscribing to prospect theory within Germany and the United States.

Kahneman and Tversky's research has generated critical acclaim over time, as has Hofstede's. However, no study to date has investigated whether individuals exhibiting a high level of uncertainty avoidance will exhibit varying risk-seeking or risk-averting behavior as predicted by Prospect Theory. For example, if an individual exhibits a high degree of uncertainty avoidance, this individual should be more risk-averse with respect to gains than an individual with relatively low uncertainty avoidance. Moreover, a person with high uncertainty avoidance may act in a less risk-seeking, or even a risk-averse, manner relative to losses than a person with low uncertainty avoidance.

Prospect theory suggests that people exhibit risk-averse behavior in gains and risk-seeking behavior in losses. Kahneman et al. (1991) elaborate:

A central conclusion of the study of risky choice has been that such choices are best explained by assuming that the significant carriers of utility are not states of wealth or welfare, but changes relative to a neutral reference point (Kahneman et al. 1991, p. 199).

We anticipate that the degree of loss aversion will correlate with uncertainty avoidance. That is, we expect a higher occurrence of loss aversion in countries with higher uncertainty avoidance indexes, as those individuals should prefer to avoid risk in the formation of asset portfolios.

This study aims to examine the relationship between prospect theory and uncertainty avoidance in the aforementioned countries. The paper will proceed as follows. First, we will determine if German students exhibit a higher degree of uncertainty avoidance than American students. Next, we will explore whether German students are more risk-averse than Americans in their gains and less risk-seeking in their losses. Finally, we will investigate whether different levels of uncertainty avoidance result in different prospect theory choices, and whether that relationship is constant across countries.

The remainder of this paper is organized as follows. The literature review and hypotheses are presented in the next two sections, followed by the data and results sections. The final section of the paper concludes and presents some implications and suggestions for future research.

Literature Review

Uncertainty Avoidance

Geert Hofstede, in his study of organizational behavior disparities between countries, identified four dimensions of culture upon which a country may vary (Hofstede 1983). We will juxtapose the respective country's uncertainty avoidance index score against specific principles of Prospect Theory to determine if a relationship exists. Hofstede describes the uncertainty avoidance index (UAI) as measuring the mean residual level of anxiety the inhabitants of a country experience and the extent to which individuals will avoid behaviors that might increase their anxiety (Hofstede, 1983, p. 53). Germany has a UAI score of 65 compared to 46 for the United States, implying that Germans should, on average, be less comfortable with uncertainty and ambiguity than Americans (Hofstede 1983, p. 52).

Alessandri (2008) documents a relationship between perceived risk and procedural rationality. Alessandri found that as managers perceive more risk in their decisions, their approaches to decision making become more analytical, and they become more focused on gathering information to help guide their choice. This attempt to mitigate uncertainty in management supports the notion that uncertainty avoidance exists in organizations and varies relative to perceived risk of a situation. Thus, if an individual perceives a situation to be risky, he or she may act to reduce the uncertainty inherent in the situation and act in a more risk-averse manner.

Since Hofstede's initial research other studies have identified and explored uncertainty avoidance in organizations. Portz and Lere (2010) find that in cost center management, German companies are more likely to be structured in a manner that narrows a manager's focus and reduces ambiguity. Conversely, managers in U.S. companies typically enjoy more flexibility and are encouraged to have a broad focus even if it means working interdepartmentally. This disparity has been interpreted to represent a difference in the two countries' respective uncertainty avoidance rankings.

Beckmann et al. (2007) document the presence of uncertainty avoidance in the portfolio compositions of asset managers from four different countries. Germany and the United States performed as Hofstede's research would predict, with the more uncertainty avoidant German asset managers neglecting to invest their assets under management as actively as they were permitted. U.S. asset managers, however, exercised most of the freedom permitted them by their investors. This research monitored underutilized tracking error, which is the degree to which an asset manager will invest as actively as she is allowed. Consequently, Beckmann et al. suggest that uncertainty avoidance could be responsible for the lower returns experienced by asset managers with greater degrees of underutilized tracking error.

Further research by Shane (1995) examines several championing roles that have been found to increase rates of innovation in the United States. Shane (1995) found that uncertainty-accepting societies are more likely to prefer innovation-championing roles than are uncertainty-avoiding societies (Shane 1995, p. 64). Shane's research suggests that cultures more tolerant of uncertainty should be expected to have higher rates of innovation, as these cultures would be more accepting of the roles necessary to develop such innovation (Shane 1995, pp. 64-65). The link between uncertainty avoidance and innovation is questionable, however, as research by Rhyne (2002) showed higher levels of self-reported new product innovation in Belgium (higher UAI score) versus the United States (lower UAI score), which contradicts prior research.

The way in which Hofstede defines cultures as being contained within territorial lines has been the subject of some criticism. For example, Baskerville-Morley (2004) contends that national states are dynamic and inhabitants are typically of multiple ethnicities. She also maintains that Hofstede had to assume a national uniformity of culture in order to find it (2004). In the present study, all students included in the study are either American citizens or German citizens.

Prospect Theory

The notion that a loss is felt with greater magnitude than a gain, and that individuals are risk-seeking in losses while risk-averse in gains, was identified and explained by Daniel Kahneman and Amos Tversky (1979). Their research established that individuals routinely defy expected utility theory as the result of psychological motivations.

Since Kahneman and Tversky's (1979) seminal work, several papers have further investigated prospect theory, occasionally with contradicting results. Abdellaoui et al. (2007), using outcomes greater than those used in Kahneman and Tversky's original study (1979), experienced results that further supported prospect theory in that utility was convex for losses and concave for gains. However, Etchart-Vincent (2004) used loss outcomes comparable to those used by Abdellaoui et al. (2007) and found less convexity in losses. Fehr-Duda et al. (2010) find that risk aversion increases as gains become larger in scale. However, their research does not find that risk-seeking behavior present in losses changes relative to the size of the loss. This supports Abdellaoui's (2000) findings that the convexity of the value function for losses is less pronounced than is the concavity of the value function for gains.

Lozza et al. (2010) document that participants in framing and preference research attach greater value to a bonus when it is framed as a loss aversion (reduction in tax burden) as opposed to a gain (an increase in income). This supports Kahneman and Tversky's finding that a loss is more painful than a gain is pleasurable. Consequently, individuals attach greater value to the aversion of a loss. This supports the reflection effect noticed by Kahneman and Tversky (1979) wherein individuals, for very small probabilities, are more likely to gamble on a potentially large gain than take a small certain gain (risk-seeking behavior in gains). They are also more likely to take a small certain loss rather than gamble on a large potential loss (risk-averting behavior in losses).

Research has also identified that, while the majority of study participants (70%) exhibit the reflection effect in their preferences, a significant fraction (24%) have been shown to be risk-averse in both gains and losses (Baucells and Villasis, 2010). Baucells and Villasis (2010) suggest that instead of taking an average of all preferences in research involving prospect theory and utility functions researchers should separate participants into reflective and averse classes. This finding is motivational to the present study, as we seek to investigate whether individual levels of uncertainty avoidance lead to varying levels of risk-seeking behavior.

Garvey and Lee (2010) find that, although prospect theory can be predictive of lottery preferences, choices among risky alternatives are often partially a manifestation of personality traits. Garvey and Lee find that individuals are more likely to choose a particular alternative when the framing of a proposition resonates with their personality dispositions and appetite for risk (2010).

Dohmen et al. (2008), in studying an adult German population, find that education and knowledge-based measures of cognitive ability are positively related to participants' performance in a probability judgment assignment. Dohmen et al. (2008) interpret these results to mean that biased probability judgment often translates into inferior economic outcomes, and they suggest that education significantly reduces cognitive biases. Our sample consists of German and American students, and we expect our samples to be less prone to commit violations of traditional utility theory.

Existing literature suggests that individuals tend to behave as described by prospect theory. Moreover, the literature on uncertainty avoidance confirms Hofstede's original idea that individuals exhibit different levels of uncertainty avoidance depending on their country of origin. However, no study to date has investigated whether an individual's level of risk-seeking or risk-averting behavior can be predicted using that individual's degree of uncertainty avoidance. If a culture's degree of risk aversion can be predicted using uncertainty avoidance, then it is possible that different asset markets are priced differently given the prevailing culture in that market.

By incorporating the research identified in the literature review and analyzing survey data from American and German participants we intend to identify and describe, if it exists, correlation between the aforementioned principles of behavioral finance and cultural dimension. We expect there to be an inverse correlation between uncertainty avoidance and risk aversion, as individuals wishing to mitigate any uncertainty would demonstrate a proclivity for less risk in their investments.

Hypothesis

We anticipate that there will be a disparity between German and American survey respondents regarding uncertainty avoidance. German students are expected to score substantially higher than American students on the uncertainty avoidance index, confirming Hofstede's original findings (Hofstede, 1983, p. 52). This leads us to the following hypothesis:

H1: German students exhibit a higher degree of uncertainty avoidance than American students.

We will next explore the possibility that individuals' choices among risky alternatives can be explained by the individuals' degree of uncertainty avoidance. Specifically, we expect individuals with a higher degree of uncertainty avoidance to choose alternatives that are more certain, *ceteris paribus*. If there is a positive relationship between uncertainty avoidance and choices among risky alternatives, then it may be possible to develop a predictive model in which an individual's level of uncertainty avoidance can be used to forecast how individuals will choose when given risky choices. We hypothesize:

H2: Higher uncertainty avoidance results in less risky choices by individuals.

Lastly, although it is possible that the level of uncertainty avoidance differs between the two countries investigated here, the relationship between uncertainty avoidance and the choice of risky alternatives should be relatively constant and should not vary across countries. Thus, we hypothesize:

H3: The relationship between uncertainty avoidance and risky choices is constant across countries.

If a correlation could be established as to the relationship between a culture's uncertainty avoidance and the amplitude of their loss aversion we might be able to anticipate the likelihood of a culture's acceptance of a financial proposition based on information regarding where this culture falls along the uncertainty avoidance continuum. Hofstede's dimension of uncertainty avoidance could be important predictive tool, allowing for the reasonable speculation as to the potential receptivity of German or American cultures to investment opportunities. This research could also explain inconsistency in investment conventions between the two countries.

Data and Methodology

A unique survey instrument is utilized here, which was administered to two sections of an introductory business course in the college of business of a regional southern university and to a variety of business course sections at four German universities: the University of Applied Sciences Cologne (Institute for Insurance), the University Duisburg-Essen, the University of Applied Sciences and Arts Dortmund and the Berufsakademie Bad Mergentheim. The survey contains questions to measure 1) the level of individual uncertainty avoidance, and 2) the various

components of prospect theory described above in the hypotheses. This allows us to directly test the stated hypotheses.

The course at the U.S. institution includes majors from all business disciplines and both commuter and traditional students. Students were informed about the survey in class prior to launching the survey, through email communication, and through a Blackboard announcement. All students completing the survey received extra credit and were aware of this prior to completing the survey. Students were informed that they should not answer questions they did not feel comfortable answering.

In Germany, students were also informed about the survey prior to administering it. However, the German students did not receive extra credit for completing it, as this is not standard practice in Germany. The surveys were administered in English, and all students who took the survey were fluent in English.¹ Nonetheless, at least one individual from the U.S. was present to answer clarifying questions while the students completed the survey. As in the U.S., students were informed that they should not answer questions they were not comfortable answering.

In the U.S. 283 students completed the survey. Of these students, 70 students either did not answer some questions in the survey or provided nonsensical responses, leaving a final U.S. sample of 213 students. In Cologne, the survey was administered to 108 students in six different insurance courses. Eliminating incomplete surveys resulted in a final sample of 81 students from the Cologne University of Applied Sciences. In Duisburg, the survey was administered to a mass section of business management with 191 students, with a final sample of 117 students. In Dortmund, the survey was administered to 71 students in five different business courses, with a final sample of 34 students. In Bad Mergentheim, the survey was administered to 88 students in five different business courses, with a final sample of 64 students.

Consequently, the overall sample for the U.S. consists of 213 students, while the total German sample consists of 295 students. The demographic characteristics of the sample are summarized in Table 1.

Table 1. Sample Description

	Mean (Median) Age	% Male (% Female)	% Traveled Abroad	% Employed Prior to University	% Employed at Time of Survey
Entire Sample	23.46 (22)	49% (51%)	89%	51%	63%
U.S. Sample	23.53 (23)	52% (48%)	74%	74%	62%

Panel A (Total sample) had a median age of 23, with 49% of respondents being male and the other 51% being female. 89% of the entire sample had traveled abroad at least once, 51% were employed prior to university and 63% indicated that they were employed at the time of the survey. Participants from the United States had a median age of 23, with 52% of our survey respondents being male. 74% of Panel B affirmed that they had been employed prior to entering university and 62% continued to hold jobs while attending college. Another 74% of those who took the questionnaire indicated that they had traveled abroad at least once. 46% of German respondents identified themselves as being male. The median age of our questionnaire participants in Germany was 23 and 99% indicated that they had traveled abroad at least once. 36% of our German students had been employed prior to university and 64% were employed at the time of the survey.

Although not reported in Table 1, we computed the average uncertainty avoidance index for each of the two countries. To assess uncertainty avoidance, we utilized the five questions developed by Dorfman and Howell (1988). Responses to these five questions were averaged for each country. For the US, the average UA score was 3.32, while it was 3.17 for the German sample. This difference is significant at the .01 level. H1 is therefore rejected. These results contradict Hofstede's original 1983 results. However, Hofstede acknowledged that cultures can and do

¹ In fact, some of the courses in Cologne, Dortmund, and Bad Mergentheim were taught in English.

change over time. Given the recent nature of the global financial crisis, it is perhaps not surprising that the US has a higher uncertainty avoidance score; if the survey had been conducted at the height of the housing bubble, the results could have been much different.

Results

Table 2 presents the results from the prospect theory questions originally presented in Kahneman and Tversky (1979). Seventeen of these original questions are presented to provide a cross-section of the different effects shown by Kahneman and Tversky. In Table 2, columns 3 and 4 present the original results by Kahneman and Tversky. In their paper, the authors reported only significance at the 1% level.

Columns 5 and 6 in Table 2 present the results from our total sample of 508 American and German students. As indicated in these columns, the results for our total sample confirm Kahneman and Tversky's results for 12 out of the 17 questions. Four of the reflection effect questions are not supported by our sample, with two of these questions having the opposite sign as expected. For example, when asked to choose between (-4000, .8; -3000), 92 percent of respondents in KT's original paper chose to gamble and picked the first choice. In our sample, however, only about 53 percent of the respondents chose to gamble. Given the recency of the financial crisis to the administration of these surveys, it is perhaps not surprising that so many students chose not to gamble. The last question where the response from our sample does not coincide with the KT findings concerns the convexity of losses; when asked to choose between (-6000, .25; -4000,.25,-2000,.25), 70 percent of KT's original sample chose the first choice, thus implying that the sum of the absolute values of the separate 4000 and 2000 losses is greater than the 6000 loss, which implies convexity in losses. In our sample, however, we find no significant difference with respect to the two choices, implying neither convexity nor concavity in the domain of losses.

Columns 7 and 8 of Table 2 present the results for the US. These results are virtually indistinguishable from the total sample results, with one exception. In addition to the five questions that differed from KT's original findings for the total sample, when given the choice of a 5 percent probability of a three-week tour of England and a 10 percent probability of a one-week tour, most respondents in the US still chose the less likely 5 percent, confirming KT's findings. This difference, however, is not significant at conventional levels.

Columns 9 and 10 of Table 2 present the results for the German sample of 295 students from four different universities. For the German sample, the same five questions that did not line up with KT's original findings did not line up for this sample.

The last column of Table 2 presents the p-value for a test of difference between the US and German responses, by question. For six questions, there is a significant difference between the US and German responses. However, for four of these six questions where the difference is significant the respective American and German responses were significant in the same direction. Thus, for these four questions, the magnitude was simply more pronounced for one of the samples. For example, when given the choice of (50% 3-week tour of England; 1-week tour with certainty), 69 percent of American respondents chose the certain outcome and 59 percent of the German respondents chose the certain outcome. That difference is significant at the .05 level.

Table 2. Results from Kahneman and Tversky's (1979) and from American and German Samples.

Effect	Question	KT Choice 1	KT Choice 2	Total Sample Choice 1 ^a	Total Sample Choice 2	U.S. Choice 1 ^b	U.S. Choice 2	Germany Choice 1 ^c	Germany Choice 2	U.S./ Germany Difference p-Value
Certainty	(50% 3-week tour of England; 1-week tour with certainty)	22.00%	78.00%***	36.54%	63.46%***	30.99%	69.01%***	40.54%	59.46%***	0.027**
Certainty	(5% 3-week tour of England; 10% 1-week tour)	67.00%***	33.00%	59.72%***	40.28%	54.46%	45.54%	63.51%***	36.49%	0.040**
Certainty	(4000,.8;3000)	20.00%	80.00%***	28.49%	71.51%***	30.99%	69.01%***	26.69%	73.31%***	0.2890
Reflection	(-4000,.8;-3000)	92.00%***	8.00%	52.65%	47.35%	46.48%	53.52%	57.09%**	42.91%	0.018**
Certainty	(4000,.2;3000,.25)	65.00%***	35.00%	61.49%***	38.51%	61.03%***	29.97%	61.82%***	38.12%	0.8570
Reflection	(-4000,.2;-3000,.25)	42.00%	58.00%	49.90%	51.10%	50.70%	49.30%	49.32%	50.68%	0.7570
Certainty	(6000,.45;3000,.9)	14.00%	86.00%***	17.09%	82.81%***	18.78%	81.22%***	15.88%	84.12%***	0.3900
Reflection	(-6000,.45;-3000,.9)	92.00%***	8.00%	41.65%	58.35%***	37.09%	62.81%***	44.93%	55.07%*	0.077*
Low Probability	(6000,.001;3000,.002)	73.00%***	27.00%	73.67%***	26.33%	72.3%***	27.70%	74.66%***	25.34%	0.5490
Low Probability/ Reflection	(-6000,.001;-3000,.002)	30.00%	70.00%***	53.63%	46.37%	51.64%	48.36%	55.07%*	44.93%	0.4470
Low Probability	(5000,.001;5)	72.00%***	28.00%	59.33%***	40.67%	55.87%*	44.13%	61.82%***	38.12%	0.1770
Low Probability/ Reflection	(-5000,.001;-5)	17.00%	83.00%***	43.61%	56.39%***	43.66%	56.34%*	43.58%	56.42%**	0.9840
Isolation	Two-stage (1000,.5;500)	16.00%	84.00%***	27.70%	72.30%***	34.27%	65.73%***	22.97%	77.03%***	0.005***
Isolation/ Reflection	Two-stage (-1000,.5;-500)	69.00%***	31.00%	38.70%	61.30%***	38.70%	61.30%**	36.15%	63.85%***	0.1650
Concavity of Gains	(6000,.25;4000,.25,2000,.25)	18.00%	82.00%***	21.41%	78.59%***	18.78%	81.22%***	23.31%	76.69%***	0.2190
Convexity for Losses	(-6000,.25;-4000,.25,-2000,.25)	70.00%***	30.00%	47.54%	52.46%	44.13%	55.87%*	50.00%	50.00%	0.1900
Isolation	Two-stage (4,000,.8;3000)	22.00%	78.00%***	26.13%	73.87%***	32.39%	67.61%***	21.62%	78.38%***	0.006***

Notes to Table 2:

* Significant at the .10 level.

** Significant at the .05 level.

*** Significant at the .01 level.

^a The total sample consists of 509 American and German students.

^b The U.S. sample consists of 214 American students from a regional southern university.

^c The German sample consists of 295 German students from four German universities: The University of Applied Sciences Cologne, the Berufsakademie Bad Mergentheim, the University of Applied Sciences and Arts Dortmund, and the University Duisburg-Essen.

For two questions, the proportion difference between America and Germany is significant and the individual American and US responses are not in the same direction. When asked to choose between (5% 3-week tour of England; 10% 1-week tour) German respondents significantly preferred choice 1, while there was no significant preference among the American respondents. When asked to choose between (-4000,.8;-3000), 57 percent of the German respondents preferred to gamble, while there was no significant preference among the American respondents. For these two questions, it therefore seems that the German sample is more prone to gambling than the American sample, which is surprising.

Overall, the results displayed in Table 2 indicate a strong resemblance to the findings originally reported by Kahneman and Tversky (1979), with minimal differences between the two subsamples of American and German students. These results are encouraging, since they indicate that prospect theory and loss aversion persist in both countries.

While Table 2 reports the choices American and German students make when faced with risky alternatives, it does not speak to the degree to which uncertainty avoidance influences those choices. The questions presented in Table 2 can be grouped together to form pairs and, if an individual is particularly uncertainty avoidant, certain responses should be expected for these paired questions. For example, consider the third and fourth question in Table 2: (4000,.8;3000) and (-4000,.8;-3000). KT reported, and our respondents confirm, that most individuals will choose the certain 3000 gain but avoid the certain loss. However, respondents with a high degree of uncertainty avoidance would perhaps be expected to prefer the certain -3000 over the possible 4000 loss.

Table 3. Test for Uncertainty Avoidance Differences Across Responses for Grouped Questions (American Sample).

Effect	Questions	UA Category Mean		
		0 ^a	1 ^a	2 ^a
Certainty Certainty	(50% 3-week tour of England; 1-week tour with certainty) (5% 3-week tour of England; 10% 1-week tour)	3.32 (.72)	3.28 (.20)	3.39 (.48)
Certainty Reflection	(4000,.8;3000) (-4000,.8;-3000)	3.27 (.92)	3.28 (.16)	3.39 (.23)
Certainty Reflection	(4000,.2;3000,.25) (-4000,.2;-3000,.25)	3.28 (.65)	3.24 (.02)**	3.47 (.03)**
Certainty Reflection	(6000,.45;3000,.9) (-6000,.45;-3000,.9)	3.43 (.12)	3.23 (.13)	3.35 (.49)

Low Probability Low Probability/Reflection	(6000,.001;3000,.002) (-6000,.001;-3000,.002)	3.34 (.42)	3.27 (.35)	3.37 (.74)
Low Probability Low Probability/Reflection	(5000,.001;5) (-5000,.001;-5)	3.29 (.89)	3.28 (.13)	3.41 (.15)
Isolation Isolation/ Reflection	Two-stage (1000,.5;500) Two-stage (-1000,.5;-500)	3.27 (.66)	3.32 (.69)	3.35 (.35)
Concavity of Gains Convexity of Losses	(6000,.25;4000,.25,2000,.25) (-6000,.25;-4000,.25,-2000,.25)	3.52 (.05)**	3.28 (.57)	3.32 (.12)
All 16 Questions Combined ^b		3.29 (.98)	3.29 (.19)	3.39 (.35)
Positive Questions Only ^c		3.24 (.66)	3.29 (.02)**	3.51 (.04)**
Negative Questions Only ^d		3.15 (.01)***	3.38 (.82)	3.36 (.09)*

Notes to Table 3:

* Significant at the .10 level.

** Significant at the .05 level.

*** Significant at the .01 level.

^a Categories are formed based on the level of risk aversion inherent in the questions. A more risk averse individual would be expected to choose the more certain outcome, ceteris paribus, for each pair of questions. A UA category mean of 0 means that the individual chooses the less certain outcome (i.e., the outcome contradictory to risk-aversion) for each question; a category mean of 1 means the individual chooses the more certain outcome for one of the two questions; a category mean of 2 means the individual chooses the more certain outcome for both of the questions. The p-value for UA category 0 is for the difference between categories 0 and 1; the p-value for UA category 1 is for the difference between categories 1 and 2; and the p-value for UA category 3 is for the difference between categories 0 and 2.

^b Category 0 for all 16 questions consists of responses of 0-6, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 7-10; category 2 consists of responses 11-16. Thus, the higher the category, the more risk averse the individual is.

^c Category 0 for the seven positive questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

^d Category 0 for the seven negative questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

The three rightmost columns in Table 3 present the UA means, for the five Dorfman and Howell (1988) questions for each of the three categories discussed in the previous paragraph. Below each category, p-values are reported for differences in these means. For category 0, the p-value is for differences between categories 0 and 1; for category 1, the p-value is for differences between categories 1 and 2; for category 2, the p-value is for differences between categories 0 and 2. If greater UA results in individuals choosing the less risky alternative, then we should expect higher UA categories to have a significantly higher mean.

Table 4. Test for Uncertainty Avoidance Differences Across Responses for Grouped Questions (German Sample).

Effect	Questions	UA Category Mean		
		0 ^a	1 ^a	2 ^a
Certainty Certainty	(50% 3-week tour of England; 1-week tour with certainty) (5% 3-week tour of England; 10% 1-week tour)	3.08 (.09)*	3.20 (.91)	3.19 (.19)
Certainty Reflection	(4000,.8;3000) (-4000,.8;-3000)	3.18 (.62)	3.14 (.35)	3.20 (.83)
Certainty Reflection	(4000,.2;3000,.25) (-4000,.2;-3000,.25)	3.14 (.57)	3.18 (.86)	3.17 (.74)
Certainty Reflection	(6000,.45;3000,.9) (-6000,.45;-3000,.9)	3.18 (.92)	3.17 (.86)	3.16 (.84)
Low Probability Low Probability/Reflection	(6000,.001;3000,.002) (-6000,.001;-3000,.002)	3.14 (.91)	3.13 (.04)**	3.33 (.02)**
Low Probability Low Probability/Reflection	(5000,.001;5) (-5000,.001;-5)	3.11 (.74)	3.13 (.05)**	3.29 (.03)**
Isolation Isolation/ Reflection	Two-stage (1000,.5;500) Two-stage (-1000,.5;-500)	3.13 (.98)	3.13 (.29)	3.20 (.43)
Concavity of Gains Convexity of Losses	(6000,.25;4000,.25;2000,.25) (-6000,.25;-4000,.25;-2000,.25)	3.22 (.33)	3.13 (.40)	3.19 (.74)
All 16 Questions Combined ^b		3.05 (.07)*	3.19 (.90)	3.20 (.13)
Positive Questions Only ^c		3.24 (.20)	3.12 (.01)***	3.31 (.50)
Negative Questions Only ^d		3.17 (.78)	3.15 (.22)	3.27 (.40)

Notes to Table 4:

* Significant at the .10 level.

** Significant at the .05 level.

*** Significant at the .01 level.

^a Categories are formed based on the level of risk aversion inherent in the questions. A more risk averse individual would be expected to choose the more certain outcome, *ceteris paribus*, for each pair of questions. A UA category mean of 0 means that the individual chooses the less certain outcome (i.e., the outcome contradictory to risk-aversion) for each question; a category mean of 1 means the individual chooses the more certain outcome for one of the two questions; a category mean of 2 means the individual chooses the more certain outcome for both of the questions. The p-value for UA category 0 is for the difference between categories 0 and 1; the p-value for UA category 1 is for the difference between categories 1 and 2; and the p-value for UA category 3 is for the difference between categories 0 and 2.

^b Category 0 for all 16 questions consists of responses of 0-6, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 7-10; category 2 consists of responses 11-16. Thus, the higher the category, the more risk averse the individual is.

^c Category 0 for the seven positive questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

^d Category 0 for the seven negative questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

To evaluate whether a higher degree of uncertainty avoidance results in different choices when our American sample is faced with risky alternatives, Table 3 presents the mean for the uncertainty avoidance construct² for each of seven question pairs. To accomplish this, we first grouped the questions such that the positive and negative counterparts were included in each pair. Next, we formed three uncertainty avoidance (UA) categories of 0, 1, and 2, which are increasing in uncertainty avoidance. Here, a UA category of zero indicates that the individual chooses the riskier alternative for both questions; a UA category of 1 indicates that the individual chooses the riskier alternative for one of the two questions; a UA category of 2 indicates that the individual chooses the less risky alternative for each of the two questions.

Table 3 shows that this is the case for only one question pair; when given the choice (4000,.2;3000,.25) and its negative counterpart, American individuals with a UA mean of 3.47 pick the more certain 3000 and -3000, while American individuals with a UA mean of 3.28 pick the less certain 4000 and -4000. This difference is significant at the .05 level. The differences for the other seven question pairs are not significant.

To investigate whether the UA categories differ for all sixteen questions combined, we conducted the same test. Again, the results indicate that there is no significant difference in choice alternatives across UA categories. Interestingly, as shown in the last two rows of Table 3, when the sample is split between positive and negative questions only, each of these differences is significant! For positive questions and negative questions, it indeed appears that Americans with a higher degree of uncertainty avoidance pick the choices that are less risky.

Table 4 repeats the analysis in Table 3 for the sample of 295 German students. For the individual eight question pairs, the results are similar to those reported in Table 3; for only two question pairs greater UA is associated with individuals choosing the less risky choices. Unlike for the American sample, however, there is little evidence that greater UA results in picking less risky choices for all sixteen questions combined and for negative questions only. However, for positive questions, the difference between UA categories 1 and 2 is highly significant, providing some support that great UA results in picking less risky choices for at least positive choice alternatives.

To further investigate the direct link between UA and choices among risky alternatives, we next regressed the UA categories for each of the eight question pairs, as formed in Tables 3 and 4, on the individual UA construct averages. The results from these regressions are shown in Table 5.

If higher UA leads to individuals' choosing the less risky alternative, then the coefficient β_1 should be positive. Panel A of Table 5 reports the results for the American sample, while Panel B reports the results for the German sample. The results reported in Table 5 are identical to the results reported in Tables 3 and 4, which should be

² Five questions were used to assess uncertainty avoidance, taken from Dorfman and Howell (1988).

expected. For the American sample, in addition to one individual question pair, the positive and negative question choices are positive related to uncertainty avoidance. For the German sample, only two individual question pairs show the expected relationship between UA and choices among risky alternatives. Overall, these results provide only minimal support for H2, that higher UA is associated with choosing more certain alternatives.

Thus far, the results indicate minimal evidence that greater uncertainty avoidance is associated with Americans' and Germans' choices among risky alternatives. The results reported in Table 2 indicate that Americans and Germans, for the most part, make similar choices to the results originally reported by Kahneman and Tversky (1979). An interesting follow-up question is whether Americans and Germans show a different relationship between uncertainty avoidance and choices among risky alternatives. If UA can at least partially explain individuals' choices among risky alternatives, then the results should be expected not to differ across countries.

Table 5. Regression Results for Prospect Theory Questions Regressed on An Uncertainty Avoidance Index.

<i>Panel A – Regressions by Grouped Questions (American Sample)</i>				
Effect	Question	Intercept (β_0)	Uncertainty Avoidance (β_1)	R-Squared
Certainty Certainty	(50% 3-week tour of England; 1-week tour with certainty) (5% 3-week tour of England; 10% 1-week tour)	.88 (2.88)***	.08 (.88)	-.10%
Certainty Reflection	(4000,.8;3000) (-4000,.8;-3000)	.77 (2.34)**	.14 (1.41)	0.50%
Certainty Reflection	(4000,.2;3000,.25) (-4000,.2;-3000,.25)	.24 (.68)	.19 (1.88)*	1.20%
Certainty Reflection	(6000,.45;3000,.9) (-6000,.45;-3000,.9)	1.39 (4.66)***	.02 (.19)	-0.50%
Low Probability Low Probability/Reflection	(6000,.001;3000,.002) (-6000,.001;-3000,.002)	.74 (2.25)**	.01 (.06)	-0.50%
Low Probability Low Probability/Reflection	(5000,.001;5) (-5000,.001;-5)	.56 (1.65)*	.13 (1.31)	0.30%
Isolation Isolation/Reflection	Two-stage (1000,.5;500) Two-stage (-1000,.5;-500)	.92 (2.61)***	.09 (.89)	-.01%
Concavity of Gains Convexity for Losses	(6000,.25;4000,.25,2000,.25) (-6000,.25;-4000,.25,-2000,.25)	1.56 (5.48)***	-.08 (-.94)	-.10%
All 16 Questions Combined ^a		.77 (2.51)**	0.10 (1.09)	0.10%
Positive Questions Only ^b		.51 (2.11)**	.16 (2.21)**	1.80%
Negative Questions Only ^c		.38 (1.37)	.17 (2.01)**	1.40%

<i>Panel B – Regressions by Grouped Questions (German Sample)</i>				
Effect	Question	Intercept (β_0)	Uncertainty Avoidance (β_1)	R-Squared
Certainty Certainty	(50% 3-week tour of England; 1-week tour with certainty) (5% 3-week tour of England; 10% 1-week tour)	.61 (2.38)**	.11 (1.37)	.30%
Certainty Reflection	(4000,.8;3000) (-4000,.8;-3000)	.106 (4.30)***	.03 (.44)	-0.30%
Certainty Reflection	(4000,.2;3000,.25) (-4000,.2;-3000,.25)	.78 (2.88)***	.03 (.39)	-0.30%
Certainty Reflection	(6000,.45;3000,.9) (-6000,.45;-3000,.9)	1.44 (6.45)***	-.02 (-.24)	-0.30%
Low Probability Low Probability/Reflection	(6000,.001;3000,.002) (-6000,.001;-3000,.002)	.27 (1.04)	.14 (1.70)*	0.60%
Low Probability Low Probability/Reflection	(5000,.001;5) (-5000,.001;-5)	.39 (1.46)	.18 (2.11)**	1.20%
Isolation Isolation/Reflection	Two-stage (1000,.5;500) Two-stage (-1000,.5;-500)	1.14 (4.40)***	.09 (1.06)	.00%
Concavity of Gains Convexity for Losses	(6000,.25;4000,.25,2000,.25) (-6000,.25;-4000,.25,-2000,.25)	1.21 (4.90)***	.00 (.01)	-.30%
All 16 Questions Combined ^a		.72 (3.11)**	0.11 (1.50)	0.40%
Positive Questions Only ^b		.85 (4.37)***	.06 (1.01)	0.00%
Negative Questions Only ^c		.74 (3.53)***	.04 (.62)	-0.20%

Notes to Table 5:

* Significant at the .10 level.

** Significant at the .05 level.

*** Significant at the .01 level.

^a Category 0 for all 16 questions consists of responses of 0-6, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 7-10; category 2 consists of responses 11-16. Thus, the higher the category, the more risk averse the individual is.

^b Category 0 for the seven positive questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

^c Category 0 for the seven negative questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

Table 6. Regression Results for Prospect Theory Questions Regressed on An Uncertainty Avoidance Index and Interaction Term.

Effect	Question	Intercept (β_0)	UA (β_1)	UA*D (β_2)	D (β_3)	R-Squared
Certainty Certainty	(50% 3-week tour of England; 1-week tour with certainty) (5% 3-week tour of England; 10% 1-week tour)	.88 (2.87)***	.08 (.87)	.03 (.25)	-.27 (-.67)	1.60%
Certainty Reflection	(4000,.8;3000) (-4000,.8;-3000)	.77 (2.48)**	.14 (1.50)	-.10 (-.85)	.29 (.72)	0.10%
Certainty Reflection	(4000,.2;3000,.25) (-4000,.2;-3000,.25)	.24 (.71)	.19 (1.95)*	-.16 (-1.22)	.55 (1.25)	0.20%
Certainty Reflection	(6000,.45;3000,.9) (-6000,.45;-3000,.9)	1.39 (4.93)***	.02 (.20)	-.03 (-.30)	.06 (.16)	-.40%
Low Probability Low Probability/Reflection	(6000,.001;3000,.002) (-6000,.001;-3000,.002)	.74 (2.32)**	.01 (.07)	.13 (1.04)	-.50 (-1.13)	0.10%
Low Probability Low Probability/Reflection	(5000,.001;5) (-5000,.001;-5)	.56 (1.71)*	.13 (1.36)	.04 (.33)	-.17 (-.41)	0.70%
Isolation Isolation/Reflection	Two-stage (1000,.5;500) Two-stage (-1000,.5;-500)	0.92 (2.80)***	0.09 (.96)	-.01 (-.07)	.22 (.51)	1.00%
Concavity of Gains Convexity for Losses	(6000,.25;4000,.25,2000,.25) (-6000,.25;-4000,.25,-2000,.25)	1.56 (5.33)***	-.08 (-.91)	.08 (.69)	-.35 (-.91)	-.10%
All 16 Questions Combined ^a		.77 (2.65)***	.10 (1.16)	.01 (.07)	-.05 (-.13)	0.20%
Positive Questions Only ^b		.51 (2.15)**	.16 (2.25)**	-.10 (-1.05)	.34 (1.10)	0.60%
Negative Questions Only ^c		.38 (1.45)	.17 (2.13)**	-.13 (-1.21)	.36 (1.04)	0.70%

Notes to Table 6:

* Significant at the .10 level.

** Significant at the .05 level.

*** Significant at the .01 level.

^a Category 0 for all 16 questions consists of responses of 0-6, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 7-10; category 2 consists of responses 11-16. Thus, the higher the category, the more risk averse the individual is.

^b Category 0 for the seven positive questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

^c Category 0 for the seven negative questions (the tour question was excluded from this analysis) consists of responses of 0-2, where the number indicates the number of responses corresponding to a more risk-averse choice; category 1 consists of responses 3-5; category 2 consists of responses 6-7. Thus, the higher the category, the more risk averse the individual is.

Table 6 presents an additional regression analysis, including two additional independent variables: an interaction term between the UA index and a dummy variable D, which is equal to unity for a German respondent and zero otherwise. The second independent variable is the dummy variable itself. In the regression results, the coefficient β_3 indicates the additional change in the dependent variable for Germans, holding UA constant. As shown in Table 6, none of the coefficients are significant, illustrating that there is no significant difference in the relationship between uncertainty avoidance and choices among risky alternatives between Americans and Germans. This supports our third hypothesis, H3.

Overall, the results reported in Table 2 through 6 reveal the following. First, the choices among risky alternatives reported here are quite similar to the original results reported by Kahneman and Tversky (1979) for the total sample and for each of the two subsamples. Second, there is limited evidence that choices among risky alternatives can be explained by the cultural dimension of uncertainty avoidance. However, at least for the American sample, there is some evidence that individuals with higher uncertainty avoidance pick choices that are more certain. Third, there appears to be no difference between the American and German samples in the relationship between uncertainty avoidance and choices among risky alternatives.

Conclusion

Our research has confirmed much of what Kahneman and Tversky discovered in 1979. Many of their prospect theory questions have been confirmed 30 years later, even if Hofstede's assertions regarding cultural disparity in uncertainty avoidance have not. Regression analyses performed on our samples have shown that the prospect theory choices one makes are at least partially predicated on their UA index score. Moreover, there is no significant difference between the prospect theory choices and uncertainty avoidance relationship across the two countries investigated here. Disparity in UA index scores within cultures preclude us from making broad generalizations based on entire countries but our results support the notion that given an individual's UA index score we can partially predict what prospect theory options they would choose.

There is still additional research to be done. We investigate only two countries in the current study. It would be interesting to investigate whether the relationships reported here hold when additional countries are included, particularly if those countries possess significantly different cultural attributes than the US and Germany. Moreover, it would be interesting to investigate whether the results are robust over time; does the relationship between UA and prospect theory choices remain constant when countries are faced with events such as the global financial crisis that radically change the level of UA on a macro level? We believe that much can be learned from future research that continues to investigate the relationship between positive theories of choices and cultural dimensions.

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Marketing's Influence as an Antecedent of Differences of Sales-Marketing Thought Worlds in Mexican Companies.

Completed Research Paper

Dr. Carlos Valdez

*University of Central
Florida*

Dr. Jorge Villegas

*University of Illinois at
Springfield*

Evan Gallagher

*University of Illinois at
Springfield*

Introduction

Based in the Thought-World Differences model proposed by Homburg and Jensen (2007) and an understanding of marketing in an emerging country like Mexico, this study examines how marketing's influence helps or hinders the alignment of orientation and competence of sales and marketing subunits in an organization. The objectives of this study are twofold: (1) replicate Homburg and Jensen's (2007) work in a less developed country than the original study's setting; (2) explore how marketing's influence on the organization has an impact on these thought-worlds.

Literature Review: Replicating the Model Abroad

Attention on the interface between marketing and sales is increasing (Homburg Jensen and Krohmer, 2008; Homburg and Jensen, 2007; Rouzies, Anderson, Kholi, Michaels, Weits and Zoltners, 2005). This is a relevant issue since it is widely recognized that there is a need for a better integration of the sales and marketing areas because a positive integration between these areas enhances the market orientation of the organization (Rouzies et al. 2005) and the firm performance (Lam, Kraus and Ahearne, 2010; Le Meunier-FitzHugh and Lande, 2009). A strong market orientation of the firm will impact the business operations in the short and long run (Kumar, Jones, Venkatesan and Leone, 2011). In a model developed by Homburg and Jensen (2007), the differences between sales and marketing are conceptualized as thoughts worlds that comprise two types of dimensions: orientation and competence. The first dimension refers to the "goals, time horizons, and objects" (p. 125) that organizational subunits use to develop their plans. More specifically, the authors identify two orientations: customer (versus product) and long (versus short) time. Competence, the second dimension is defined as "the level of technical and social capabilities in marketing and sales" (p. 126). The specific sub-dimensions are market knowledge, product knowledge, and interpersonal skills. In this model, the differences between marketing and sales on the five dimensions reduce the quality of cooperation between these two units as well as the market performance of the organization.

The homogenization of goals and vision between marketing and sales is a challenge since a problematic relationship between marketing and sales has been consistently found by researchers (Homburg and Jensen, 2007; Rouzies et al. 2005). In Mexican organizations this problematic relationship is influenced as well by the definition and use of power or influence within these two areas. Previous studies have suggested that Mexico provides an interesting cultural comparison with U.S. in terms of power inside the organizations (Frucot and Shearon, 1991). Using the Power distance construct from Hofstede (Lackman, Hanson and Lanasa, 1997) in the business setting, Mexican companies' culture lean toward a high power distance where a more autocratic leadership style and less participatory environment is preferred. For example Mexican employees perceive in a positive way a manager that has controlling power over them (Page and Wiseman, 1993). Mexican workers are looking for a defined power structure inside of their organizations and hierarchical structure where a top leader takes major decisions (Schuler, Jackson, Jackofsky and Slocum, 1996).

Homburg and Jensen's (2007) model has not been applied in Mexico since marketing activities of Latin American companies has not been researched as thoroughly as other regions of the world. One of the few empirical studies of

Mexican companies found that even in the more developed Northeast region of this country many companies do not budget nor prepare marketing plans (Felix and Hinck, 2005). This result is also found in other developing countries in the Middle East, Eastern Europe, and Africa. These studies suggest that marketing plays a less relevant role in companies compared to their counterparts in developed countries since major marketing decisions such as pricing and research is done by others members of the organization instead of marketing (Kobylanski and Radoslaw, 2011). The results obtained in less developed and non-Western countries suggest that the marketing influence of the marketing department is more vital than in developed countries to reduce the differences between different strategic perspectives in the organization (Kobylanski and Radoslaw, 2011) since companies that are developing a market orientation have to depend more on the marketing department to be the organizational agent that reduces the differences between diverse units of the organization (Gebhardt, Carpenter, and Sherry, 2006). Also a strong marketing department will influence the organization towards a market orientation strategy (Verhoef and Leeflang, 2009). The findings of marketing and cultural studies suggest that marketing's organizational influence would reduce the differences of orientation and competence between marketing and sales generating a more homogenous relationship dynamic within the areas and better business results.

Hypotheses

According to Homburg and Jensen (2007), the thoughts worlds differences between sales and marketing are conceptualized by two types of dimensions: orientation and competence. Orientation refers to time strategy that the organizational subunits like marketing and sales use to develop their plans. The authors identify two orientations: customer (versus product) where sales focus more in the customer needs and marketing in product success; and long (versus short) time planning where sales focus more in quick results and marketing in long-term results. In this study we define marketing influence as the level of power the marketing department has within the organization versus the sales department. Thus we expect the following:

H1: The differences between the sales and marketing in terms of (a) customer and (b) long-term orientation will be negatively related to marketing's organizational influence.

The second dimension from the Homburg and Jensen (2007) thoughts worlds model is competence. Competence is defined as the knowledge and intrapersonal skills of the members of the marketing and sales areas. The specific sub-dimensions are market knowledge, product knowledge, and interpersonal skills. The market knowledge dimension is defined by how knowledgeable the employee is in terms of customers and competitors and the product knowledge, how knowledgeable is in terms of the product itself and the production process. Intrapersonal skills is defined as the type of soft skills that employee use to develop relationships with other members of the organization as well as clients. Thus:

H2: The differences between the sales and marketing competence in terms of (a) market knowledge, (b) product knowledge, and (c) interpersonal skills will be negatively related to marketing's organizational influence.

In the thoughts worlds model, the differences between marketing and sales on the five sub-dimensions mentioned early affects the quality of cooperation between these two areas. We hypothesize the following:

H3: The differences between sales and marketing departments in terms of orientation ((a) customer and (b) long-term orientation) and competence ((c) market knowledge, (d) product knowledge, and (e) interpersonal skills) will be negatively related to quality of cooperation between marketing and sales.

Homburg and Jensen (2007) define the quality of cooperation as the capacity of these two areas to work together to reach specific organizational goals that will have positive impact in the marketing performance of the company. We expect the following:

H4: The quality of cooperation between marketing and sales is positively related to the marketing performance of the organization.

Method

In order to test the hypotheses presented, an online survey was designed. Instructors of MBA courses at a private university with 26 campuses in Mexico requested the participation of students enrolled in their courses. The subjects

received an email that contained the invitation to the study, the informed consent, and the link to the online survey. It is believed that this sample is adequate for this study since most students in this graduate business school are part time students. Also, the students were distributed in many cities of Mexico.

Due to the interest of replicating Homburg and Jensen’s (2007) study in the Latin American context, the measures of their Sales-Marketing Thought Worlds model were used in this study. The items of each construct were translated-backtranslated and reviewed by marketing academics to ensure that the translated items measured the original objective of each item. After the collection of data the constructs were analyzed using confirmatory factorial analysis to ensure the structural stability of the items for each construct. All the items were measured using a 5-point Likert scale. The calculations of the differences between world views of Orientation (customer and time orientation) and Competence (market knowledge, product knowledge, and interpersonal skills) also followed Homburg and Jensen’s method in which each orientation and competence was measured for marketing and for sales and the difference was squared. Based on research on marketing influence, the study also included an assessment of the perceived marketing influence of the marketing and sales department in the organization. The measurement used the following items “in general, the sales department has more power than the marketing area” and “in general, the marketing department has more power than the sales area”. The items used a 5-point Likert-scale. After a successful reliability analysis, the sales power item was reversed and added to the marketing power item and divided by two.

Results

Sample

The data collection resulted in 485 responses. The final number of participants was 352 after incomplete questionnaires and respondents who did not work in marketing, sales, collaborated or supervised none of these two areas were omitted from the analysis. The data suggests that the sample includes relatively young employees since the average number of years working in a discipline is 5 years. Gender was almost equally divided between male and females (46% vs. 54%). More than half of the subjects of the study worked for large (500+ employees) or mid-sized corporations (100-499 employees). In terms of the role in the organization, 42% of the respondents worked in marketing while 20% reported to a sales department. The rest of the respondents supervised or had frequent interactions with sales and/or marketing. The industries represented in the study included all major commercial areas in Mexico: service, manufacturing, food and beverages, and others. Please see Table 1 for a detailed description of the sample.

Gender		
	Female	54%
	Male	46%
Relationship with marketing/sales		
	Marketing	42%
	Sales	20%
	Close relationship with the departments	34%
	Supervisor	4%
Years working in the area		
	Mean	5.32
	StdDev	5.05
Number of employees		
	1-20	19%
	21-50	8%
	51-100	15%
	101-500	18%
	500 +	40%
Industry		
	Services (Financial, education, professional)	44%
	Food and Beverages	17%
	Manufacturing	13%

	Retail	10%
	Building/Infrastructure	9%
	Pharmaceutical	4%
	Other	3%

n=352

Reliability of measures

As indicated by Table 2, the measures extracted from Homburg and Jensen's (2007) model had similar levels of reliability. Some noteworthy differences are time orientation that had a lower reliability than the original study and interpersonal skills difference that had a better reliability than the previous model. The assessment of the perceptions of marketing influence of the marketing and sales departments in an organization also suggested a reliable result ($\alpha=.66$).

	Composite reliability	
	Homburg and Jensen's (2007)	Current study
Quality of cooperation between marketing and sales	.93	.93
Market performance of business unit	.78	.89
Differences between marketing and sales in regard to customer (versus product) orientation	.88	.82
Differences between marketing and sales in regard to short-term (versus long-term) orientation	.63	.53
Differences between marketing and sales in regard to market knowledge	Formative scale	
Differences between marketing and sales in regard to product knowledge	Formative scale	
Differences between marketing and sales in regard to interpersonal skills	.69	.91

Descriptive Results

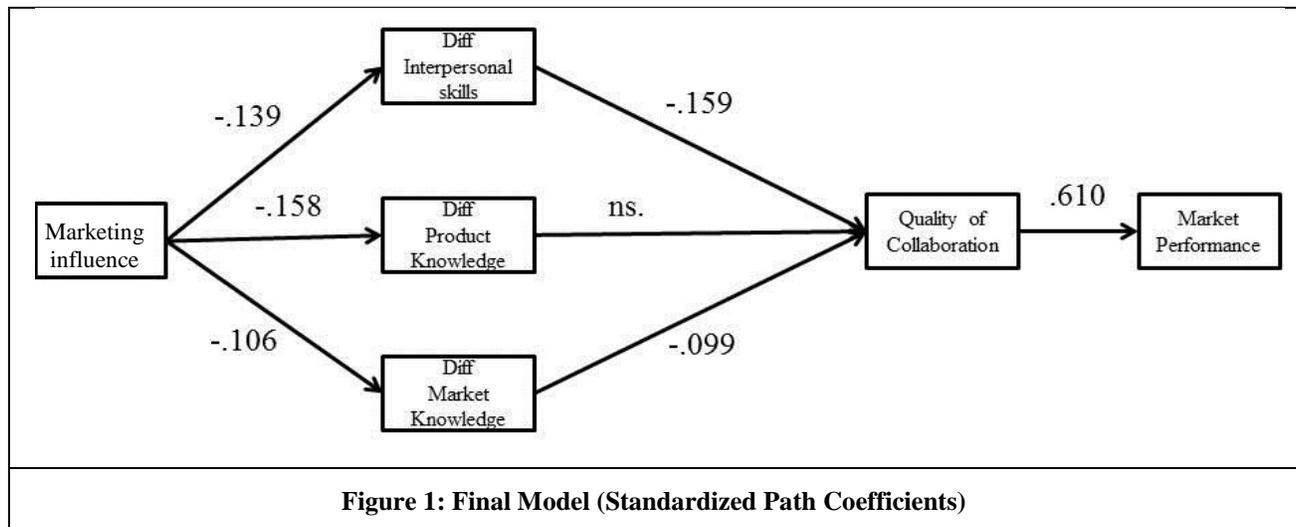
A series of t tests to determine the differences between sales and marketing areas in the sample suggest that in general, these two areas share generally similar views in terms of orientation and knowledge. As in the study by Homburg and Jensen (2007), sales was perceived as significantly more customer oriented than marketing. Please see Table 3 for a detailed description of the t test results.

		Marketing	Sales	t-test
Orientation				
	Product-Consumer orientation** (1=Product, 5=Customer)	3.30	3.55	$t(351)=4.13, p<.001$
	Short-Long term orientation (1=Long-term, 5= Short-term)	3.08	3.18	ns
Knowledge				
	Market knowledge (1=low, 5=high)	3.75	3.72	ns
	Product knowledge* (1=low, 5=high)	3.89	3.79	$t(351)=-2.17, p<.05$
	Interpersonal skills (1=low, 5=high)	3.69	3.72	ns

Hypotheses Tests

Due to the relatively limited size of the sample and the interest of testing a full model, the data was analyzed in a path analysis, instead of a full structural equation, that used the influence of marketing as the exogenous variable and the differences between the dimensions of thought worlds of marketing and sales (Orientation: customer and time orientation and Competence: market knowledge, product knowledge, and interpersonal skills), quality of cooperation, and market performance as the endogenous variables.

The original model that included the test of all the hypotheses was implemented in a path analysis using maximum likelihood estimation. The fit measurements did not suggest an adequate fit therefore the non-significant paths and constructs that did not have significant paths were dropped from the model. A final model that included the significant constructs and relationships suggested an appropriate fit ($\chi^2 = 7.2$, $df = 5$, $\chi^2/df = 1.44$, $GFI = .99$, $CFI = .99$, $RMSEA = .036$) (please see Figure 1).



The first two hypotheses forecasted that a higher marketing influence had a negative effect on the difference between the orientation (H1) and knowledge (H2) dimensions of sales and marketing. As mentioned previously, the two differences related to orientation (customer and time) were found non-significant in the original model therefore H1a and b were not supported by the results. The path of marketing influence and the three differences of knowledge (interpersonal skills, product, and market knowledge) were significant and as predicted, negative ($\gamma = -.139$, $p < 0.05$; $\gamma = -.158$, $p < 0.001$; $\gamma = -.106$, $p < 0.05$) (please see Table 4). Therefore H2a, b, and c were supported by the results.

			Std. Estimate	S.E.	C.R.	p
D. Interpersonal Skills	<	Marketing Influence	-.139	.041	2.528	.011
D. Market Knowledge	<	Marketing Influence	-.106	.064	1.911	.046
D. Product Knowledge	<	Marketing Influence	-.158	.064	2.882	.004
Quality of Collaboration	of <	D. Interpersonal Skills	-.159	.064	-3.545	.0001
Quality of Collaboration	of <	D. Market Knowledge	-.099	.036	-.913	.047
Market Performance	<	Quality of Collaboration	.610	.211	4.646	.0001

The

following hypothesis (H3) followed Homburg and Jensen's (2007) prediction that the five differences between sales and marketing would reduce the quality of the relationship between these areas. The results of the first path analysis suggest that customer (H3a) and time (H3b) orientation differences had no effect on quality of the relationship. In the final path analysis, product knowledge's coefficient (H3d) was non-significant as well. Interpersonal skills (H3c) and market knowledge (H3e) had significant and negative coefficients ($\gamma = -.159, p < 0.001$; $\gamma = -.099, p < 0.05$). Therefore, H3c and H3e were supported by the data. Finally, it was hypothesized that levels of quality between areas would be positively related to the perception of the market performance of the business unit. The final path analysis confirms this hypothesis (H4) since there is a strong relationship between these two variables ($\gamma = .610, p < 0.001$).

Discussion

The world view differences between marketing and sales departments in Mexican companies were relatively low. Apparently, there is a high level of homogeneity of views between these two areas. Interestingly, employees who work in sales were perceived as more consumer oriented than marketing employees who seems to be slightly more focused on the product. This might be the outcome of the different nature of their job. Marketers need to keep a global perspective of the brand while salespeople have to interact daily with their consumers. This argument would also explain why employees in marketing were perceived as more knowledgeable about the product than sales.

The final model results suggest that the influence of marketing reduces the differences between sales and marketing exclusively in the competence dimension. The results of this study partially replicate Homburg and Jensen's (2007) study by suggesting that differences of market knowledge and interpersonal skills have a negative influence in quality of cooperation and market performance.

This study demonstrates that, in contrast to Homburg and Jensen's (2007) model, the marketing influence of a marketing department in an organization might still be an important variable to consider in countries where this area does not have the same clout as in more developed countries. This need to study marketing influence between organizational units also needs to be explored since most of the development of marketing orientation models were empirically tested in countries with different cultural orientations from most Latin American countries. As it has been demonstrated by researchers, power distance in an organizational setting has a strong influence on employees' expectations of guidance and decision making from their leaders.

The results of the study suggest that marketing influence impacts the sales department's abilities but not its orientation toward consumers nor in terms of time frame. A possible explanation for these results is the ability of marketing to influence the selection of potential sales employees as well as their training and rewards. However, this influence does not influence to the focus of the sales team due to their need to deliver results in shorter terms than marketing and a need to think more about the consumer and their relationships with clients.

Notwithstanding the limitations of this study, the results suggest that in Mexican companies, marketing's influence in the organization helps to unify the level of competence of sales and marketing leading to a better relationship between these two departments that might have conflicting views. This unification of capabilities and quality of cooperation leads to a better market performance.

Managerial Recommendations

Homburg and Jensen (2007) managerial recommendations were that identical sales and marketing worlds are not recommended because different perspectives are beneficial for the market performance of the organization. However, for Mexican companies where the employees are looking for clear managerial hierarchical structure is recommended that sales and marketing share and work with the same marketing perspective to shift the company to the same market orientation. This objective will be more likely if the marketing department leads the orientation shifting in the organization. More specifically, marketing should influence sales especially in market knowledge and interpersonal skills. These two variables will affect in a positive way the quality of the collaboration and as a result the market performance of the organization.

Limitations and Future Research

This empirical test of Homburg and Jensen's (2007) Sales-Marketing Thought Worlds in Mexican companies is a first step to understand the marketing practices in developing countries. Future research should address some of its limitations. First, the unit of analysis was one person per organization. Perhaps the differences between thought worlds would be less homogeneous if the sample used dyads (an employee in sales and an employee of marketing) of participants. Second, due to the decision of sampling MBA students, the average number of years working in the area was relatively low. Future research should focus on sampling more senior members of organization. Third, this study uncovered the importance of marketing's influence in sales. It would be worthwhile to explore how this influence is seen across departments. Finally, a cross-cultural study that includes companies headquartered in countries that exhibit different levels of marketing development and cultural orientations would allow to determine the drivers of the results of this study.

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Western Style Sex-Appeal Advertising in China: An Exploratory Study

Working Student Paper

Mengjiao “Allie” Shi

Student

Jeffrey Steven Podoshen

Assistant Professor

Department of Business, Organizations and Society
Franklin and Marshall College
PO Box 3003
Lancaster, PA 17604-3003
USA
jpodoshe@fandm.edu

Abstract

As China’s prominence in the global economy continues to rise, its market has become increasingly diverse with goods from all over the world. Domestic, as well as foreign companies are implementing various marketing and advertising strategies to gain market share in this fast growing market. Many firms are now utilizing western-style sex appeal in advertisements to attract Chinese consumers. Using a series of Likert scales to analyze Chinese consumer preferences towards specific sex-appeal oriented ads (N=383), significant differences in attitudes were found in terms of gender, age and geographic location (Shanghai vs. Xi’an). Our findings show that young Chinese males in Shanghai have the most favorable attitudes towards sex appeal advertisements compared to other groups we studied

Keywords: sex appeal advertising, Chinese consumer preferences, Chinese culture, localization, globalization, advertising strategy, FDI, gender difference, modernization theory, Chinese consumer behavior

Introduction

Advertising usually refers to the paid placement of persuasive messages to inform a target market segment about a product or service. The intention behind advertising, therefore, is to influence the target audience to purchase the good. Since Levitt (1983) called for global marketing strategies, the world economy has become more even more intertwined (Nan and Russell, 2004). Advertising, as a crucial part of the international marketing strategy, has been growing and trying to adapt to different cultural, social, and political systems of each country in an attempt to profit, especially in the lucrative emerging market of China. The beginning use of sex appeal advertising by foreign, as well as local companies has become more common in these emerging markets. Sex appeal advertising often consists of elements such as symbolism, graphics, and suggestive language that is related to sex (Cui and Yang, 2009). Since sexually explicit advertisements were once prohibited in most Asian emerging markets such as China, the examination of consumer attitudes towards these ads are especially important to examine. The findings from

consumers' responses to sex appeal ads contain key information for firms that may run the risk of alienating their future consumers.

With its steadily increasing GDP, China is quickly becoming the new industrial center of the world and is currently undergoing changes throughout its social and cultural structures. Nowadays, Chinese consumers have more disposable income and are more quickly adopting westernized ideas. This cultural study focuses on examining Chinese consumers' attitudes towards sex appeal advertising. We first examine the use of sex based ads in the United States and then examine, through a field study, how different Chinese consumer subgroups compare with one another to indicate which subset is the most/least receptive to sex appeal advertisements in China, with the emphasis on findings in regards to age, gender and city (Shanghai and Xi'an). Implications and limitations are discussed.

Literature Review

Sex Appeal Advertisements in the U.S.

Since cultural and social structures have always been regarded as crucial factors in determining consumer behaviors in different countries (Hsieh *et al.*, 2004), it is of great necessity to discuss the findings from the studies of American consumers' attitudes toward sex appeal advertising before analyzing those of Chinese.

While Bello *et al.* (1983) stated that sex appeal is based on the appearance of nudity and the use of sexual attractiveness or suggestiveness; in the advertising field, sex appeal is used as sexual-related persuasive messages to draw consumers' attention to particular brands. Since the mid-to-late 1960s, sex appeal advertising has been extensively implemented in Western countries such as the U.S. and is seen as a short-cut to break through the media clutter (LaTour and Henthorne, 1994). Some believe that sex appeal ads not only attract consumers' attention but also retain the attention for longer periods of time compared to a non-sexual-related advertisement (Baker, 1961). Moreover, sex appeal advertisements can evoke people's emotional responses, such as excitement or envy, which can create a stronger and more favorable performance response that compels the individual to purchase the advertised good (Taflinger, 1996).

On the other hand, through the cultural viewpoint, western countries, such as the U.S., have individualistic cultures rather than the collectivism of eastern countries, such as China (Hofstede and Bond, 1998; Triandis, 1990). In an individualistic society, the ties between individuals are loose, while in a collectivistic society, people are integrated into strong cohesive groups which last through people's lifetime (Hofstede, 1994). Moreover, consumers in an individualistic society favor stimulation more than consumers in a collective society (Liu *et al.*, 2009). Sex appeal advertisements generally produce more stimulation than ads without such appeal; therefore, individualistic consumers may respond more favorably to these sexual-related ads than collectivistic consumers (Liu *et al.*, 2009). This theory suggests that U.S. consumers may have more favorable attitudes towards sex appeal ads than Chinese consumers.

For some, sex appeal advertisements have long been thought to be the best advertising strategy in today's saturated media environment. However, using sex appeal can be a gamble. Sex appeal advertisements are eye-catching but

they can easily distract viewers from the main messages and thus reduce consumers' comprehension towards the products or brands (Severn *et al.*, 1990). Through testing communication effectiveness on consumers' motivation, opportunity, and ability to process brand information from an ad, MacInnis *et al.* (1991) found that sex appeal advertisements may not necessarily produce positive attitudes towards the advertised brands.

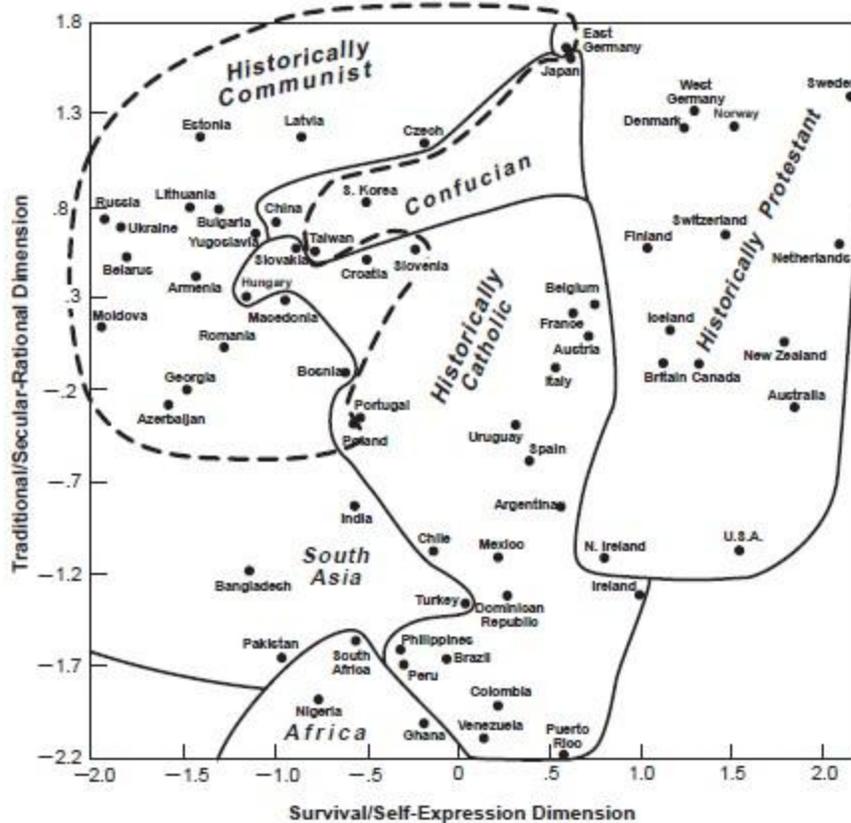
There are more complications associated with sex appeal advertisements. For example, gender differences have significant influence on how each gender views the ads. Much of the extant literature has suggested that men and women possess distinctive perceptions of what is "sexy." The use of female nudity in an ad may appeal to male viewers but may also offend the female audience (Taflinger, 1996). Moreover, not every product is suitable in the "sex-sells" category. If sex appeal does not connect to the product, the inappropriate relationship may create passive attitudes towards the brand (Richmond and Hartman, 1982).

Marney (1994) used empirical data to suggest that sex appeal in ads can backfire – two-thirds of people aged 55 and older found sex appeal advertisements can be offensive and almost the same amount of people between ages 35 to 54 felt the same. For young adults (age 18-34), 56% of women and 39% of men found sexual explicit ads to be offensive. Additionally, the study indicated that only 23% of adults were affirmative that sex appeal ads generated a positive effect through the buying process. Furthermore, U.S. females are less likely than males to accept sex appeal ads (Marney, 1994). Liu *et al.* (2009) also proposed that U.S. consumers held significantly different attitudes towards sex appeal ads under the circumstance that "the degree of sex appeal affects U.S. consumers' responses to sex appeal ads." This resistance to sex appeal advertisements may be due to the enduring traditional values that Americans have according to Inglehart and Baker (2000).

Inglehart and Baker (2000) predict that economic development is associated with major changes in prevailing values and beliefs as part of their modernization theory. However, the theory does not necessarily imply cultural convergence – persistence of traditional values may be present in economically powerful and developed economies. In the chart that Inglehart and Baker (2000) developed to measure cultural distance, there are two dimensions: Traditional/Secular-Rational dimension and Survival/Self-Expression dimension. (Figure I)

Figure I (Adopted from Inglehart and Baker, 2001)

THE PERSISTENCE OF TRADITIONAL VALUES



In a traditional society, people place a strong emphasis on religion and emphasis on traditional family values; they reject divorce, abortion, etc. whereas in a secular-rational society, people generally have the opposite preferences on all of these topics (Inglehart and Baker, 2000). The survival/self-expression dimension reflects another cultural range in which in a survival society, people give priority to economic and physical security over self-expression and quality of life whereas the self-expression oriented society does not (Inglehart and Baker, 2000). Specifically, the value systems of richer countries place most of them on the upper-right corner of the chart (self-expression and secular-traditional dimensions). However, Ireland, North Ireland, and U.S.A. are three outliers in that they fall in the traditional dimension (Inglehart and Baker, 2000). Thus, the majority of cultural values in the U.S. are held more conservatively and religiously. Therefore, the objections, that some have, to sex appeal advertisements in the U.S. are not very surprising.

Sex Appeal Advertisement in China

As more foreign firms start their business in China in an attempt to influence and persuade local consumers to spend, advertising has been used as a major tool to achieve that goal. Sex appeal advertising campaigns have been successful in most western countries, yet little is known about Chinese consumers' reactions to them. Kanso and Nelson (2007) explained that although international companies were aware of different cultural, social, and political

structures in each country, they were seeking methods to reach international consumers with minimum levels of localization or adaptation. Thus, sex appeal advertising was often used by foreign companies in their international branding campaigns regardless of what they knew about the market (Kanso and Nelson, 2007). However, the risks associated with a sex appeal advertising strategy, especially in emerging markets, remain unclear. For example, do sex appeal advertisements work in Chinese culture? Does openness of a city or region in China affect consumers' preference towards sex appeal advertisements? It is critical to examine emerging market consumers' responses to sex appeal advertising in specific contexts.

Unlike the U.S., sex appeal advertising has only been appearing in China since Xiaoping Deng approved the *Open Door Policy* to the world in 1978 (BBC 1978). Over the past three decades of economic reform and open door environment, Chinese people are becoming more open to sex and "the sex scholar believes the Chinese are getting closer to an open and transparent attitude toward sex (Guo, 2007)." This attitude is mainly driven by the increasing exposure to sex-related messages from western countries as well as the same kind of messages that are frequently adopted by the local media.

From Liu's study in 2005, two commonly used sex appeal advertising strategies in China are partial nudity and sexual suggestiveness. The later strategy is often achieved by "playing" with the Chinese language to imply a sexual-related message. For example, McDonald's ad for a Quarter Pounder in China featured a close-up of a woman's lips and text that stated, "Flirt with your senses; feel more beef taste" (**Appendix I**) where beef in Chinese has "the connotations of manliness, strength, and skill (Fairclough and Adamy, 2006)". Since McDonald's target customers in China are "young, modern, and bilingual (Fairclough and Adamy, 2006)," the company's sex appeal advertising strategy looks promising. Nonetheless, it is uncertain to what extent sex appeal advertisements will appear to Chinese consumers. A recent incident happened online where Chinese computer game advertisements offended game players due to their over-exposed partial nudity (*News 88*, 2009). Many Chinese even began to connect sex appeal advertisements to low-quality products since they believed that the company was forced to use sex to attract attention where the product did not have anything to really offer consumers. On the other hand, older generations of Chinese seem to have a lower tolerance towards sex appeal advertisements compared to younger generations owing to their shorter period of time being exposed to the sex-related messages (Cui and Yang, 2009).

Although more companies are beginning to implement sex appeal advertisements in China, there have only been few empirical studies examining their effect. By discussing the effects of sex appeal in the Chinese market, Cui and Yang (2009) concluded that Chinese respond less favorably to sex appeal in regards to the advertisement, brand, and buying intention. Moreover, they found that Chinese prefer advertisements featuring Chinese models to those using Caucasian models regardless of the extent of sex appeal. Liu *et al.* (2009) compared consumer responses to sex appeal advertisements in the U.S., Australia, and China. Liu *et al.* (2009) found that despite consumers' different attitudes in all three countries, their buying intentions towards the sex-advertised brand were not overly different. In addition, the paper suggested that Chinese consumers hold favorable attitudes towards sex appeal ads and proposed that Chinese youth is becoming more "pro-western" (Liu *et al.*, 2009). Thus far the literature has not examined how attitudes of Chinese consumers living in different geographic locations differ in relation to sex appeal ads.

Hypotheses

“Sex” has been a taboo word in China for a long period of time, however, it appears that as more sexually explicit advertisements begin to appear, Chinese begin getting closer to a more open attitude towards sex. Sex appeal advertisements, therefore, seem to work (on the surface) in today’s Chinese market; however, critics still question the effectiveness of sex appeal advertising strategy that is used by many international corporations in China, since Beetles and Harris (2005) has suggested that people are more responsive to messages that reflect their cultural and social beliefs. Thus, this paper focuses on examining Chinese consumers’ responses to sex appeal advertisements (N=383) with specific emphasis in regards to gender, age, openness, and education.

First, given the younger generation being brought up in a heavily western-influenced society, we expect that the younger generation has a more favorable attitude towards sex appeal advertisements than the older generation does. Thus, we propose:

H1: Younger Chinese consumers will have more favorable attitudes towards sex appeal advertising compared to older Chinese consumers.

Openness is often regarded as an important indicator to consumers’ preferences. While it is hard to define openness, we will use the FDI (Foreign-Direct Investment) Index to measure openness. FDI has contributed significantly to Chinese economic development and the per capita income growth in the most heavily invested regions of China has grown considerably higher than the other regions (Graham and Wada, 2001). Shanghai is a coastal city and an FDI-intensive area of China, while Xi’an, located in the middle of China, does not have as many foreign investors or companies as Shanghai does (Graham and Wada, 2001). As a result, people in Xi’an are expected to hold more traditional values and score less favorable towards sex appeal advertisements than people in Shanghai.

H2: Chinese consumers’ responses to sex appeal advertisements are related to the degree of FDI in a particular city. Residents of Xi’an will respond less favorably to sex appeal ads than residents of Shanghai.

Many studies have also shown that females do not accept sex appeal ads as easily as males do and they are more offended by sexually explicit ads (Marney, 1994). The same situation is expected to happen in China. Hence,

H3: Female Chinese consumers respond less favorably compared to male Chinese consumers in regards to advertisements that utilize sex appeal.

Methodology

We conducted a survey in China (Xi’an and Shanghai) utilizing three actual print advertisements and compared Chinese consumers’ responses to each advertisement. (Please see the survey in **Appendix II**) All of the three sexual related advertisements used different derivations of sex but all were considered to be risqué in traditional Chinese cultural terms.

As Liu *et al.* (2009) suggested that U.S. consumers have significantly different attitudes towards sexually explicit advertisements according to the degree of sex appeal in the ads; the three ads in the survey contained different levels

of sex appeal. The first advertisement in the survey was designed to compare Chinese attitudes with those of Americans. This advertisement was originally on the billboard of Times Square in New York and it advertised a bidet-toilet seat that used warm water and air (*MediaBuyerPlanner*, 2007). The ad featured a set of human naked bottoms with smiley faces imprinted on them. The church nearby opposed the ad and sued the company for such a sensational visual in public (Balendu, 2007). The ad was later translated and ran in Chinese cities.

We then chose another foreign advertisement that used a male model. It was an ad for a clothes softener in which a male is showing his naked backside while having “a pair of blue jeans” painted on him. In this sex appeal ad that appealed to many Americans, we were not only looking to qualify Chinese consumers’ attitudes towards the sexual related ad, but also to examine gender differences in response towards the male modeled ads.

As a comparison with the second ad, the third ad was chosen from a Chinese company that advertised for cell phones. The ad showed an attractive female model kneeling on a golf course while wearing a tank top and sexy lingerie, and displaying a sign saying “My cell phone knows today is suitable for golf.” We attempted to examine Chinese consumers’ responses to local sex appeal advertisements as well as to see whether female Chinese were more offended viewing sex appeal advertisements than male Chinese were.

Between May and August of 2009, we surveyed 383 Chinese consumers in Shanghai and Xi’an, from a wide range of ages in an attempt to capture more general responses. Specifically, the sample was comprised of 174 females and 209 males. 144 people were from age 18 to 25, 132 between 26 and 35, 64 between 36 and 45, 32 between 46 and 55, 11 of age 56 and above. The survey was originally written and conducted entirely in Chinese.

Results

Descriptive Statistics

Descriptive statistics were utilized to illustrate Chinese consumers’ general attitudes towards sex appeal advertising in China. Our results are found in Table 1.

Table 1		General Questions	
<i>Questions</i>	<i>Means for All Respondents</i>	<i>Scale</i>	<i>Percentage</i>
“There have been an increasing number of sex appeal advertisements in this city.”	3.63	Strongly Agree	11.2%
		Agree	52.7%
		Neither Agree Nor Disagree	25.1%
		Disagree	9.4%
		Strongly Disagree	1.6%
“The sex appeal advertisements draw my attention.”	3.43	Strongly Agree	7.6%
		Agree	44.4%
		Neither Agree Nor Disagree	33.9%

“Generally, the sex appeal advertisements offend me and make me NOT favor of the product.”	2.89	Disagree	11.5%
		Strongly Disagree	2.6%
		Strongly Agree	6.3%
		Agree	15.4%
		Neither Agree Nor Disagree	43.3%
		Disagree	30.8%
		Strongly Disagree	4.2%

As can be seen, most in China are aware of the increasing presence of these ads, moreover, they generally do not consider sex appeal advertisements as offensive or consider the advertised products less desirable. This finding contradicts many people’s perceptions that Chinese consumers are too traditional to accept sex explicit ads.

Next, respondents were asked to evaluate their opinions towards the first advertisement (the one with naked backsides used in Times Square). According to Table 2, surveyed Chinese consumers were less positive about the ad in terms of comfort.

Table 2		Advertisement 1	
Questions	Means for All Respondents	Scale	Percentage
“This ad makes me very uncomfortable.”	3.31	Strongly Agree (5)	10.7%
		Agree (4)	35.0%
		Neither Agree Nor Disagree (3)	31.3%
		Disagree (2)	20.1%
		Strongly Disagree (1)	2.9%
“This ad makes me NOT want to buy the toilet which it advertises.”	3.16	Strongly Agree	9.1%
		Agree	30.3%
		Neither Agree Nor Disagree	31.3%
		Disagree	26.6%
		Strongly Disagree	2.9%
“I believe this ad will appeal to many consumers in my city.”	2.98	Strongly Agree	4.7%
		Agree	29.5%
		Neither Agree Nor Disagree	27.9%
		Disagree	35%
		Strongly Disagree	2.9%

The results from the second advertisement were rather interesting as compared to the first one. Very differently, participants scored much more favorably to this ad than Advertisement 1. Additionally, they believed that this ad would appeal to a wide range of consumers. (Table 3)

Table 3		Advertisement 2	
Questions	Means for All Respondents	Scale	Percentage
“This ad makes me very uncomfortable.”	2.82	Strongly Agree	5.5%
		Agree	18.3%
		Neither Agree Nor Disagree	35.8%
		Disagree	33.9%
		Strongly Disagree	6.5%
“This ad makes me NOT want to buy the toilet which it advertises.”	2.77	Strongly Agree	5.0%
		Agree	18.8%
		Neither Agree Nor Disagree	31.3%
		Disagree	37.6%
		Strongly Disagree	7.3%
“I believe this ad will appeal to many consumers in my city.”	3.26	Strongly Agree	7.8%
		Agree	41.3%
		Neither Agree Nor Disagree	23.8%
		Disagree	23.5%
		Strongly Disagree	3.7%

The third advertisement yielded mixed responses from Chinese consumers. While a majority of participants found this ad to be unacceptable and unattractive, they also thought that other consumers would like this advertisement. (Table 4) We believe that this effect is there because the ad uses a female model.

Table 4		Advertisement 3	
Questions	Means for All Respondents	Scale	Percentage
“This ad makes me very uncomfortable.”	3.27	Strongly Agree	9.4%
		Agree	34.5%
		Neither Agree Nor Disagree	31.6%
		Disagree	22.7%
		Strongly Disagree	1.8%
“This ad makes me NOT want to buy the toilet which it advertises.”	3.23	Strongly Agree	7.8%
		Agree	34.2%

“I believe this ad will appeal to many consumers in my city.”	3.05	Neither Agree Nor Disagree	33.2%
		Disagree	22.5%
		Strongly Disagree	2.3%
		Strongly Agree	3.9%
		Agree	33.9%
		Neither Agree Nor Disagree	29.8%
		Disagree	28.2%
		Strongly Disagree	4.2

Finally, the last questions asked participants whether they thought their cities needed to regulate sex appeal advertisements. In Table 5, we could observe that most Chinese respondents believed that sex appeal advertisements are a symbol of modernization; but they more strongly agreed that their cities needed to regulate sex appeal advertisements. The contradictory answers for the two questions might hint that Chinese have mixed feelings towards the sex appeal advertisements. On one hand, they believe that these ads denote Chinese modernization; on the other hand, they do not want to be a fully “westernized” country – respondents possibly expressed a “cultural resistance” as explained by Inglehart and Baker (2000).

Table 5		Regulations	
Questions	Means for All Respondents	Scale	Percentage
“Generally, I believe that the increasing number of sex appeal advertisements is the symbol of modernization in my city.”	3.16	Strongly Agree	8.6%
		Agree	38.6%
		Neither Agree Nor Disagree	17.8%
		Disagree	29.8%
		Strongly Disagree	5.2%
“I believe my city needs strong regulations on the sex appeal advertisements.”	3.66	Strongly Agree	12.8%
		Agree	54.0%
		Neither Agree Nor Disagree	21.7%
		Disagree	8.9%
		Strongly Disagree	2.6%

Comparatives and ANOVA

Statistical analyses were run according to the independent variables in Table 6 and dependent variables in Table 7. In all of the analyses, independent variables were used to test differences among groups based on dependent variables. We used an alpha-level of .05.

Table 6	Independent (Control) Variables
	Age
	City
	Gender
	Educational Level

Table 7	Dependent Variables
	Knowledge of increasing use of sex appeal in advertisements
	Overall attention to sex appeal advertisements
	Overall offensiveness to sex appeal advertisements and resulted buying intention
	Offensiveness to a specific sex appeal advertisement (3 samples)
	Buying intention to a specific sex appeal advertised product (3 samples)
	Belief the effectiveness of a specific sex appeal advertisement to other consumers (3 samples)
	Overall belief the increasing sex appeal advertisements are symbols of modernization
	Overall belief the need of regulations on sex appeal advertisements

H1: Younger Chinese consumers will have more favorable attitudes towards sex appeal advertising compared to older Chinese consumers.

Utilizing ANOVA and Tukey tests we did find significant differences between age groups in relation to 9 of the 14 variables at an alpha level of .05. We ran multiple comparisons to see which groups differed specifically and our results yielded that generally speaking, those between the ages of 18-25 and 26-35 had a more favorable outlook to sex appeal advertisements.

In regards to offensiveness of sex appeal advertisements, the age group of 18-25 showed a significant difference from age group of 46 to 55 with a mean difference of 0.507. While we could not determine whether all respondents from age 46-55 found sex appeal advertisements offensive (95% confidence interval for 46-55 is from 2.86 to 3.64), it was still supported that age group of 18-25 did not find this type of ad, offensive nor did it affect their buying intention of the advertised products.

H2: Chinese consumers' responses to sex appeal advertisements are related to the degree of FDI in a particular city. Residents of Xi'an will respond less favorably to sex appeal ads than residents of Shanghai.

In Inglehart and Baker's (2000) modernization theory, cultural convergence is expected in the process of economic growth. As explained in the hypothesis section, we used the degree of FDI to determine the openness of a city and ran ANOVA as well as Tukey tests to determine whether significant differences exist. Shanghai has a higher FDI and a faster economic growth while Xi'an has a lower FDI and economic growth.

We found significant differences between attitudes in 6 of the 14 variables at an alpha level of .05. Residents of Xi'an were especially less favorable towards the ad that featured the kneeling female. Shanghai residents reported that sex appeal advertisements were better at grabbing attention. This finding may indicate that Shanghainese pay more attention to sex appeal advertisements. Moreover, when comparing the means for all of the first three questions ("increase," "attention," and "offend"), we observed that Shanghai participants not only notice that there are more increasing sex appeal advertisements than Xi'an participants, they also pay more attention and found the ads more favorable. Moreover, people from Xi'an believed more that regulations on sex appeal advertisements were needed than people from Shanghai. This may suggest that people from a less open city do not accept sex appeal advertisements as people from a more open one.

Although Shanghainese seem to have more open minds than these of Xi'an, both groups showed no significant differences on questions on first advertisement – they all thought the ad made them uncomfortable and made them not want to purchase the product.

H3: Female Chinese consumers respond less favorably compared to male Chinese consumers in regards to advertisements that utilize sex appeal.

We found significant differences in terms of gender across all but three of the variables. Women paid less attention to the sex appeal advertisements and were much more offended by them. Among the three advertisements, the female group only showed a mixed to positive attitude to the second ad where a male model was used; however, men still had definite positive responses to the ad and thus, we are led to believe that female groups have less tolerance for the sex appeal advertisements.

It is worth noticing that on the last ad a female model was used in a seductive way to advertise cell phones. Females had strong opposite attitudes from those of males in which they felt that the ad made them uncomfortable and they indicated they did not want to purchase the advertised product. On the contrary, males had mixed to positive attitudes on this advertisement. This finding may suggest that while females generally do not prefer sex appeal advertisements, the ads that portray females as sex symbols will offend them more and greatly reduce their buying intention towards the advertised products. Finally, female participants normally did not agree that the appearance of sex appeal advertisements is the symbol of modernization and they strongly proposed for regulations on these ads.

Discussion

Through analyzing the data, we have found significant differences in attitudes towards sex appeal advertising among Chinese consumers in regards to age, city, and gender. This finding supports Khanna *et al.* (2005)'s argument that foreign companies have to take local cultures into consideration when marketing in an international environment.

Broadly speaking, Chinese consumers paid attention to sex appeal advertisements and did not find them offensive, which may suggest that this advertising strategy works in China. Certain Chinese consumers did find the ad where females were used as the sex symbol offensive (third ad on the survey) and did not want to purchase the advertised product. Thus, although many firms believe sex appeal advertisements that portray females as sex symbols can

attract consumers and increase their buying intentions, it is worth questioning the effectiveness of these ads especially in China. Additionally, Chinese consumers seem to believe that sex appeal advertisements are symbols of modernization while also proposing that the government should regulate them. Many people expressed the idea that they thought sex appeal advertisements “polluted” the market and harmed minors. This may reflect that Chinese consumers do not necessarily consider modernization a good thing for the whole society.

Our analysis suggests that Chinese young adults pay more attention to sex appeal advertisements and are more attracted to them than Chinese elders. While this result confirms Beech’s report (2005) in which he found that Chinese young people are becoming more and more open to sex and sex-related messages, we should note our data suggests that young Chinese still react negatively towards some types of sex appeal advertisements. Thus, the idea that “Chinese youth seem to have unconditional acceptance of Western culture including sex liberation (China Daily, 2005)” is questionable. We propose that when foreign, as well as local, companies want to utilize sex appeal in advertisements, much caution is advised even if their target market is younger generations of Chinese.

As openness is often regarded as an important indicator to consumer preferences, we explored whether openness of a particular city has an effect on people’s opinions towards sex appeal advertisements. Shanghai, being one of the three special administrative regions in China, constantly has a high level of FDI. However, since we have found a number of significant differences between the two cities, it challenges the idea that sex explicit ads have the same appeal to all cities in China. When firms want to use this sex appeal strategy, local culture and social beliefs must be taken into serious consideration.

Lastly, we have found significant differences between genders in regards to most of the survey questions. This result challenges Liu *et al.*’s finding that gender was not a significant factor in responses to sex appeal advertisements (2009). However, our data did support Liu *et al.*’s conclusion that more significant differences exist between genders when the sample was exposed to an ad featuring a female model. Our finding also reinforced Taflinger’s (1996) theory that the use of female nudity in ads may appeal to male audiences but also may offend females. Generally speaking, female respondents often had less favorable attitudes than males towards all sex appeal advertisements. This may well suggest that a sex-oriented ad that appeals to one gender may be offensive to another gender (Reichert *et al.*, 2001). While the company using a female model in a sex appeal advertisement can attract attention from a male audience, it may offend female viewers at the same time. More interestingly, our data suggested that both genders responded favorably to the sex appeal ad featuring a male model. Thus, it may suggest that if a firm wants to use sex appeal advertisements in China, an ad which features male models may be more appealing to general public. Additionally, extra caution must also be paid to the gender of the firm’s target market when deciding which kinds of ads are more appropriate.

In conclusion, a foreign firm must adapt to local culture and social structures when marketing in an emerging market, especially in China. Understanding consumers in different cultures is often the most difficult task during the marketing process; however, this is especially crucial for international marketers who not only need to appreciate the

local culture, but must also know how to react upon it. Through our study, significantly different attitudes were found in regards to age, gender, and city in China. Therefore, a firm must carefully examine their target markets before utilizing sex appeal advertisements. While Chinese consumers generally did not show negative attitudes towards sex appeal advertisements, it requires a great deal of caution to design the right ads that appeal to them. In conclusion, our study looks to offer some findings that may help international as well as local marketers to develop a better advertising strategy.

Research Limitations/Implications

Firstly, the sample size only contains 383 data points and thus makes it difficult to generalize. Secondly, the sample has a significant amount of young adults (18-25), who may be more favorable of sex appeal advertising than older generations in China. The sample also is skewed towards younger Chinese and it is believed younger generations of Chinese are more accepting of sex appeal advertisements than older generations (Duan, 2003). Lastly, previous studies have suggested that attitudes towards sex related advertisements are tightly connected to individual personalities (Hatfield and Rapson, 1993). Thus, a further study to examine what kind of personalities would affect the attitudes towards sex appeal advertisements in China is encouraged.

Appendix I

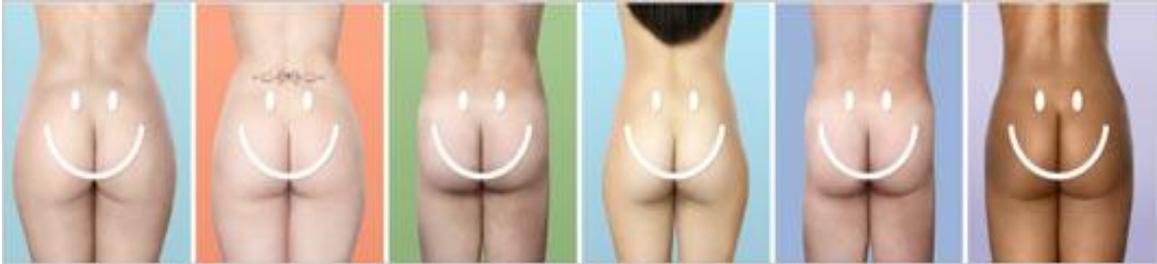


Appendix II:

Survey: Date:

Please notice that you are invited to participant in this study solely for academic and research purposes. Your participation to fill out this survey is anonymous and voluntary. You can stop at any moment you would like.

1. Age Group (Please check the one that applies to you): [18 – 25]; [26 – 35]; [36 – 45]; [46 – 55]; [56 and above]
2. Gender (Please check the one that applies to you): [Female]; [Male]
3. How long have you lived in Xi'an/Shanghai? [0 – 2 years]; [2 years and above]
4. For each of the statements below, please indicate the extent of your agreement or disagreement by placing a tick in the appropriate column:

Questions:	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
5. There have been an increasing number of sex appeal advertisements in this city.					
6. The sex appeal advertisements draw my attention.					
7. Generally, the sex appeal advertisements offend me and make me not favor the product.					
8. Please take a look at this advertisement for a toilet:					
					
Questions:	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
8A: This ad makes me very uncomfortable:					
8B: This ad makes me NOT want to buy the toilet which it advertises:					
8C: I believe this ad will appeal to many consumers in my city:					

8D: Please use several words to describe what your feelings towards this ad and brand:

9. Please talk a look at this advertisement for a clothes softener:



Questions:	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
9A: This ad makes me very uncomfortable:					
9B: This ad makes me NOT want to buy this clothes softener which it advertises:					
9C: I believe this ad will appeal to many consumers in my city.					

9D: Please use several words to describe what your feelings towards this ad and brand:

10. Please talk a look at this advertisement for a mobile phone:



Questions:	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
10A: This ad makes me very uncomfortable:					
10B: This ad makes me NOT want to buy the mobile phone which it advertises:					
10C: I believe this ad will appeal to many consumers in my city:					
10D: Please use several words to describe what your feelings towards this ad and brand:					
11. Generally, I believe that the increasing number of sex appeal advertisements is the symbol of modernization in my city.					
12. I believe my city needs strong regulations on the sex appeal advertisements.					
13. Please comment on your attitudes toward the Chinese advertising market:					

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Predicting Herding Behavior Using Hofstede's Cultural Dimensions

Student Paper

Mindy L. Sykes

UNF Alumn

Oliver Schnusenber

Associate Professor of Finance

The University of North Florida

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Abstract

As the study of behavioral finance progresses and globalization becomes a way of life, the importance of the study of culture on the psychology of financial markets becomes increasingly pertinent. Using survey results for 309 students from five universities in the US and in Germany, this study develops a herding behavior construct and existing cultural dimension constructs for individualism/collectivism, power distance, and uncertainty avoidance and confirms that culture affects the degree to which individuals are inclined to herd. Results indicate that cultural dimensions play a role in determining the extent to which people engage in herding behavior, particularly in Germany. A better understanding of behavioral implications within financial markets may decrease composition uncertainty and its negative affects by creating increased awareness of herd behavior within markets. Enhanced awareness may contribute to customized solutions within each country.

Introduction

In 1912, the book *Psychology of the Stock Market* (Selden) took a departure from fundamental finance theory and articulated the idea that, in addition to traditional forces, human psychology was influential in affecting the price of stocks. Since then psychology has had an increasingly important role to play in explaining how and why inefficiencies occur within operating markets. As financial market integration continues around the world, a cultural perspective in financial research will make increasingly important contributions to a more thorough and global understanding of the psychology behind financial markets, their inefficiencies, and ways in which those inefficiencies may be moderated.

Tett (2010), in regard to the Greek debt crisis, talked about the “emotional market hypothesis.” In his article, the author discusses a conference of the world’s leading economists centered on the future of economics. Among the predominant conclusions of the conference was that economists and market traders alike need to devote far more time to human psychology, rather than raw economic numbers alone. Tett’s analysis further illustrates the growing importance of understanding what drives individuals’ behavior in financial markets.

Tett's argument is further extended specifically to herd behavior by Browning (2010), who discusses the extremely high correlations between the S&P 500 and its component stocks in June and July of 2010. The author mentions that the correlations reached .83 in early July, which represents the highest level since the 1987 crash. Earlier in the year, when stocks were doing relatively well, the correlation was only 0.50. This data reflects the fact that individuals' herd behavior tends to increase during more volatile market periods.

Both Tett's and Browning's articles illustrate the importance of not only further investigating psychological aspects of market behavior, but also of understanding the underlying conditions that cause individuals to herd more or less during more volatile market periods. The present study is an attempt to relate cultural dimensions in the U.S. and Germany and herd behavior.

Herd behavior is a well-researched departure from fundamental finance theory. Herd behavior is a psychological phenomenon that influences the way that individuals behave and the financial decisions they make. Herd behavior is said to have evolved over time as the ability to act as a unit and respond collectively to information gave us an evolutionary advantage (Shiller 1995). Studies have shown us, however, that interaction between financial markets and herd behavior can increase stock-price volatility and asset mis-valuation, decrease market stability and efficiency, and contribute to bubbles and crashes (West 1988, Lux 1995, Avery 1998, Eguiluz 2000, Cipriani 2008). Eguiluz (2000) shows that herding helps to explain the observed fat-tail distribution in returns of financial-price data. Avery (1998) documents that herd behavior can be particularly destructive in financial markets when individuals believe that others have information they really do not possess. Cipriani (2005, 2008) was able to measure herd behavior and its affects in two different scenarios. His research proved that flexible-price models were able to reduce the negative influence that herd behavior had on the market. His findings led him to urge others to more fully explore the reasoning behind and possible remedial measures for herd behavior. Since the recent financial crisis, market volatility has increased dramatically, further increasing the need for a better understanding of the conditions under which individuals collectively buy and sell financial assets.

The purpose of this paper is to test how herd behavior may vary across cultures by testing Hofstede's (2001) dimensions of individualism, power-distance, and uncertainty avoidance and how they affect an individual's likelihood to participate in intentional herd behavior. Intentional herd behavior occurs when individuals base their decisions on and therefore mimic the observed actions/information of others. This differs from spurious herding in which individuals make similar decisions because of similar private information. (Bikhchandani, 2001) For this research, intentional herding will be defined as occurring when an individual bases his or her decision on the observed information of another both in disregard to or in the absence of private information. This last specification is particularly important when the act of acquiring personal information is costly or time intensive (Bikhchandani 1998). The majority of research on herd behavior is based strictly on financial data, which cannot infer the motives behind decision-making. Data for this research paper will be collected through a survey that is designed to capture the likelihood that individuals will follow the actions of others, thereby excluding spurious herding from the data set. The findings of this research will serve to better inform the financial community as to the ways in which these dimensions affect herd behavior and the different ways in which they may manifest themselves in financial markets across cultures. A better understanding of the driving forces behind herd behavior will lead to more effective ways of managing potential consequences in the marketplace.

The remainder of this paper is organized as follows. The following section presents the literature review, followed by a section presenting the hypotheses. The fourth and fifth sections present the research method and results, respectively, while the last section concludes.

Literature Review

Herd Behavior

In order to fully understand how cultural dimensions cause herding behavior to occur, we must first understand the underlying reasons that cause individuals to engage in herding behavior. In a broader context, the reasons for herd behavior relate to concerns for reputation, compensation structures, and observational information gathering. These three streams of literature are discussed next.

Concern for reputation is one explanation of herd behavior. In 1990, Sharfstein found that managers would, at times, make decisions contrary to personal information. They would instead base their decisions on the behavior of other managers. Sharfstein attributed this behavior to a rational concern for reputation. He also proposed that, as more importance is placed on creativity and individuality, the incentive for mimicking the behaviors of others would decline. Sharfstein's (1990) findings are further substantiated by Trueman (1994), who finds that financial analysts tend to release forecasts that are similar to previously released forecasts as opposed to being reflective of personal information. He proposes that this is because the perceived ability of an analyst is often measured according to their forecast's similarity to those of other analysts. This idea of perceived ability also ties into later research on compensation based herding, which is discussed next.

Compensation structures are another explanation of herd behavior. In 1990, Sharfstein noted that wages based on relative as opposed to absolute talent contribute to herd behavior. When compensation is based on personal performance as compared to the performance of others, mimicking those others becomes a financially sound and reasonable choice (Roll 1992, Brennan 1993). Admati and Pfleiderer (1997) find that this sort of benchmark compensation scheme lends financial markets to sub-optimal risk sharing.

In contrast to concern for reputation and compensation structure, observational information gathering is the more multi-faceted and well researched of the three explanations. Individuals may choose to gather information through observation for various reasons. In 1991, Patel notes that there exists a natural tendency to free ride on the information of others. Four years later, Shiller (1995) notes that people are more likely to herd on decisions that are more complex and are therefore less certain. He concurs with the free ride theory and concludes that people are more likely to participate in herd behavior when they are limited by time or natural ability.

Banerjee (1992) further explains that herd behavior can be rational, particularly when we are under the impression that the information of others may be better than our own. He also proposes that rewards for originality would help to curb herd behavior. This paper led to much research in the vein of observational learning and information cascades. An informational cascade occurs when enough individuals have acted in one way that successive decision-makers feel that the previous actions carry more weight than their own personal information. Because of this they (and continuing successors) are apt to choose as their predecessors have. During an experiment conducted by Asch (1952), the majority of test subjects concurred with the group in the face of overwhelming consensus instead of relying on what their senses were telling them was the correct answer. When enough people have chosen differently than private information would imply, an individual becomes less certain about their own information. Bikhchandani (1998) adds that information cascades are more influential when they pertain to discrete choices. This idea is researched further in a laboratory using both fixed and adjusted price models. Calvo's (1998) research also relates to decision-making based on previous information. The author writes that herd behavior occurs when people make decisions based on rumors and adds that incentives to assess the validity of rumors diminish as capital markets grow.

While agreeing with the previous three explanations of herd behavior, Bikhchandani (2001) adds that individuals may also have an intrinsic preference for conformity. In his 2008 paper, Cipriani observes that in a laboratory setting only a few subjects engaged in herd behavior often. Of all of the characteristics collected, gender was the only one to have an impact: women participated in herd behavior more than men, however, neither psychological nor cultural traits were recorded. We seek to investigate whether cultural dimensions can cause an intrinsic and consistent preference for herd behavior.

The previous paragraphs summarize why herd behavior occurs and how it occurs. However, few studies have investigated the setting in which herd behavior occurs. Avery (1998) describes an environment in which herd behavior can become particularly destructive and lead to bubbles in financial markets. This situation occurs when market participants believe that the majority of traders possess accurate information when they do not. The author refers to this as composition uncertainty and claims that it can greatly complicate observational learning and lead to market inefficiencies such as asset mis-valuation. In line with Avery's predictions, Cipriani (2005 & 2008) observes that flexible price models help to relieve uncertainty and result in less herd behavior in the laboratory. As mentioned before, Cipriani's results led him to urge others to look for other explanations such as non-informational motives in order to gain a better understanding of herd behavior. Such motives include individual psychology, behavioral biases, and cultural influences.

Since herd behavior can have a significant impact on financial markets, it is interesting to investigate whether a country's (and an individual's) cultural dimensions can magnify herd behavior, thus resulting in more pronounced asset mis-pricing, increased stock volatility, and general instability. Consequently, the literature on three cultural dimensions is discussed next.

Cultural Dimensions

Building on the idea that non-informational motives would be helpful in explaining herd behavior, we investigate the three cultural dimensions of individualism, power-distance, and uncertainty avoidance as defined by Hofstede (2001). A cross-cultural study conducted in Germany and the U.S. will investigate both the direction and intensity that these three dimensions exert on herd behavior. Culture is very important when trying to explain variations within financial markets across the globe because the perceptions, behavior, and thought processes of people differ across cultures. Hofstede's cultural dimensions, while not without critics, have become the benchmark for cross-cultural studies. (Triandis 2004)

Individualistic societies emphasize autonomy and independence while collectivistic societies are more heavily influenced by in-groups and family (Gelfand 2007, Hofstede 1980). An individualistic culture is made up of about 35 to 100% idiocentrics; people who think, feel, and act in an individualistic way, which includes the likeliness of initiating action and having strong opinions. A collectivist culture is made up of about 35 to 100% allocentrics; people who think, feel, and act in a collectivistic way, which includes the likeliness of being accommodating and holding swayable opinions. (Triandis 2004)

The power distance dimension reflects the importance of equality in regard to power distribution within a society, specifically the acceptance of unequal power distribution by the majority (Hofstede 2001). It is expected that in societies with a high power distance there will be increasingly more power placed within the hands of a decreasing few. Beckmann (2007) finds that the level of power distance determines the characteristics of individuals with power. The age of an individual has a more significant effect than the amount of experience. This may convey that individual works play less of a role in determining status in societies with a higher power distance. When encountered in an individualistic setting, a high power distance will result in individuals who desire to stand out while a low power distance will result in individuals who desire to be individualistic, but prefer to not stand out or garner much attention in the process (Triandis 2004).

The uncertainty avoidance dimension measures how much stress society feels when dealing with uncertainty and can be used to explain the extent to which an individual's behavior will be influenced by stress and uncertainty (Hofstede 2001, Gelfand 2007). In 2001, Hofstede showed that countries with higher uncertainty avoidance tend to react to situations in a more emotional manner. Beckmann (2007) defines uncertainty avoidance as the extent to which individuals feel threatened by and attempt to avoid ambiguous and uncertain situations. He finds that one of

the ways in which uncertainty avoidant societies cope is by spending more time and energy on research efforts to diminish or eliminate uncertainty. Germany, he found, spends more time on research efforts than the United States. Research is not always feasible due to time or money constraints as mentioned earlier. With an increased focus on the importance of information it is likely that uncertainty avoidant individuals would be more apt to rely upon perceived information from the actions of others as a substitute for uncertainty diminishing research.

Within the last few years increased interest in the affects that culture has on the financial markets has resulted in some interesting research on the topic. In 2007, Beckmann published a paper about the affects of culture on the international asset management industry. One of his findings was that asset managers in more individualistic societies tended to herd less than those from more collectivistic societies. They found the influence of culture on herd behavior to be both significant and stable. Herd behavior was also correlated to lack of experience and/or education. Unlike the majority of other papers in the field, Beckmann chose to focus the research on more than one cultural dimension. He also found that higher power distance led to more experienced individuals in higher positions and uncertainty avoidance led to more research effort. In 2008, Schmeling tested for the effects of herding and overreaction in the stock market by using Hofstede's dimensions of individualism and uncertainty avoidance as proxies. They suspect that herd behavior and overreaction affect the degree to which investor sentiment impacts the stock market. They find sentiment to have a strong impact on stocks in Germany, but not in the United States. In the end, they find that cultural factors are a strong indicator of sentiment return in the stock markets. A similar study by Zouaoui in 2010 finds that "sentiment helps to predict the departure of stock prices from their fundamental values only in countries where herd-like behavior and overreaction are strong and where market integrity is low". This evidence shows that culture and specifically behavioral biases can affect stock prices. Sentiment has also been found to affect the valuation of assets (Brown and Cliff 2005).

Overall, the literature review above indicates that individuals' herding behavior can vary significantly along the lines of cultural dimensions. Our purpose is to specifically investigate whether the cultural dimensions of individualism, power distance, and uncertainty avoidance directly relate to herding behavior in the United States and Germany, and whether significant differences in the cultural dimensions, herding behavior, and their relationships exist between the two countries.

Hypotheses

The expectations of this study are that all three cultural dimensions exhibit a significant relationship with herd behavior. Past research by Hofstede implies that when a culture is more collectivistic there will be less incentive to choose in contradiction to prevailing consensus. The first hypothesis is that individualism within a society will decrease the likelihood of herd behavior. Thus, it is expected that the dimension of individualism will negatively impact herd behavior in both countries.

Based on the premise that individual works may be recognized and rewarded more in societies with a lower power distance and the idea that groups of individuals in high power distance societies may be less motivated to break away from the pack, the second hypothesis is that a higher power distance will result in more herd behavior.

The less willing a society is to deal with uncertainty, the more likely they are to make similar (safe) decisions and seek information that may at times be gleaned from observation. Going against the norm is a cause of stress and is more likely to be avoided in uncertainty avoidant societies. The third hypothesis is that uncertainty avoidance within a society will increase the likelihood of herd behavior.

Survey and Methods

Data acquired for statistical analysis was gathered through the participation of over 300 university-attending US and German citizens in completing a survey specifically designed to capture the individual's propensity to herd intentionally as well as their personal ranking along Hofstede's three cultural dimensions. The survey was composed of demographic questions followed by a combination of previously published and original questions to measure the individuals' uncertainty avoidance (UA), individualism/collectivism (IND/COLL) and power distance (PD). The items previously developed by Dorfman and Howell (1988) were used for UA and PD, while the items developed by Hui and Triandis (1986) were used to assess IND/COLL. Fifteen questions to assess herding behavior (HERD) were developed by the authors. An individual's ranking on herd behavior and along the three cultural dimensions was measured on a scale of 1 to 5.

The UA, PD, and IND/COLL items, together with the fifteen HERD items were next analyzed using principal components analysis. To this extent, the factor analysis combined the two samples, rather than analyzing the two samples individually.³ For each construct, at least two items emerged with factor loadings greater than .6. Subsequently, scales were developed for each construct. For the means and correlations displayed in Tables 2 and 3, a simple average of the items with loadings greater than .60 was used. For the regressions in Table 4, a weighted average of the items based on the factor loadings was used.⁴

It is noteworthy that the final scale used to measure herding behavior consists of three questions. The reliability is relatively low with a Cronbach's alpha of .60 for the entire sample (.62 for the US sample only and .58 for the German sample). According to George and Mallery, a Cronbach's alpha of .6 is not poor, although questionable, while an alpha of .70 is acceptable. Given that no previous construct existed to successfully measure herding behavior, we believe this is a very good first attempt to isolate individual items that can measure this construct.

After the scales were developed, a small test run of the survey, written in English only, was used in order to ensure both question clarity and effectiveness. Approximately half of the data was gathered from business students at a regional Florida university, while the other half was gathered from business students at four German universities, namely, the University of Applied Sciences Cologne, the University Duisburg-Essen, the University of Applied Sciences and Arts Dortmund, and the Berufsakademie Bad Mergentheim. All students were informed that the survey was to play an important role in a cross-cultural study and were encouraged to leave blank any question they did not feel comfortable answering. All questions had a "No Basis to Judge" response as well. Upon omitting surveys that either contained valueless responses or were incomplete, the initial 539 administered surveys were reduced to the afore-mentioned 309 used in this analysis, 154 from the United States and 155 from Germany. It is important to note that Cipriani (2008) discovered that results from undergraduate students were not dissimilar from results collected from professional investors. As shown in Table 1, both samples were similar in age and gender demographically speaking. However, German students had relatively more travel and employment experience. Overall, we believe the samples are substantially similar to allow for a direct comparison between them.

Table 1. Sample Population Demographics^a

³ Darlington (2004) recommends comparing the eigenvalue means for subsamples in order to determine whether subsamples should be combined. If the means of the eigenvalues are quite different, the samples should not be combined. Results not reported here indicate no substantial difference in the subsamples along the four constructs analyzed.

⁴ A similar approach has been followed by Fagenson-Eland, Ensher, and Burke (2004). However, the authors only utilize a simple average in their regressions. We conducted the analysis using both simple averages and weighted averages and find no difference in results using either method.

	Age		Gender		Travel Abroad	Pre University Employment	Employed at Time of Survey
	Mean	Median	Male	Female			
United States	25	22	49%	51%	73%	25%	34%
Germany	23	22	45%	55%	100%	36%	69%
All Data	24	22	47%	53%	87%	30%	51%

Notes to Table 1:

^a The total sample consists of 309 observations (154 US and 155 German)

Results

Hofstede's research placed the US relatively higher than Germany on individualism and power distance, but lower in uncertainty avoidance. Table 2 shows the descriptive statistics (mean, median, and standard deviation) for the four scales for each of the two subsamples individually and for all data combined. As shown in the Table, there is no significant difference between the US and German samples for the individualism and herding dimensions. This result for the individualism dimension is perhaps a little surprising, since Hofstede's results have consistently indicated the US to be extremely individualistic.

Table 2. Descriptive Statistics for All Data by Variable and Sample^a

		Mean ^b	Median	Std. Dev.
IND	United States	3.08	3.00	.86
	Germany	3.06	3.00	.72
	All Data	3.07	3.00	.79
PD ^c	United States	2.01	2.00	.73
	Germany	2.36	2.50	.62
	All Data	2.18	2.00	.70
UA ^c	United States	3.72	4.00	.74
	Germany	3.50	3.50	.70
	All Data	3.61	3.50	.73
HERD	United States	2.49	2.33	.70
	Germany	2.40	2.33	.66
	All Data	2.45	2.33	.68

Notes to Table 2:

^a The total sample consists of 309 observations (154 US and 155 German)

^b Scales were constructed for each of the four constructs based on the results of the factor analysis. A simple average was utilized to compute the scales, using only items with loadings greater than .60. At least two items were included to develop each construct.

^c The difference in means for the two samples is significant at the .01 level for Power Distance and Uncertainty Avoidance. Germany has significantly higher PD and lower UA than the US.

Table 2 also shows, however, that the US ranks relatively lower in power distance and higher in uncertainty avoidance than Germany. These departures from previously published country rankings may be explained, at least in part, by two of Hofstede’s main criticisms. The first is that culture does not exist within defined borders. Immigration laws in the United States have helped to create large cultural melting pots across the nation. Germany, while once very strict on immigration, has begun to relax its borders as well. The second criticism relates to Hofstede’s oversight in relation to potential changes in culture over time.

Although not shown in Table 2, none of the cultural dimensions and the herding construct differed significantly across the samples in terms of their variance.

In order to investigate how the variables relate to each other, we next compute the correlation coefficients for the four constructs in Table 3. As shown in the Table, we compute the correlations for each sample individually and then for all data combined. The results shown in Table 3 are interesting. First, higher power distance is associated with greater individualism for the overall sample and for the US sample, but not for the German sample. This makes intuitive sense – an individual that perceives a greater distance to his or her superiors is probably more individualistic. The fact that this correlation is not significant for Germany could simply reflect the fact that the distance between employer and employee is culturally greater in that country, irrespective of an individual’s cultural characteristics. That is, employees are more reserved relative to employers, whether they are individualistic or not.

PD is negatively correlated with UA for the overall sample and for the US sample, but not for the German sample. Thus, more uncertainty-avoidant individuals have less power distance than less uncertainty-avoidant individuals. Perhaps the dislike of uncertainty will cause people to approach their superiors more readily, which may act to reinforce an environment where bi-directional communication within professional relationships is encouraged.

Table 3. Correlations Between Cultural Constructs and Herding Construct.

		IND ^a	PD ^a	UA ^a	HERD ^a
IND	United States	1.000	.253**	-.024	-.083
	Germany	1.000	.057	-.142	-.102
	All Data	1.000	.162**	-.074	-.091
PD	United States		1.000	-.202**	.057
	Germany		1.000	-.03	.136
	All Data		1.000	-.157**	.073
UA	United States			1.000	.077
	Germany			1.000	.250**
	All Data			1.000	.167**
HERD	United States				1.000

Germany				1.000
All Data				1.000

Notes to Table 3:

** Significant at the .01 level.

^a Scales were constructed for each of the four constructs based on the results of the factor analysis. A simple average was utilized to compute the scales, using only items with loadings greater than .60. At least two items were included to develop each construct.

For the total sample and for the German sample, but not for the US sample, UA is positively correlated with herding behavior. That is, higher UA results in greater herding behavior among individuals. This again makes intuitive sense – if an individual dislikes uncertainty, he or she is more likely to herd with other individuals to reduce uncertainty. Interestingly, even though the US has, surprisingly more UA, as discussed in Table 2, the correlation between UA and HERD is not significant for this subsample. The global financial crisis has effectively caused people to be more suspicious rendering them more uncertainty-avoidant. In a sense, the herding behavior associated with the housing market ultimately resulted in the housing bubble and its subsequent collapse. Thus, it is possible that the housing bubble collapse resulted in less willingness to engage in investment schemes that others partake in.

Another interesting observation from Table 3 is that the IND and HERD constructs are *not* significantly correlated with each other for the overall sample and for each of the subsamples. This is encouraging, since the authors took great care to develop the HERD items to be distinguishable from IND/COLL items. The lack of a significant correlation between the two constructs and the reasonable reliability of the newly developed HERD construct indicate that HERD is indeed a unique construct that can be separated from IND/COLL.

Lastly, we investigate whether the three cultural dimensions included here (i.e., individualism/collectivism, power distance, and uncertainty avoidance) related to herding behavior according to the hypotheses previously developed. In order to accomplish this, we constructed scales consisting of weighted averages of the items with factor loadings greater than .6. These resulting scales were then utilized as the dependent and independent variables in the regressions.

The regression results are displayed in Table 4. For the entire sample, displayed in the last row, all three hypotheses are supported: greater individualism causes less herding, while larger power distance and greater uncertainty avoidance cause more herding. While these results are encouraging, recall that the correlation between IND/COLL and HERD was not significant at a .05 level in Table 3. Moreover, in Table 4, the coefficient is only marginally significant for the entire sample ($p < .10$) and insignificant for the two subsamples.

Perhaps surprisingly, none of the hypotheses are supported for the US sample, while the second and third hypotheses are supported for the German sample. For this sample, higher power distance and greater uncertainty avoidance are indeed associated with greater herding behavior. Moreover, for the German sample, about 7 percent of the variation in HERD behavior is explained by individualism/collectivism, power distance, and uncertainty avoidance.

Table 4. Regressions of Herding Construct on Cultural Dimensions by Sample. (t-statistic in parentheses.)

	Intercept	IND ^a	PD ^a	UA ^a	Adjusted R-Squared	F Statistic
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United States	2.315 (5.68)***	-0.091 (-1.34)	0.107 (1.32)	0.087 (1.11)	0.004	1.20
Germany	1.879 (4.46)***	-0.069 (0.96)	0.145 (1.76)*	0.233 (3.16)***	0.070	4.86***
All Data	1.993 (7.06)***	-0.083 (-1.71)*	0.110 (1.98)**	0.168 (3.15)***	0.037	4.99***

Notes to Table 4:

- * Significant at the .10 level.
- ** Significant at the .05 level.
- *** Significant at the .01 level.

^a Scales were constructed for each of the four constructs based on the results of the factor analysis. A weighted average was utilized to compute the scales for regression purposes, using only items with loadings greater than .60. At least two items were included to develop each construct. For the means and correlations, a simple average was utilized for easier interpretation. The results are identical using a simple average.

Conclusion

The effect of psychology on Finance is indisputable. This paper attempts to relate cultural dimensions to herd behavior on a general basis, which could ultimately be expanded to financial markets. As the study of behavioral finance progresses and globalization becomes a way of life, the importance of the study of culture on the psychology of financial markets becomes increasingly pertinent. This study confirms that culture at least partially affects the degree to which individuals are inclined to herd. It appears that societies may shift along cultural dimensions over time and may also be affected by emotionally powerful or jarring events.

This paper is the first to test how the cultural dimensions of individualism, power distance, and uncertainty avoidance affect an individual's likelihood to participate in intentional herd behavior across cultures. Moreover, to our knowledge we are the first to successfully develop a scale that can be reliably used to assess herd behavior. Results indicate that cultural dimensions indeed play a role in determining the extent to which people engage in herding behavior. The findings of this research serve to better inform the financial community as to how herding may affect markets differently. A better understanding of behavioral implications within financial markets may decrease composition uncertainty and its negative affects by creating increased awareness of herd behavior within markets. Enhanced awareness may contribute to customized solutions such as rewards for creativity in highly collectivist societies, new wage structures in societies that are individualistic, and increased recognition of individual works within high power distance societies.

Future research may build upon this study through the addition of Hofstede's masculinity dimension as well as the addition of data from other cultures. Research on effective herd behavior mitigation may offer particularly useful applications. There is also much room for continuing research on how culture affects other psychology-based behaviors, particularly those which have potentially negative effects on financial markets.

While the present study is a first attempt to measure herding behavior via a standardized construct, it is but a first step in explaining the herding behavior as a function of cultural dimensions. We leave it to future research to refine both the construct and the relationships between the construct, culture, and other dimensions.

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SWIFT: The nerve of financial transaction

Dr. S.A.M. Rizvi¹, Dr. Halima Sadia Rizvi², Zaid Al-Baghdadi³

¹ Dept. of Computer Sc., J.M.I., New Delhi, India, samsam_rizvi@yahoo.com

² Dept. of Economics, J.M.I., New Delhi, India, halima_rizvi@yahoo.co.in

³ Dept. of Computer Sc., J.M.I., New Delhi, India, zaid1983@ymail.com

Abstract

Today in 2010 and after 37 years of the foundation of the Society for Worldwide Interbank Financial Telecommunication "SWIFT" we face the basic and unique roll of the SWIFT in the financial institutions by connecting each other and simplify the financial transactions and execute it is in seconds after it were executed in days, in this paper we are trying to over view the SWIFT system with its evolution, set-up, set-up in India, benefits, SWEFTNet, etc.

Introduction

The Society for Worldwide Interbank Financial Telecommunication ("SWIFT") operates a worldwide financial messaging network which exchanges messages between banks and other financial institutions. SWIFT also markets software and services to financial institutions, much of it for use on the SWIFTNet Network, and ISO 9362 bank identifier codes (BICs) are popularly known as "SWIFT codes".

The majority of international interbank messages use the SWIFT network. As of September 2010, SWIFT linked 9,000+ financial institutions in 209 countries. SWIFT transports financial messages in a highly secure way, but does not hold accounts for its members and does not perform any form of clearing or settlement.

It was founded in Brussels in 1973, supported by 239 banks in 15 countries. It started to establish common standards for financial transactions and a shared data processing system and worldwide communications network. Fundamental operating procedures, rules for liability etc., were established in 1975 and the first message was sent in 1977.

SWIFT is a cooperative society under Belgian law and it is owned by its member financial institutions. SWIFT has offices around the world. SWIFT headquarters are located in La Hulpe,

Belgium, near Brussels. Averages of 2.4 million messages, with aggregate value of \$2 trillion, were processed by SWIFT per day in 1995.

SWIFT does not facilitate funds transfer, rather, it sends payment orders, which must be settled via correspondent accounts that the institutions have with each other. Each financial institution, to exchange banking transactions, must have a banking relationship by either being a bank or affiliating itself with one (or more) so as to enjoy those particular business features.

Evolution

Prior to the introduction of the SWIFT system, communication between various banks in different countries were using mediums like telephone, telegram, telex, mail, courier, etc. Such a system resulted in a lot of delay and was proving costly. For example, a letter from India to UK could take anything from 5 to 10 days. Similarly a telegram could take a minimum of 3 days. Further each bank could use their own mode of communication depending upon the development of communication system in that country. Added to this was the usage of language. The communication would take place in a common language known to the two parties to the transaction, say in English. Then each of the banks had its own standards for putting through the transactions. Interpretation of the message was another area which caused a lot of misunderstandings. There was an urgent need to formalise and standardise the mode of communication as well as the terms generally used in all such communication.

In May 1973, 239 major banks from 15 countries formed the organization called SWIFT as a cooperative body with its headquarters at Brussels, Belgium. The live operations commenced on 9 May, 1977. SWIFT allows the financial institutions worldwide to exchange standardised messages relating to international financial transactions. The users of the system include banks, nonbanking financial institutions like dealers in securities, brokers, clearing and depository institutions, trust or fiduciary services companies, stock exchanges, etc. Today, it has grown to about 7,600 member banks and institutions in 202 countries. SWIFT processes on an average 9 billion messages a day and average transit time is less than 20 seconds. Security and reliability are now synonymous with SWIFT.

Set-up

SWIFT network consists of Regional Processors (RP) and SWIFT Access Processors (SAP). One RP is installed for a region. One such regional processor is located at Singapore. The SAP is one or more for each country depending upon the commercial importance of the centre. The SAP is the gateway to SWIFT network for that country. All the SAPs and RPs are networked through high speed global telecommunication network to two main frame computers, one in USA and another at Netherlands. All computers in the network have at least one standby processor which provides extensive hardware backup. Likewise, all the data communication paths within the network are duplicated to ensure continued service in the event of any failure of one path.

Each of the users is given a uniquely identifying code by a 11 digit code called Bank Identifier Code commonly known

as BIC. SWIFT periodically publishes the address of all its members in BIC directory. Soft copies of the updates are supplied to its members once every quarter. The structure of the BIC address is as follows:

- the first four digit code represents banks name it is unique to each bank and irrespective of the location the code is uniform, e.g.,

CNRB	- Canara Bank	BKDN	- Dena Bank
BKID	- Bank of India	SYNB	- Syndicate Bank
SBIN	- State Bank of India	STIN	- State Bank of Indore
CHAS	- Chase Manhattan Bank	CHI	- Citi Bank NA
COBA	- Commerzbank AG	DEUT	- Deutsche Bank AG

- the next two digit code represents the country where the bank is located e.g.

CN	- China	DE	- Germany
GB	- United Kingdom	N	- India
IT	- Italy	MY	- Malaysia
MX	- Mexico	US	- United States
JP	- Japan	LU	- Luxemburg

- the next two digit code represents the regional processor to which the bank is linked to:

BB	- Mumbai	BJ	- Beijing
FF	- Frankfurt	JT	- Tokyo
2L	- London	33	- New York
KK	- Copenhagen	66	- Los Angeles
PP	- Paris	SG	- Singapore

- the last three digit code represents the branch/office of the bank.

The full address of a Bank/Branch having SWIFT connection will be:

SBININBB 110	-	State Bank of India, Mumbai Main branch
SBINUS33DTS	-	State Bank of India, DTSBranch, New York

SBIBDEFF	-	State Bank of India, Frankfurt, Germany
UBININBBNPT	-	Union Bank of India, Mumbai Main office
ABNAINBBDEL	-	ABN Amro Bank, New Delhi
CNRBINBBWXM	-	Canara Bank, Mysore Foreign Exchange Cell
CNRBGB2L	-	Canara Bank, London

Set-up in India

SWIFT establishes one of its SAP in each country depending upon the commercial importance of the city. Banks in India were hooked to SWIFT network on 02.12.1991. The SAP is located at WMD Trade Centre, Cuffe Parade, Mumbai. The system is maintained by M/s CMC Ltd. All the members are given one access to the SAP. Each of the member banks has to designate one of its office through which the connectivity will be obtained.

The designated office is known as Computer Based Terminal (CBT) of the bank. The CBT will be located in the premises of the member banks. The CBT is connected to the SAP either through a dial-up line or leased line. All the equipments installed in the CBT should conform to SWIFT specifications. It is the responsibility of the member banks to maintain the system in their CBT. The CBT acts as the gateway to SWIFT for its branches. All the other branches of the banks are in turn connected to the CBT and this is again through leased lines or dial-up lines.

Responsibility: SWIFT assumes the responsibility for the functioning of the network, maintenance and security of the system. SWIFT *also* bears financial liability arising from loss or delayed delivery of messages provided it are due. To SWIFT. The responsibility undertaken by SWIFT for delivery of financial messages of its members is only up to the SAP which is the SWIFT gateway in the destination country. SWIFT takes no responsibility for the security of any communication facilities and transmission lines between the SAP and the user's CBT or the security relating to the user's premises or terminal facilities of the user. It is the user's responsibility to maintain their communication lines between CBT and SAP and terminals as per SWIFT's requirements. The maintenance the system at the CBT is the responsibility of the member banks. It is the responsibility of the CBT to log-in to the SAP periodically and download the message. The CBT should be capable of receiving traffic for at least 7 hours between 0800 and 1800 Hrs.

Software: For data entry and exchange of messages SWIFT provide the software.

These softwares are capable of running on different operating systems:

<i>Software</i>	<i>Platform</i>	<i>Purpose</i>
SWIFT Alliance Entry and Access	on Windows NT	for data entry and interface

SWIFT Alliance Access	on UNIX	for data entry and interface
PC-Connect	on MS-DOS	for data entry only
ST200/ST 400		for data entry and interface

The system works on store and collect basis, i.e. when the CBT logs-in to SAP first the inward messages are downloaded before the outward messages are sent. Further it is possible to write an interface between SWIFT softwares and other banking software. Most of the banks in the US and Europe have already linked their banking software with SWIFT programme and all messages are directly taken into their system without any manual intervention.

Security: The security of the transaction exchanged between the banks is maintained by SWIFT Authenticator Key (SAK). SAK is a randomly generated collection of 16 alphabets and numerical which is exchanged in strict confidence between each pair of banks. The SAK makes calculations on the entire message using the authentication algorithm instead of on selected field, which are being done in other manual systems.

Message Types (MT): All the messages exchanged between the member banks will be in standard and structured formats. The use of message types totally eliminates the need for reinterpretation of the message at the receiving end. This has also enabled the user to overcome the language barrier and the possibility of misinterpretation. SWIFT has more than 160 message types and these are broadly classified into 9 categories. All the forms carry a three digit number and the first digit indicates the message category. The message categories are:

1. Customer Transfer
2. Bank Transfer
3. Loan, Deposits and Foreign exchange
4. Collections
5. Securities
6. Precious Metals and Syndication
7. Letters of Credit and Guarantees
8. Traveler's Cheques
9. Nostro/Vostro Accounts/Customer Account Status
10. System Messages

Some examples of the MTs are:

MT 100: for customer payments

MT 101: request for transfer

MT 110: for draft advice

MT 400: Collection: advice of its payment MT 410: Acknowledgement

MT 420: Tracer

There are some messages which are common for all categories of the messages. These are called the message groups. These forms can be used for any category of the message type.

The common group types are:

n90: Advice of charges/interest and other adjustments

n91: Request for payment of charges/interest/other adjustments

n92: Request for cancellation

n93: Information service message

n95: Queries

n96: Answers

n98: Proprietary message

n99: Free format

The above forms can be used for all categories, e.g. if a query is to be raised for collection it will be sent as MT 495 and in reply MT 496 will be used.

Even within the message types the fields structures are well defined. For example, field

50: Ordering Customer

52a: Ordering Institution

53a: Sender's Correspondent

54a: Receiver's Correspondent

56a: Intermediary

57a: Account with Institution

58a: Beneficiary Institution

59a: Beneficiary Customer

Further the structure of the fields is also defined, whether it is numeric alpha or alphanumeric, what is the length of the field etc.

The messages can be formatted in five languages:

- English
- French
- Italian
- German
- Spanish

Benefits

The benefit of using the SWIFT system is that:

1. *Reduced Cost of Operation:* Messaging through SWIFT is very cheap compared to other modes of communication. On an average the cost per message work to about Belgium Franc 15 (Rs 15).
2. *High Speed Reliable Communication:* The reliability of the system is very high as the present operational efficiency is about 99.995 per cent. The messages are delivered to the destination within 5 minutes.
3. *Security and Privacy:* Security features incorporated in the SWIFT network ensures that no unauthorised user can access the system. All the messages *are* encrypted before transmission which protects the messages from tapping/tampering. The security standards are very high compared to other mode of communication.
4. *Improved Customer Service:* SWIFT network is available for 24 hours a day and 7 days a week. Standardised and structured messages totally eliminate misunderstanding and misinterpretation. As delivery of message is within a time-frame the customer receives the amount promptly. Further SWIFT covers almost all types of financial and non-financial transactions like remittance of funds, Letter of Credit/Bank guarantee, Customer Account Statues, Foreign Exchange Transactions, Nostro/Vostro Account Status, etc.
5. *Standardised and Machine Readable Message:* This makes it possible to write interface for the messages and the 'same can be taken into the accounting system of the beneficiary bank.
6. *No Language Barrier:* Since the messages are highly structured interchange of, message within the five languages doesn't pose any limitations. Thus misunderstanding and misinterpretation are totally avoided.

SWIFTNet

The migration to SWIFTNet heralds the launch of most modern facilities on the SWIFT platform. SWIFTNet is SWIFT's advanced IP-based messaging solution. It comprises a portfolio of products and services enabling the secure and reliable communication of mission, critical financial information and transactional data. By combining the functionality of FIN with the interactive, file transfer and browsing capabilities of the full SWIFTNet portfolio, it establishes the basis for growth for the entire SWIFT community. SWIFTNet allows us to do business in an environment that now combines the security of a private network and the guarantees of a trusted third party with the flexibility of internet technologies. Business benefits include single window connectivity, improved straight through processing and global messaging. The key features of SWIFTNet are the interactive messaging complementing FIN, internet technologies in a managed and private platform, new XML message standards and fully embedded PKI-based security services. India's own domestic financial communication system adopted these features by 2002 itself and we eagerly awaited SWIFT's migration from X.25 to IP.

Conclusion

As there are more than 9000 financial institutions connected together through a private network that makes it very easy and takes a few seconds to transfer trillions of money in different currencies.

Today the SWIFT is the only fast and unique way for the money transferring and it is also considered as the nerve of the financial transactions specially with the facilities of the banking management systems which it is provided by different software companies in the world but all these companies are using SWIFT platform facilities in their banking software.

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Children's Educational Effect of Argentinean Program for Unemployed Heads of Households

Research-in-Progress

Ana Inés Navarro

Universidad Austral

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Abstract

This paper explores the effect on children's schooling achievement to be growing in a family where some of the adult members are enrolled in the Program for Unemployed Heads of Households in Argentina. Based on a sample of pooled household surveys for the period 2004-2006, the estimations unveil that the favourable or harmful effect depends on the gender of the head of the household.

JEL classification: I38, J62

Keywords: poverty-alleviation program, schooling gap, Argentina.

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Introduction

Since the nineties, virtually every country in Latin America has implemented some kind of social safety net⁵ to protect vulnerable households providing cash and in-kind transfers to chronically poor households to minimize the most dangerous risks associated with deep poverty such as child malnutrition and missed schooling. There is evidence showing that the transfers have been broadly well targeted to poor households and the programs have improved the lives of the poor (Birdsall et al. 2008; Fiszbein and Schady 2009; Franceschelli 2005; Galasso and Ravallion 2004; Gasparini et al. 2007; Roca et al. 2003). These programmes offer monetary subsidies generally requiring the recipients to either accept public-service jobs or participate in job training or, when the enrolled is a parent, make investments in the human capital of their children (enrolling them in schools, attending medical check ups during pregnancy). By conditioning the aid governments seek to improve not only present life conditions for poor households but also the participants' and their children's future opportunities. Conditioning is also grounded on political economy considerations since taxpayers may be more likely to support transfers to the poor if that aid is linked to individual's efforts to overcome poverty in the long term (Fiszbein and Schady 2009).

Notwithstanding, there is some social scepticism about the inherent programs' success on reducing chronic poverty or long term inequality due to a phenomenon broadly called a "loss of the working culture". For the individual that participates in the program, relying on it may reduce the incentive to search for work or at least reduce the incentive to look for a formal job, damaging that way the long-run individual employability and perpetuating his poverty condition. Sometimes this effect can emerge as an undesirable consequence of the program design (Gasparini et al. 2007). There is vast evidence that in Latin America conditional cash transfer programmes have led poor households to make more use of health and education services, but the programmes have not always led to better child nutritional status and there is little evidence of improvements in learning outcomes (Fiszbein and Schady 2009). There may also be undesirable consequences for the next generation. Welfare participation in one generation may encourage welfare participation in the next generation. Moreover, growing in a family where parents receive an assistance program might modify children attitudes in multiple ways preventing in the long term child self-sufficiency (Corak 2006; 2004). Since the capacity of children to become self-sufficient and successful adults is compromised not only by monetary poverty, but by poverty of experience, influence, and expectation, there is a crucial question regarding the long stand effect of the poverty alleviation programmes. Have these programs a negative effect on children opportunity of overcoming poverty as they became adults? This is the main issue underlying in this paper.

The aim of this paper is to investigate the effect of the Argentinean program called *Plan Jefas y Jefes de Hogar Desocupados* (Program for Unemployed Heads of Households), henceforth PJH, over the educational achievement of the children growing in the beneficiaries households. Based on the methodology developed by Behrman et al. (1998), Dahan and Gaviria (2001) and Andersen (2001) for estimating educational mobility between parents and children, this study measures the schooling gap effect of being raised in a family participating in the PJH social assistance program. It also analyzes the schooling gap effect of being raised in a family where besides the head of the household other members receive the subsidy. Furthermore, it analyzes whether there is a gender effect when mothers are the ones who receive the subsidy instead of fathers. The analysis is based on the Argentinean survey *Encuesta Permanente de Hogares (EPH)*, collected by the *Instituto Nacional de Estadística y Censos (INDEC)*.

This is an exploratory paper, but despite its preliminary nature it contributes to the discussion on the long term effects of conditional cash transfers. It also contributes to point out that for breaking persistent poverty in Latin America the programmes should focus on children's achievements not merely in augmenting their consume of health and educational services. It also contributes to keep in mind that families' characteristics other than incomes and education are crucial to the transmission of social status between generations.

Based on a sample of pooled household surveys for the period 2004-2006, the estimations obtained in the paper unveil that the favourable or harmful effect depends on the gender of the head of the household.

The rest of the present paper is organized as follows: An overview of the theoretical framework and a description of the assistance PJH are offered in the next two Sections. Section 4 describes the data and the methodological frame used in the paper. Section 5 summarizes the main results and, Section 6 concludes.

⁵ Like "Oportunidades" (Mexico), "Bolsa Familia" (Brasil), "Bono Solidario" (Ecuador), "Familias en Acción" (Colombia), "Chile Solidario" (Chile), "Plan Jefas y Jefes de Hogar" (Argentina).

Social assistance programs long term effects

Monetary transfers for vulnerable households, whatever their convenience and desirability in the short term, may not have a positive long lasting impact if they improve parents position in the income distribution during the period of assistance but fail in assuring this improvement when the program ends. The effect may be even worse, if the aid discourage the beneficiaries to climb by themselves the income ladder through hard work and effort. Moreover, the interaction between social policy and the family may influence children's educational achievements or the direction they take in the labor market. Consequently, social assistance programmes might perpetuate an intergenerational cycle of poverty by preventing child self-sufficiency (Corak 2004).

There are different rationales for the so-called "culture of poverty" argument. On the one hand, having parents that receive social assistance, a child may view the program as a legitimate income source, feeling no shame about the receipt of payments. This argument is about preferences. On the other hand, living in a family that receives SA provides the child information about the program and its rules making it easier in the future for the child to collect similar help (Corak 2004). These theories are rarely rigorously tested in empirical research which concentrates in estimating the correlation in welfare receipts between parents and child. For example, Page (2004) use women's PSID data for examines welfare participation among generations finding higher correlations than previous estimates which have been biased due to short length data and measurement errors. Corak et al. (2004) use administrative data on unemployment insurance from Canada and Sweden noting a higher rate of incidence on young males having parents that had also received benefits. The authors try to identify the causes of the correlation, finding that in Canada young people seems to "learn" from their parents about the program and somehow have their preferences and opportunities shaped in a way that increases the likelihood they will collect unemployment insurance, but not in Sweden. In this country, worker joblessness at early ages leads to repeated reliance on unemployment insurance. They interpret these differences in terms of the different design and underlying philosophies of unemployment insurance in the two countries.

The intergenerational transmission of economic status is a complex process that involves many links among family incomes, parental investments in children's human capital, family tastes, children abilities, schooling attainment, and future incomes of children in later life (Becker and Tomes 1979, 1986; Behrman et al. 1998; Han and Mulligan 2001). However, there are several individual characteristics that are not generally considered to be factors of production (Bowles and Gintis, 2002). The authors emphasize that cognitive skills and education have been overstudied, while wealth, race and non-cognitive behavioural traits have been understudied.

Moreover, preferences, beliefs, and norms that govern human behaviour are partly formed as the result of heritable genetic traits, and partly transmitted through generations and acquired by learning and other forms of social interaction. Cultural transmission arguably plays an important role in the determination of many fundamental preference traits, like discounting, risk aversion and altruism (Bisin and Verdier, 2010). Osborne (2004) shows the economic importance and intergenerational persistence of personality traits. Guiso et al. (2006) summarizes an approach to introduce cultural-based explanations that can be tested and are able to substantially enrich our understanding of economic phenomena. Recent theoretical contributions endogenize these endowments by assuming that individuals' attitudes are influenced by the attitudes of their parents or other role models. Dohmen et al. (2008) find that risk and trust attitudes are strongly positively correlated between parents and children. In other words, parents who are more willing to take risks, or who are more trusting, raise children with similar traits, consistent with a process of intergenerational transmission. Notably, both mothers' and fathers' attitudes matter for child attitudes. Moreover, assortative mating of parents reinforces the impact of parents on the child, because a child who has one parent with a given attitude is likely to have a second one with that attitude as well. Prevailing attitudes in the local environment also influence child attitudes.

The empirical studies regarding the transmission of poverty deserve a particular mention in the field of mobility. Reducing the degree of child poverty has been an important concern for public policy in a number of countries in both North America and Europe during the nineties (Corak 2004). Understanding the extent of generational mobility is a first step in understanding the consequences of income inequalities, as well as the extent of equality of opportunity. It is also important understanding the mechanisms that determine the degree of income mobility across the generations as they are related to a host of pressing policy concerns (Corak 2004). In this sense, the evaluation of the long term consequences of social assistance is of particular interest.

The Household Head Program

At the end of 2001 Argentina underwent a severe economic and political crisis. Unemployment rate rose by five percentage points in a year, reaching 21% in May 2002 and by October 2002 the proportion of people living below the official poverty line jumped to 57.5% (Gasparini et al. 2007). Given the magnitude of the crisis the government introduced a large unemployment assistance scheme -PJH- as an emergency response to mitigate the economic and social unrest.

The PJH was the largest poverty-alleviation conditional cash transfer program that Argentina has ever launched⁶. By the second half of 2002 the program covered two million beneficiaries, who represented 10% of the adult population between 18 and 65 years and around 15% of all households in the country. By 2007 the program still involved around 1.5 million beneficiaries (Gasparini et al. 2007). The scheme's target were less-skilled unemployed workers - unemployed household heads (implicitly, one person per household) parents of 18 year old children or younger, or parents of handicapped children of any age- and the objective of the program was to provide a short-term safety net while at the same time increasing employability through training activities. In order to ensure self-targeting, PJH benefits were set below the minimum wage for full-time unskilled workers, all participants receiving the same monthly benefit of 150 pesos for an unlimited period of time. Individuals enrolled in the assistance program were expected to search for jobs while completing formal education or at least engaging in training activities.

The beneficiaries of the program have to contribute up to 20 hours a week for communitarian activities such as maintenance and construction of social infrastructure, cleaning of public spaces, sanitary and health supporting activities, childcare or perform administrative tasks in local agencies or work in enterprises associated with the program, which turns the PJH into a workfare program. However, according to Gasparini et al. (2007) the weak capacity to organize, supervise and enforce the work requirement at local level in such a large program impeded appreciating how effective the PJH work requirement actually was. The history (whereby the work requirement appeared as something of an afterthought), the rapid scaling up, and the circumstances of the crisis, may well have made it hard to enforce the work requirement (Galasso and Ravallion 2003).

The structure of the program was discouraging towards getting a job in the formal sector. It is relatively easy for authorities to detect when the individual has a registered visible job with social security rights, denying hence the program. The national household survey informed in 2003 that only 19 out of 2,678 PJH participants worked in the formal sector (Gasparini et al. 2007).

As a social safety net it is apparent that the program has successfully protected some families from poverty or at least against indigence (Franceschelli 2005; Galasso and Ravallion 2003; Roca et al. 2003) and there is also some evidence that the plan reduced the unemployment rate (Galasso and Ravallion 2004). The analysis about the long term consequences of participating in PJH is focused on the recipient side like estimating the informality bias of the plan or the effect of the program on the transition to employment (Gasparini et al. 2007, Iturriza et al. 2008). According to Pi Alperin (2008), despite the program improved the quality of life of those socially excluded, it has only a small effect on overall poverty and clearly this type of assistance does not solve the problem of the intergenerational transmission of structural poverty. In addition the behavioral responses to such a large public program as Jefes, are clearly of interest (Galasso and Ravallion, 2003).

Nature of the data and methodology

The data used in the present study come from the Permanent Household Survey (*Encuesta Permanente de Hogares, EPH*) conducted by Argentina's National Statistical Agency, *INDEC*. The survey now covers 31 urban areas -all of them with more than 100.000 inhabitants- who represent 71 percent of the urban areas of the country and, approximately 62 percent of the entire population of it. The national household survey in Argentina includes detailed socioeconomic information about individuals like their educational level, employment, earnings, and their main demographic traits. Up to 2002 the *EPH* was collected twice a year. During the year 2003 onward some modifications were introduced in the

⁶ At the end of 2009 the Federal Government announced the implementation of a universal child allowance of 180 pesos for all those under eighteen whose parents have no other family allowance and are unemployed or working informal economy. In December 2010, having enrolled 80% of the potential beneficiaries, there are 2.8 million beneficiaries.

questionnaire allowing for instance the identification of the PJH's beneficiaries and above all, in the frequency of conducting the survey which nowadays is carried out every three months (*EPHC*). For the latter change, although the program was implemented in the first half of 2002, the educational effects of the PJH are studied herein over the period 2004-2006. In the second half of 2006 the *EPHC* was extended to include three new urban areas, but according to Gasparini (2007) the addition of these areas does not affect the main social national indicators in a significant way.

The data correspond to the survey collected during the second quarter of each year. The latter is to avoid any potential doubt in individuals answer regarding the last grade they have already finished. Choosing some other quarter's surveys, for example the last quarter, since individuals are interviewed during the period October to December, for that moment many of them do not know for certainty if they have pass the grade they are attending or not. Actually, since the schooling calendar ends in the beginning of December in Argentina, many students will not be sure of having pass to next grade until next March when they have the results of the exams they have to take to complete the grade and pass to the next. Moreover, using data from the second quarter all the children who are attending the grade corresponding to their age have the same age by the first semester of the year. This is because the educational system in Argentina does not allow a child enters one specific grade if she have not the minimum age required for this grade before the first of July.

The unit of analysis considered herein is child between six and eighteen years of age still leaving with their parents. This age upper limitation is necessary to avoid bias due the cross-section structure of the data. Including children over their eighteen involves a substantial loss of information because many of them do not leave at parental household anymore. According the Survey of Employment and Education of Youth (*Encuesta de Educación y Empleo de los Jóvenes*) collected carried out in the Greater Buenos Aires (the largest urban area in the country) in June 2005 by *Instituto Nacional de Estadística y Censos (INDEC)* and *Centro de Estudios Distributivos, Laborales y Sociales (CEDLAS)* about 95% of all teenagers live in the parental home in; however, for young adults, the percentage of co-residing children drops to 73% for those between 20-25 years of age, and to 61% for the older group (Navarro 2010). Moreover, the program admission criteria require that children age upper limit.

The dependent variable used in the study is children's schooling gap defined as the disparity between the years of education that a child would have completed had she entered school at normal school starting age and advanced one grade each year, on the one hand, and the actual years of education, on the other hand. This definition is an adaptation of Andersen's for teenagers and young adults (Andersen, 2001p.8). The latter is a very simple indicator of future opportunities, often very well suited to study social mobility for teenagers or young adults (Andersen 2001; Behrman et al. 1998; Conconi et al. 2008; Dahan and Gaviria 2001; Navarro 2010). For example, a 16 year-old teenager who has completed 9 years of schooling will register a schooling gap of $(16-9-5) = 2$ years, if he lives in a country where children begin schooling only at the age of 5 years. Hence, schooling gap is defined as the average years of missed schooling. The concept is used herein for children and teenagers.

To model the effect of growing in a family where some of their members participates in the PJH, this study uses the methodological frame for educational persistence between parents and children in the manner of Behrman et al. (2001) and redefined by Navarro (2010) for adapt it to the particular case where the independent variable is child's schooling gap.

$$SG_c = \alpha + \beta PJH_h + \chi C_p + \delta C_h + w_c, \quad (1)$$

In this paper, SG_c refers to children's years of missing education, PJH_h refer to the fact the child is living in a household where some of its members participate in the program, C_p is a vector of parental characteristics, and C_h is a vector of household variables; w_c is an stochastic term.

The linear model in equation (1) estimates how strong is the influence of living in a household where some of its members participate in the program (PJH_h) on the children schooling achievement (SG_c). Since we define SG_c as children's years of missing education; β is expected to be positive (there is an enlargement in children's educational delay) under the "culture of poverty" argument. For parental educational level χ is expected to be negative as long as better educational parental level prevents children for missing years of school. It is also expected that χ be far from one, since according to the empirical literature (Conconi et al. 2007; Fernández 2005; Navarro 2010) there is a low generational schooling dependence for children that still lives with their parents and are attending to mandatory school in Argentina.

Defining children's schooling gap requires first calculating the number of schooling years per child. In the *EPH* survey, the respondent declares the highest level of schooling (e.g., primary, secondary) that he is currently in or has been in, whether he has completed it or not, and the last grade he passed. This information makes it possible to calculate each individual's years of schooling. In cases where some questions are left unanswered, the variable years

of schooling cannot be defined. However, in cases where children did not respond about the last grade they had passed but did declare that the highest level of education achieved was primary or secondary, it was possible to calculate their years of schooling.⁷

The main covariate for this study is whether the household receives or not subsidy from the PJH. The survey brings information of the subsidy at individual level classifying it in three different cases corresponding to those who receive it in their main occupation, those who get it in their second occupation and those who obtain it being unemployed or not belonging to the labor force at all. These three covariates takes the value of zero if the individual do not participate in the program, a value of one if she participates and the amount of earnings she declares is \$150 and the value of 2 if she is enrolled in the program but she do not declare how much she earn or she declare an amount larger than the \$150 amount of the subsidy. These latter cases were dropped from the sampled to avoid those cases that not conform well to the “loss of the effort culture” hypothesis. Those parents would be taking advantage of the social aid as a kind of income complement but not relying in the social aid as their main source of income. This information is gathered across all the members of the household to detect whether the family receives or not subsidy from the PJH (here I use household and family as synonymous) and to which kind of labor situation corresponds the subsidy.

Although the program was targeted to unemployed household heads, so, by definition there has to be for one person per household actually many families got more than one subsidy; more than a half of the beneficiaries were not household heads (Gasparini et al. 2009). This implies that not only the household’s head got the PJH but also other members of the family who managed to get it. Since having several programs in child’s family can affect differently children educational attitudes and outcomes, a new household variable named Family Total PJH Beneficiaries is generated. This captures the number of subsidies collected by the family by adding up the former three variables described above. From the latter variable, it is generated a dummy variable that takes the value of one if the total number of subsidies collected by the family is different of zero and zero otherwise. This is the main covariate for this study, which is whether the household receives or not subsidy from the PJH. Besides the covariate to capture household participation in the program, it is included three dummies variables for capturing the specific subsidy effect of each of the three cases possible regarding the base group that is individual who not participate in the program.

Considering the many ways that family background affects children education achievements, the education level of the parents and the family income are undoubtedly the most relevant. There is vast empirical evidence regarding the educational persistence between parents and children (Andersen 2001; Behrman et al. 1998; Conconi et al. 2008; Dahan and Gaviria 2001; Navarro 2010). For defining parents’ education the survey brings the same information than for the children. So in principle the procedure for compute parent’s education would be similar to the children’s one but, there are many more missing data in adults responses since many of them (61% of the household’s head) do not remember the last grade they have completed. The survey also brings information about the highest education level that the individuals have really achieved (e.g., none, incomplete primary, complete primary, incomplete secondary and so on). Although this variable is less precise than the individual years of education, has the advantage that this variable do not present any missing value for household’s heads. For this reason this is the variable used in this paper to compute parents’ education. This is a limitation of the survey and could potentially affect this

⁷ For example, if a child declares having completed secondary studies, she would have attended 7 years of primary plus 5 of secondary; thus having had 12 years of schooling. However, it was not possible to calculate the schooling years for those children for whom *Educación General Básica (EGB)* was the highest level achieved. This level includes 9 years of basic education composed of 3 consecutive levels, which are not distinguishable in the data. In addition, although the last year of preschool was not mandatory until 1993, attending one year of kindergarten was quite the norm earlier. Therefore, here it is assumed that all children had attended it. Hence, in the above scenario, the entire span of schooling attainment would amount to 13 years. Hence, schooling gap is computed as the age at the time of the interview minus the years of schooling, minus the normal school starting age, where the last set at five years corresponded to a child entering school to attend one year of kindergarten. For example, for a 15 year-old boy who has achieved eight grades of education, 9 years of schooling are computed; thus assuming 5 years of age as mandatory to attend preschool implies one year of schooling gap.

regression coefficient because they are sensitive to these coding decisions (Hertz et al. 2007). This education variable is categorical; according to the survey seven levels of parents' education are defined herein. A word of caution has to be done at this point regarding parental covariates. The *EPH* define relationships within the family regarding individual's relationship with the household head only, so fathers/mothers are defined herein as a man/woman who already is the household head for the children's family. Hence, for each child it is not possible to define both parents' education level. The spouse of the household head is already identified in the survey, but it is not possible to determine if she/he is the mother or the father of the children in that family. For capturing the effect of those household head's partners on a child's schooling performance, herein it is defined their education level also. Although it is very much probable that they already are the parents of the family's children, it is not possible to assure it, so herein their influence on children's educational achievement is evaluated separately.

There is some empirical evidence that attending private schools improves the schooling performance of the children in Argentina (Navarro 2010). Moreover, the type of school the child attends (private or public) reveals the socioeconomic level of the family during children's early schooling age. Since the family income -captured here by the per capita family income- usually suffers from measurement error when using survey data the type of school the child attends (private or public) is added as a covariate.

Taking in account the above warning about how parents are defined in the present study, the age of each one is included also as a control variable. Other variable actually included in vector C_h are the number of other children in the household (siblings and social siblings). There is also added the age of the children because children's schooling gap is intrinsically linked with children's age. For instance, if the normal school starting age is five in preschool, a seven year old child can not have an educational delay longer than three years, but a twelve year old can have a delay up to eight years and a seventeen year old who has not even attended preschool will have missed thirteen years of schooling time.

It is difficult to believe that the schooling gap for the children belonging to the same family is truly independent since siblings who are growing up together share the same family background. So, educational achievement data on children sampled from many households form a cluster sample. So, since the outcomes within a cluster are likely to be correlated, the LS estimation done in this paper uses a robust estimator of the variance.

To assess the effect of the PJH subsidy on the schooling gap of the children it is necessary to control for observable heterogeneity amongst the children. This is to obtain the impact of the programme regarding children whose families do not participate that are observationally similar to the participants. In the impact assessment literature, the best-case scenario is a random assignment of the treatment, conditional on certain observable characteristics, in some sort of possibly natural experiment. When a program is assigned randomly, by definition it generates two identical groups that differ only in their exposure to the program. In this case, using linear regression provides estimates consistent and unbiased.

However, PJH was not assigned randomly, it has a self-selection component. Beyond the program admission criteria, there were other reasons that determined people participation⁸. Some of them are related to observable characteristics. To control for these factors the literature usually use matching techniques (e.g., Galasso and Ravallion 2003, Gasparini et al. 2007). Following Rosenbaum and Rubin (1983), matching methods estimate the outcome without the program by taking weighted averages over outcomes for individuals who did not participate that are observationally similar to the participants in terms of their propensity scores defined as the probability of participating conditional on observed (predetermined) covariates X_i . Following Angrist and Pischke (2008), here in addition to the OLS estimation with the full sample, it is implemented the Crump, et al. (2006) approach by first estimating the propensity score on a pooled of EPH households -treated and not treated- and then picking only those observations with a predicted probability of treatment equal to at least 10 percent, but no more than 90 percent. This ensures that regressions are estimated with a sample including only covariate cells with there are at least a few treated and control observations. Descriptive statistics for EPH full and screened samples (screened on the score using the full set of covariates listed in the table) appear in Table 1.

⁸ Comparing household heads participants from the EPH with households satisfying the program's eligibility criteria Galasso and Ravallion (2003) find that about one third of those receiving the program did not satisfy the eligibility criteria. And about 80% of those active individuals who were eligible (though not necessarily poor) did not receive the program.

Table 1. Data Descriptive Statistics						
	Treated Sample		Non Treated Sample		P -score Screened Sample	
Variable	Means	Standard Deviation	Means	Standard Deviation	Means	Standard Deviation
Children Schooling Years	5.74	3.14	6.41	3.37	5.80	3.18
Children Schooling Gap	0.96	1.53	0.64	1.38	0.74	1.28
Father Education Level	2.37	1.21	3.39	1.53	2.37	1.04
Mother Education Level	2.35	1.22	3.41	1.65	2.33	1.10
Partner Education Level	2.37	1.19	3.49	1.58	2.60	1.24
Beneficiarie PJH Main Occupation	0.62	0.48			0.21	1.28
Beneficiarie PJH Other Occupation	0.20	0.41			0.06	0.41
Beneficiarie PJH Unemployed	0.17	0.37			0.05	0.25
Family Total PJH Beneficiaries	1.05	0.25			0.35	0.51
Household Other Children	3.09	2.09	2.00	1.68	2.84	1.90
Per capita Household Income	92.31	192.90	233.04	304.97	121.88	167.76
Private School	0.04	0.21	0.26	0.46	0.04	0.21
No. Observations	3609		13878		9147	

Note. Data come from the Permanent Household Survey conducted by Argentina's National Statistical Agency, INDEC. The sample includes data surveys from the second quarter of years 2004-2006. The unit of analysis is a child between six and eighteen years of age still leaving with their parents. The samples in the last two columns are limited to observations with a propensity score between 0.1 and 0.9. Propensity score estimates use all the covariates listed in the table and the labour status of the household head.

Source. Own calculations based on EPH.

Table 1 show the covariate means in the screened sample are much closer to the EPH treated sample means in column 1 than are the covariate means from the unscreened sample.

Estimations

In this section, the results of applying the linear model in Eq. (1) are reported. Several different specifications are estimated to detect the effect on children's educational performance, measured by the average years of missing schooling time, growing in a family where parents receive an assistance program. The results are shown in Tables 2-4. Tables 2-3 display the OLS results using the unscreened sample. Table 4 show OLS results using the propensity-score screened sample.

Table 2. Estimates of household's enrolment in PJH on children schooling gap			
Schooling Gap			
	Model 1	Model 2	Model 3
PPJH	0.367*** (0.031)		0.117 (0.120)
Ac	0.148*** (0.003)	0.148*** (0.003)	0.148*** (0.003)
PJH ₁		0.329*** (0.036)	
PJH ₂		0.273*** (0.063)	
PJH ₃		0.586*** (0.088)	
NPJH			0.236*** (0.109)
Observations	17487	17487	17487
Number of Clusters	9871	9871	9871
R squared:	0.148	0.148	0.148

*** p<0.01, **p<0.05, *p<0.10

Note. This data come from the Permanent Household Survey (Encuesta Permanente de Hogares, EPH) conducted by Argentina's National Statistical Agency, INDEC. The sample includes data surveys from the second quarter of years 2004-2006. The unit of analysis is a child between six and eighteen years of age still leaving with their parents.

Source. Own calculations based on EPH.

Table 2 presents the unconditional effect of the aid. Model 1 uses children's schooling gap as the dependent variable and a dummy that captures whether any member of the family participates in the program or not (PPJH), as the independent. There is also added the age of the children.

The variable of interest PPJH shows a positive coefficient ($\beta = 0.36$) and is statistically significant at a 1%. This result imply that a child growing up in a household where some member receives a PJH will lag behind the corresponding schooling for his age by more than one third of a schooling year regarding any other children whose family does not perceive this social assistance. As expected for the age of the children, the positive coefficient indicates that the education gap increases with the age and is statistically significant at a 1%. Table 2 also presents the estimated results of Model 2 where the variable of interest PPJH is replaced by three dummies that capture whether some member in the family gets a PJH in their main occupation, in their second occupation or being either unemployed or not belonging to the labor force at all. The results shows that in every case the effect of the social assistance is an enlargement of the children's schooling gap regarding the child whose family do not have any kind of PJH (the base group) being all the coefficients statistically significant at a 1%. The largest coefficient corresponds to the third case (PJH₃), that is the one corresponding to being unemployed or out of the labor force and perceiving a PJH subsidy. The result suggests that when the member that receives the plan is unemployed or is out of the labor force, the effect on children's schooling gap exceed half year.

These results may be a signal of a phenomenon that broadly can be named as "losing the studying effort culture". Although the program had been thought as a short term safety net, the subsidy was established for an unlimited period of time. The exit clause -getting a job in the formal sector- was eluded by the beneficiaries by getting informal jobs as the economy recovered. This sort of endless aid may gave the vulnerable families a feeling of entitlement to get a social aid that acts as a safety net protecting them from the worst consequences of a negative shock. Consequently the children learn to be confident that the government will take care of them when adults. So, children educational achievements may lose some of its long term value as an investment in human capital to improve individual conditions in the labor market. If this is the case, it is reasonable to expect neither the children nor the parents will care much about children schooling performance when the family gets a subsidy. It is also possible that the student discouragement effect gets large with more subsidies per family. To test this hypothesis it is added in Model 3 the covariate "number of PJH" (NPJH) and the model is estimated without the dummies

corresponding to a different individual's condition regarding the reception of the PJH to avoid multicollinearity. The results are shown in Table 2. As it is shown the coefficient of NPJH is positive ($\beta= 0.23$) and statistically significant at a 1% denoting an enlargement of the schooling gap but it is apparent that this variable is capturing the effect of having a program which turns statistically not significant here.

In Table 3 it is shown the results of successively adding other covariates for controlling parents and household characteristics. There are six regression presented in Table 3, two including all families, two for families whose household head is a male ("father families") and two for families whose household head is a female ("mother families"). All of them include children's age, parental age, number of children in the household (siblings or social siblings), the per capita family income and a dummy for capturing whether a child attends public or private school, as controls.

Schooling Gap	Model 4					
	All Household Head		Male Household Head		Female Household Head	
PPJH	0.049 (0.031)		0.059* (0.032)		-0.109 (0.108)	
PJH ₁		0.054 (0.036)		0.069* (0.038)		-0.115 (0.114)
PJH ₂		-0.039 (0.055)		-0.006 (0.059)		-0.371** (0.162)
PJH ₃		0.119 (0.84)		0.094 (0.089)		0.047 (0.225)
Household Head Schooling Level	-0.022** (0.010)	-0.022** (0.010)				
Father Schooling Level			-0.013 (0.010)	-0.013 (0.010)		
Mother Schooling Level					-0.106*** (0.035)	-0.105*** (0.035)
Spouse Schooling Level	-0.050*** (0.009)	-0.050*** (0.010)	-0.050*** (0.010)	-0.050*** (0.010)	-0.048 (0.035)	-0.048 (0.034)
Per Capita Familiar Income	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
Private School	-0.151*** (0.026)	-0.152*** (0.026)	-0.155*** (0.027)	-0.156*** (0.027)	-0.108 (0.090)	-0.117 (0.091)
Other Controls						
Children Age	yes	yes	yes	yes	yes	yes
Household Head Age	yes	yes				
Father Age			yes	yes		
Mother Age					yes	yes
Number of Children	yes	yes	yes	yes	yes	yes
Observations	13137	13137	12079	12079	1077	1077
Number of Clusters	7564	7564	6990	6990	583	583
R squared:	0.141	0.141	0.135	0.135	0.210	0.213

*** p<0.01, **p<0.05, *p<0.10

Note. Data come from the Permanent Household Survey conducted by Argentina's National Statistical Agency, INDEC. The sample includes data surveys from the second quarter of years 2004-2006. The unit of analysis is a child between six and eighteen years of age still leaving with their parents.

Source. Own calculations based on EPH.

Controlling for those household characteristics makes statistically no significant the effect of having a PJH in the family in the estimation of every type of families (both mother an father families); similarly none of the covariates that captures the different cases of labor condition of the enrolled, show a statistically significant effect. However, splitting the sample into male household head families and female household head families show that gender matters. For the former, the effect of PJH is positive suggesting that having social aid somehow discourage children educational effort. The four estimation shows that this effect is explained by the case where the father is employed and receives a subsidy. Conversely, when mothers are the head of the household the children schooling effect of having a social aid is negative suggesting that a child whose mum enrolled in the program diminishes his educational gap. Looking to the specific effect of the enrolment in the program for each labour situation, the results show that growing in a family where

moms are the head of the household and receive subsidies as remuneration for her second activity, diminishes the schooling gap of a child ($\beta=0.37$). As expected, parental educational level exerts a beneficial effect on children educational achievements, but the effect of the corresponding covariates are statistically significant for women not for male parents. Mother's do affect children schooling performance reducing their schooling gap as her educational level is higher. This result is confirmed by the partners' educational coefficient which are also negative but it is only statistically significant for male spouses. The dummy variable for the type of school the child attends reveals that attending private school reduces the schooling gap of the children. Taking in account that the per capita family income has the same sign, but it is not economically or statistically significant, it is apparent that the former is somehow capturing the effect of the income level of the household. The coefficient for private school is negative in both type of families ("mother families" and "father families") but it is larger and statistical significant at 1% when men are the head of the household.

In Table 4 it is shown the results of applying OLS to a P-score screened sample. The sample is limited to observations with a propensity score between 0.1 and 0.9. For calculating propensity score it is used all the covariates listed in Table 4. It is also used the labour status of the head o the household. The program admission criteria requires being unemployed, but in practice the unemployment condition was difficult to monitor and the status of being unemployed was certified via a signed statement by the beneficiary. Since the only signal of unemployment status that could be reliably checked by the authorities was whether an individual was participating in the formal labor market, this is the criterion used here to calculate the propensity score.

Schooling Gap	Model 4					
	Any Household Head		Male Household Head		Female Household Head	
PPJH	0.011 (0.034)		0.020 (0.036)		-0.144 (0.113)	
PJH ₁	0.012 (0.038)		0.023 (0.041)		-0.124 (0.121)	
PJH ₂	0.075 (0.061)		-0.027 (0.067)		-0.460** (0.163)	
PJH ₃	0.092 (0.094)		0.051 (0.103)		0.067 (0.221)	
Household Head Schooling Level	-0.053*** (0.019)		-0.052*** (0.019)			
Father Schooling Level			-0.041* (0.021)		-0.041* (0.021)	
Mother Schooling Level					-0.110** (0.053)	
Spouse Schooling Level	-0.062*** (0.015)		-0.059*** (0.018)		-0.062 (0.044)	
Per Capita Familiar Income	-0.000*** (0.000)		-0.000** (0.000)		-0.000 (0.000)	
Private School	-0.194*** (0.069)		-0.195*** (0.069)		-0.199** (0.088)	
Other Controls					-0.201** (0.088)	
Children Age	yes	yes	yes	yes	yes	yes
Household Head Age	yes	yes	yes	yes	yes	yes
Father Age						
Mother Age						
Number of Children	yes	yes	yes	yes	yes	yes
Observations	7040	7040	5695	5695	820	820
Number of Clusters	7559	7559	2824	2824	420	420
R squared:	0.175	0.175	0.173	0.173	0.212	0.214

*** p<0.01, **p<0.05, *p<0.10

Note. Data come from the Permanent Household Survey conducted by Argentina's National Statistical Agency, INDEC. The sample includes data surveys from the second quarter of years 2004-2006. The unit of analysis is a child between six and eighteen years of age still leaving with their parents. The samples in the last two columns are limited to observations with a propensity score between 0.1 and 0.9. Propensity score estimates use all the covariates listed in the table and the labour status of the household head.

Source. Own calculations based on EPH.

Comparing the results in Table 3 and Table 4 it is apparent that in the broad sense the two estimation strategies present quite similar results. Those children that happen to live in a family where the father is the head of the household and someone in the family is enrolled in the PJH program present a larger educational delay regarding others otherwise identical to them. Though there is a difference here because these results are no longer statistically significant. Conversely, those living with a woman as household head, show a beneficial effect when their mothers has a plan associated with her second activity. This effect is statistically significant at the one percent level. Using this small screened sample it is noticed that all the covariate effects that are statistically significant becomes larger than using the non selected sample. In particular the beneficial effect of having a mother who gets the program in her second occupation becomes much larger when using the screened sample ($\beta=0.46$). This is also the case for the educational level of children's fathers. This covariate triples regarding the value obtained using the full non-screened sample, and becomes statistically significant.

Concluding Remarks

This paper explores the effect on the schooling performance of children growing in a family where some of the adult members are enrolled in the Argentinean major safety net called Program for Unemployed Heads of Households. Based on a sample of pooled household surveys for the period 2004-2006, the estimations unveil that the favourable or harmful effect depends on the gender of the head of the household.

Unconditionally, a child that lives in a family who receives one or more subsidies (PJH) will lag behind other child in the school who is growing in a family not covered by this safety net; the larger effect corresponding to children's parent or children's familiar enrolment while unemployed. Controlling for parents and families observable characteristics do not change the direction of these effect but turns them not significantly different from zero. However, it matters who is the head of the family. Growing in a family where moms are the head of the household and receive subsidies as remuneration for her second activity, diminishes the schooling gap of a child, being the coefficient significantly different from zero. However, those children that belong to a family where a man is the head of the house, experiment an enlargement of the schooling gap if the family gets a subsidy. As expected parental education exerts a positive influence on children educational achievement, but mums are more influential than fathers.

In a broad sense, those above results are quite similar to the obtained using a small screened sample of individuals selected for being very much like the ones that were enrolled into the program. The P-score screened sample results confirm that when mums are the heads children do not lose the "culture of effort" as happen to be when men are the heads. Differences between mothers and fathers resemble gender differences in the long term effect of public training assistance shown in Lalonde (1995). In addition, if the child is lucky enough to attend a private school she will have a drop in her schooling gap, which will counteract the PJH negative effect for children growing in "father families". As expected parental education exerts a positive influence on children educational achievement, but mums are more influential than fathers.

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Do You Trust Me? The Impact of User and Critical Reviews on Box Office Revenues

Student Paper-in-Progress

Andrew Nunn

MBA (Expected August 2011)

University of North Florida

Introduction

Consumers face many entertainment options today. By their very nature, entertainment options are experience goods, or goods for which the value is not known until the good is consumed. Films are one of the most prominent entertainment options. Consumers who are interested in watching a film must first decide whether or not to watch a particular film. After choosing to watch a film, modern consumers have many ways to experience a film. For instance, consumers can access a film via digital download, rentals, DVD/Blu-ray purchases, cable television, and theaters. While these alternative ways of viewing films may negatively impact box office sales, Josefowicz, Kelley, and Brewer (2008) find that box office gross revenues positively and significantly relate to film rental success. Lehmann and Weinberg (2000) find that the optimal time to release a home video depends on the opening strength and decay rate of a film, both of which are determined early in a film's theatrical run. This study examines how critic and online user reviews impact the consumer's decision to go to the movies, how the impact of user reviews differs from the impact of critic reviews, and when each type of review is important during the film's theatrical release.

The motion picture industry in America is one of the largest entertainment industries in the world, selling 1.4 billion tickets in the United States and Canada (MPAA 2009). The Motion Picture Association of America (MPAA) reports that in 2007, 2008, and 2009 domestic box office is \$9.6 billion, \$9.6 billion, and \$10.6 billion respectively. In 2009, the motion picture industry sold 1.42 billion tickets in the United States and Canada with theater attendance rising by 5.5% from 2008. Clearly, movies are an important source of popular entertainment.

Films are a perfect example of a high risk/high return investment. Not only are films expensive to produce but the costs do not end with production. In 2007, the MPAA reports the average film costs \$70.8 million to produce, with an additional \$35.9 million spent on marketing. But films are not just expensive to make: a single film also carries a tremendous weight of a studio's revenues. Joshi and Hanssens (2009) find that a single film can have a potentially large impact on the annual profit of the studio. In 2009, the top five studios, which represent 72.1% of the market, released between 13 and 28 films (Box Office Mojo Table 1). Considering the impact of a single film on a studio's profits, studio management would surely want to uncover why consumers go to the movies.

Table 1: 2009 Studio Market Share and Number of Films Released

Distributor	Market Share	Total Gross (in millions US \$)	2009 Films
Warner Bros.	19.8%	\$2,105.70	28
Paramount	13.9%	\$1,476.10	13
Sony / Columbia	13.7%	\$1,456.20	21
20th Century Fox	13.1%	\$1,394.50	16
Buena Vista	11.6%	\$1,228.80	18
Total	72.1%	\$7,661.30	96

However, the motion picture industry faces some significant long term attendance problems. While the MPAA (2009) reports that while theater sales and attendance in 2009 reached the highest totals in five years, theater

attendance has declined in six of the last ten years. Smith (2008) attributes the motion picture industry's theater attendance problems with consumers' increased options to view films: some consumers are choosing not to attend movie theaters but to stay home and enjoy the films using new technology. Netflix and RedBox offer movie rentals at significantly lower prices than theaters, causing some consumers to wait for the DVD release. HDTVs, digital rentals, TiVo, and On-Demand provide consumers with several affordable tools to view films without leaving home. If movie theater sales are declining, why so we care about theater attendance? Opening weekend box office revenues, total box office revenues, and decay rates determine a film's success in film rentals (Josefowicz, Kelley, and Brewer 2008) as well as the optimal time for home video release (Lehmann and Weinberg 2000). While new technologies to view films are contributing to declines in theater attendance, theater attendance determines the success and timing of the release of films in these subsequent channels.

Consumers often use the opinions of others to guide their decisions regarding experience goods. Reinstein and Snyder (2005) find that expert reviews can be a tool for transmitting information about experience goods. This study looks at the combined effect of critic and user reviews, a distinction that is vital since the rise of social networking has increased the visibility of user reviews and offering a greater opportunity for user reviews to impact box office reviews. The essential research questions analyzed in this study are: 1. how and to what extent do critic reviews impact opening weekend box office revenues; 2. how and to what extent does the impact of user reviews on box office revenues differ from the impact of professional critic reviews over the life of a film's release.

How do consumers decide whether or not to go to the movie theater? According to Simmons (1994), one third of people go to a film because of a favorable critic review. Eliashberg and Shugan (1997) find that critic reviews are statistically significant predictors of cumulative box office. Professional film critics are "persons usually employed by newspaper, television stations, or other media who screen newly released movies and provide their subjective views and comments on the movie for the public's information" (Cones 1992). Advanced screenings are arranged for movie critics by studios, thereby allowing critics to view a film before its release in theaters. If negative reviews are expected, the studio will not screen the film, thereby delaying the bad news (Litwak 1986). Because of advance screenings, critics are able to write and publish reviews prior to a film's release. In addition, favorable quotes from critics are used in the advertising of movies and also give the critic name recognition (Cones 1992). Critics are the only measure of quality available when a film opens. Consumers depend on the skillful ability of film critics to judge the merits of a film.

Before the proliferation of the internet, critic reviews were the only widely circulated measure of quality of a film available to consumers. After the opening weekend of a film, consumers could share their opinions with their relatives, friends, and colleagues but there was no way for a consumer across the country to share their opinion of a film with another consumer that they did not already know. Today, consumers have several options for sharing their opinions on a film online, creating a new subset of word of mouth: online word of mouth. A user is an individual who viewed a film and wishes to share their opinion online. Major websites like IMDB.com and RottenTomatoes.com attract millions of visitors each day, and encourage visitors to rate films on the website. Social networking sites such as Facebook and Twitter allow users to share their opinions with their online networks. According to Alexa.com, Facebook, Twitter, and the Internet Movie Database (IMDB) are the 2nd, and 9th, and 25th most visited websites in the U.S. respectively.

Considering the increased visibility of word of mouth, the question for movie studios and theater owners becomes which moviegoers are using these online user reviews and how much impact do these reviews have on ticket sales outside of the opening weekend. In addition, are they more important than critic reviews? Duan, Gu, Whinston (2008) find that both a movie's box office revenue and word of mouth valence significantly influence word of mouth volume. Word of mouth volume in turn leads to higher box office performance. These results highlight the importance of word of mouth in generating and sustaining retail revenue. Dellarocas, Zhang, and Awad (2007) find that adding online user reviews to a model that includes pre-release marketing, theater availability and professional critic reviews substantially increases its forecasting accuracy. Dellarocas, Zhang, and Awad (2007) also explores the question of how well online user reviews correlate with critic reviews. They find relatively low correlation between the two types of reviews, which stresses the importance of examining user reviews as a predictive tool. They also find that user reviews appear to be complementary to critic reviews.

If the user reviews do appear to matter, is it possible to gain insight into who are writing and using these reviews? To answer the question of which moviegoers are using online reviews, we note that 52% of tickets sold in 2009 were purchased by moviegoers aged 18-49 (MPAA). Moviegoers aged 50+ only represent 19% of ticket sales. The remaining 28% of moviegoers are below the age of 18, which are primarily the children of the 18-49 age group.

As reported by the Pew Research Center, 95% of 18-29 year olds use the internet in the U.S., while 87% of population aged 30-49 uses the internet. These numbers drop off in the older age categories of 50-64 and 65+, which are 78% and 42%, respectively. Dellarocas, Zhang, and Awad (2007) find that the demographics of online users writing film reviews in their study are disproportionately young males under the age of 30. While these demographic statistics do not provide a conclusive picture who is writing and reading online user reviews, it is clear that the internet has allowed word of mouth to expand beyond the confines of local networks. The opinions of consumers have greater visibility than they ever have and as such have greater potential to impact box office performance.

Numerous studies analyze critic reviews and online/offline word of mouth, but the results thus far have been inconclusive. Eliashberg and Shugan (1997) find that critic reviews during the opening weekend are statistically insignificant, but become significantly correlated with late box office revenues as well as total box office revenues. Basuroy, Chatterjee, and Ravid (2003) find that for the first eight weeks both positive and negative critic reviews are significantly correlated with box office revenue. They find that negative critic reviews hurt early box office revenues more than positive critic reviews help early box office revenues. They also find that stars and budgets moderate the impact of critic reviews. De Vany and Walls (1999) finds that consumer word of mouth is the most important determinant of the long term success of a film. Thus, a conclusive answer to the questions of which type of reviews matters more and when does each type of review matter remains unknown. This study aims to further the research by providing answers to those very questions.

Literature Review

Relevant literature analyzes box office revenues over three distinct time periods: short-term, long-term, and over time. Short-term box office revenues are usually measured by looking at opening weekend box office revenues. Several studies use opening box office revenue as the dependent variables in their models (Elberse and Eliashberg 2003; Elliott and Simmons 2008; Basuroy, Chatterjee, and Ravid 2003; Eliashberg and Shugan 1997; Reinstein and Snyder 2005; Duan, Gu, Whinston 2008; Joshi and Hanssens 2009). Long-term box office revenues are typically measured by looking at total box office revenues. Many studies use total box office revenue as the dependent variables in their models (Elliott and Simmons 2008; Sawhney and Eliashberg 1996; Reinstein and Snyder 2005; Duan, Gu, and Whinston 2008). Several study also track box office revenues weekly over time (Elberse and Eliashberg 2003; Eliashberg and Shugan 1997; Dellarocas, Zhang, and Awad 2007; De Vany and Walls 1999).

Some literature also uses multiple models to look at box office revenues over the short and long term. These studies use both opening weekend box office revenues, as well as total box office revenues (Elliott and Simmons 2008; Reinstein and Snyder 2005; Duan, Gu, Whinston 2008). This study uses both opening weekend and total box office revenues. Both short and long term measures are used because of the nature of the timeliness of critic and online user reviews. Since only critic reviews are available when a film is released, online user reviews are not relevant in the beginning of a film's release. In order to study the impact of both critic and online user reviews, short and long term models are necessary. I add to the literature because I look at the impact of critic reviews over both the opening weekend and combine the impact of online user reviews with critic reviews over the total theatrical run, looking at not only if the type of review is significant but how time changes the impact of the different types of reviews. See Table 5 for the use of critic reviews and user reviews in previous studies.

Table 2
Studies of Professional Critic Reviews and User Reviews

Study	Country, Time Period, Sample Size	Box Office Category
<i>Professional Critic Reviews</i>		
Basuroy, Chatterjee, and Ravid (2003)	US, 1991-93, 162	Opening
Elberse and Eliashberg (2003)	US, 1999, 164	Opening and Weekly
Eliashberg and Shugan (1997)	US, 1991-92, 56	Opening and Weekly
Elliott and Simmons (2008)	UK, 1999-2003, 527	Opening and Total
Joshi and Hanssens (2009)	US, 1995-98, 200	Opening
Reinstein and Snyder (2005)	US, 1999, 609	Opening and Total
Sawhney and Eliashberg (1996)	US, 1990-91, 101	Total

User Reviews

Dellarocas, Zhang, and Amad (2007)	US, 2002, 80	Weekly
De Vany and Walls (1999)	US, 1984-96, 2,015	Weekly
Duan, Gu, and Whinston (2008)	US, 2003-04, 71	Opening and Total

Results are somewhat mixed on whether critic and online user reviews are important and when they are important when analyzing box office revenues. With regard to critic reviews, Elberse and Eliashberg (2003) find that critic reviews are strongly positively correlated with opening weekend box office revenues while Elliott and Simmons (2008) find similar results between critic reviews and total box office revenues. Basuroy, Chatterjee, and Ravid (2003) find that negative critic reviews hurt revenues more than positive critic reviews help revenues during the first eight weeks of release. Eliashberg and Shugan (1997) find that critic reviews are statistically significant in predicting revenues both in the short run (within 5-8 weeks of release) and long-run (total box office revenue). Sawhney and Eliashberg (1996) find that positive critic reviews increased total box office revenue. However, Reinstein and Snyder (2005) find that only a “two thumbs up” was marginally statistically significant, and that critic reviews had the strongest impact on narrow release and drama films. Joshi and Hanssens (2009) find that critic reviews do not have a statistically significant impact on cumulative excess returns on stock of movie companies.

Looking at the previous literature for user reviews, Duan, Gu, and Whinston (2008) find that the volume of user reviews has more impact on box office revenues than the valence of user reviews, but that the valence of user reviews significantly influences the volume of user reviews. Dellarocas, Zhang, and Awad (2007) find that online user reviews substantially increase the forecasting accuracy of both opening weekend and total box office revenues while De Vany and Walls (1999) find that consumer word of mouth is the most important determinant of the long term success of a film.

Previous research is mixed when surveying the types of models used. Duan, Gu, and Whinston (2008) use a three-stage OLS regression. Elliott and Simmons (2008) use a three-stage OLS regression with bootstrapping errors. Reinstein and Snyder (2005) use five-stage OLS regression. Sawhney and Eliashberg (1996) use three stepwise regressions. Duan, Gu, Whinston (2008) uses a log-log regression model with fixed effects using movie specific dummy variables. Basuroy, Chatterjee, and Ravid (2003) use a time-series cross-sectional regression. Dellarocas, Zhang, and Awad (2007) use a hazard model. Both models include control variables for release dates (dummy variables that categorize the season a film is released), MPAA rating (G, PG, PG-13, R) and genre (i.e. Comedy, Drama, Kids, etc.).

This study uses a two stage OLS linear regression model due to the timing of critic and online user reviews. Critic reviews are available before a film is released, and are included in both stages (opening weekend box office revenue and total box office revenue). Online user reviews are not available initially, and are included in only the second stage (total box office revenue). Dellarocas, Zhang, and Awad (2007) use two hazard models to predict box office revenues. They use one model that contains critic reviews, and another that contains both critic reviews and user reviews. Two models are used to show how the addition of user reviews to the model make vastly superior predictions of box office revenues.

Previous literature usually analyzes critic and online user reviews in isolation of each other, choosing to measure the effects of one or the other. Online user reviews are a relatively new topic to the literature, and provide a way for word of mouth to be quantified and easily studied. Dellarocas, Zhang, and Awad (2007) mention that word of mouth has been changed from where opinions “disappear into thin air” to be persistent on online websites. This study provides exciting new ways to analyze the impact of word of mouth. With the increased visibility of online word of mouth, this paper adds to the literature by measuring the impact of both critic and user reviews of box office revenues, measuring the impact of online user reviews relative to the impact of critic reviews, and determining when critic and online user reviews matter to the consumer.

In conclusion, I use three variables to control for the different tastes of moviegoers: genre, MPAA rating and season of release. Several studies control for the type of film by using genre (Sawhney and Eliashberg, 1996; Elliott and Simmons, 2008; Reinstein and Snyder, 2005; De Vany and Walls, 1999; Dellarocas, Zhang, and Awad, 2007). Several studies have used MPAA rating as a control variable (Basuroy, Chatterjee, and Ravid, 2003; Sawhney and Eliashberg, 1996; Elliott and Simmons, 2008; De Vany and Walls, 1999; Dellarocas, Zhang, and Awad, 2007). Finally, Basuroy, Chatterjee, and Ravid (2003) and Elberse and Eliashberg (2003) control for the effect of the timing of the release of a film. These variables control for the various aspects of moviegoer’s tastes.

Method

Sample Selection and Data Collection

From 2000-2004, 2,352 films were released in the U.S. (MPAA). This study focuses on the U.S. motion picture industry because the industry is the largest and most influential film industry in the world. NC-17 films and documentaries are excluded from the model. NC-17 rated films account for less than 10 of the 2,352 films released during 2000-2004. Documentaries typically have limited releases with only four of the documentaries in the sample having a wide release. The sample is trimmed to include films with total box office performance of between \$50,000 and \$300,000,000. By eliminating extremely limited release films and record breaking blockbusters (outliers), I obtain a more robust statistic—the study contains typical films that better represent the industry average. I find consistent data for 1,013 films released from 2000-2004.

On the demand side, I have U.S. opening weekend box office performance and U.S. total box office performance. My focus variables are professional critics' review score, and online users' review score. As well as these quality indicators, I have a set of control variables to capture the type of movie, genre and MPAA rating, as well as a control variable to capture the effect of timing of release, season.

U.S. opening weekend box office performance and U.S. total box office performance are collected from BoxOfficeMojo.com. BoxOfficeMojo.com is the number one worldwide box office site, and is used by major news outlets such as Los Angeles Times, Wall Street Journal, USA Today, Bloomberg, and Forbes. Average ticket prices change each year and these fluctuations can cause price inconsistencies. For 2000-2004, ticket prices were \$5.39, \$5.66, \$5.81, \$6.03, and \$6.21, respectively. 3D digital films have higher than usual ticket prices. Since only four 3D films were released during 2000-2004, the higher 3D ticket prices do not skew the results. Adjusting tickets prices for inflation does not fully eliminate price inconsistencies. Instead, BoxOfficeMojo.com removes price inconsistencies by adjusting all box office performance data to 2010's average ticket price of \$7.95.

The study uses two different types of quality scores, one based on professional critic reviews and the other based on user. The use of these two different quality scores is because with the rise of social networking, moviegoers are no longer restricted to only trusting the professional critic. Moviegoers now have resources available to share their opinions with other consumers. Since user reviews are not available in the opening weekend of a film's release (i.e. the public has not had a chance to see the film), professional critic reviews are regressed against the film's opening weekend revenues. The question then becomes if professional critic reviews and/or user reviews are relevant to moviegoers over the long-term release of a film.

Critic review score for each film was obtained from Metacritic.com. Metacritic.com is an online database that provides users with a metascore for a film, or "a weighted average of reviews from top critics and publications for a given movie." The more highly regarded a critic or publication is within the industry, the more weight on the metascore the source has. Professional critics' review scores are on a 0-100 scale.

Online users' review score from each film was collected from IMDB.com. IMDB.com is the largest user film database on the internet, and provides users with the opportunity to rate films they have seen. The users' review scores are 0.0-10.0 scale, which has been converted to a 0-100 scale for the model. The conversion was made to keep critic review and online user review scores on a uniform scale.

Based on previous literature, I control for the different tastes of moviegoers by using control variables for the type of movie (genre and MPAA rating) and the timing of the release of the movie (season).

Model

This study uses a two-stage OLS linear regression model. The OLS linear regression model has several advantages. The regression analysis identifies the relationship between the dependent and independent variables, quantifies the effect that changes in the independent variable have on the dependent variable, and identifies unusual observations. However, there are disadvantages to OLS linear regression models. The regression analysis assumes there is a linear relationship between the independent and dependent variable and that the effect an independent variable has on the dependent variable is statistically independent of other independent variables in the model.

I add to the literature by examining the relationship between opening weekend revenues and total gross revenues and both critic and online user reviews, finding if reviews are important and when each type of reviews is important.

I first regress the control variables with *CriticRating* on *USOpenWeekend* using equation (1).

$$(1) \quad USOpenWeekend = \alpha + \beta_1 Spring + \beta_2 Summer + \beta_3 Fall + \beta_4 Winter + \beta_5 G + \beta_6 PG \\ + \beta_7 R + \beta_8 ActAdven + \beta_9 Comedy + \beta_{10} HorrorSuspense + \beta_{11} Kids \\ + \beta_{13} SciFiFantasy + \beta_{14} CriticRating + \varepsilon$$

I then regress the control variables with *CriticRating* and *UserRating* on *USTotalGross* using equation (2).

$$(2) \quad USTotalGross = \alpha + \beta_1 Spring + \beta_2 Summer + \beta_3 Fall + \beta_4 Winter + \beta_5 G + \beta_6 PG \\ + \beta_7 R + \beta_8 ActAdven + \beta_9 Comedy + \beta_{10} HorrorSuspense + \beta_{11} Kids \\ + \beta_{13} SciFiFantasy + \beta_{14} CriticRating + \beta_{14} UserRating + \varepsilon$$

Variables

Based on prior research, I calculate and test a series of quality indicators and control variables which may explain my demand side dependent variables, *USOpenWeekend* and *USTotalGross*. *USOpenWeekend* is defined as a film's U.S. opening weekend box office revenue in millions of US\$. *USTotalGross* is defined as a film's U.S. total box office revenue in millions of US\$. Descriptive statistics are shown in Table 2.

Table 3 Descriptive Statistics

Variable Name	Mean	Minimum	Maximum	Standard Error
USOpenWeekend	12.26	0.004	112.80	16.49
USTotalGross	44.68	0.050	291.88	56.93
CriticRating	49.38	6.000	94.00	17.72
UserRating	60.56	14.000	86.00	11.30

I first look at the effect of the quality variable *CriticRating* on *USOpenWeekend*. In the second model, I regress both quality variables, *CriticRating* and *UserRating*, on *USTotalGross*. Professional critic reviews are available before the release of the film as well as during its entire run. User reviews, however, are not initially available because the public has not had a chance to view and post a review a film.

CriticRating is the weighted average of professional critic reviews, using a scale of 0-100. Based on previous literature (Elberse and Eliashber, 2003; Basuroy, Chatterjee, Ravid 2003; Eliashberg and Shugan, 1997), I expect the higher the professional critic review score, the higher the U.S. opening weekend office revenue will be.

Eliashberg and Shugan (1997) note that the influence of critic reviews should diminish over time because reviews from other sources become available. Reinstein and Snyder (2005) and Joshi and Hanssens (2009) predict marginal or statistically insignificant results. Elliott and Simmons (2008) and Sawhney and Eliashberg (1996) predict a statistically positive effect. Given the mixed results on the effect of critic reviews on the cumulative box office revenue, I do not have a prediction for the effect of critic reviews on U.S. total box office revenues.

The next quality variable is *UserRating* which I define as the average of on-line user ratings, on a scale of 0-100. Based on previous literature (Duan, Gu, and Whinston (2008); Dellarocas, Zhang, and Awad (2007); De Vany and Walls (1999)), I expect a positive coefficient for *UserRating*.

I use the three variables to control for the different tastes of moviegoers: genre, MPAA rating and season of release. I code the six genre categories (Action/Adventure, Comedy, Drama, Horror/Suspense, Children, and Science Fiction/Fantasy) as defined by RottenTomatoes.com. *Drama* is the omitted category. Data are collected from RottenTomatoes.com. RottenTomatoes.com is a large database of films, and features reviews. For films that fall into more than one genre, the film is categorized using its main genre. The main genre is simply the first genre into which the film is categorized by RottenTomatoes.com. For example, *Finding Nemo* is categorized as a children film, instead of a children and comedy film. This method of genre classification allows a film to be analyzed under its primary audience, and not skewing results with secondary or tertiary genres.

The MPAA utilizes five ratings, which include G, PG, PG-13, R, and NC-17. *PG13* is the omitted category. A film may also be classified as Not Rated if the film is not submitted for rating by the MPAA. The

MPAA rating for each film was collected from IMDB.com. IMDB.com is a popular online film database, with over 57 million unique visitors each month.

In the film industry, there are five seasons of release: Winter (the first day after New Year's week or weekend through the Thursday before the first Friday in March), Spring (the first Friday in March through the Thursday before the first Friday in May), Summer (the first Friday in May through Labor Day Weekend), Fall (the day after Labor Day Weekend through the Thursday before the first Friday in November) and Holiday (the first Friday in November through New Year's week or weekend). *Holiday* is the omitted category. The season of release for each film is obtained from BoxOfficeMojo.com.

Table 4

Variable Name	Variable definition
USOpenWeekend	Measures US opening weekend box office gross for a film, in millions of US\$
USTotalGross	Measures US total box office gross for a film, in millions of US\$
CriticRating	measures a weighted average review score from professional film critics (both online and offline), scale 0-100
UserRating	measures an average review score from online users, scale 0-100
Seasonal	
Winter	dummy variable for films released from the first day after New Year's week or weekend through the Thursday before the first Friday in March
Spring	dummy variable for films released from the first Friday in March through the Thursday before the first Friday in May
Summer	dummy variable for films released from the first Friday in May through Labor Day weekend
Fall	dummy variable for films released from the day after Labor Day Weekend through the Thursday before the first Friday in November
Holiday	dummy variable for films released from the first Friday in November through New Year's week or weekend
MPAA Rating	
G	dummy variable that categorizes the MPAA rating of a film
PG	dummy variable that categorizes the MPAA rating of a film
PG-13	dummy variable that categorizes the MPAA rating of a film
R	dummy variable that categorizes the MPAA rating of a film
Genre	
ActionAdven	dummy variable that categorizes the genre of the film
Comedy	dummy variable that categorizes the genre of the film
Drama	dummy variable that categorizes the genre of the film
HorrorSuspense	dummy variable that categorizes the genre of the film
Kids	dummy variable that categorizes the genre of the film
SciFiFantasy	dummy variable that categorizes the genre of the film

Results

Table 4 provides the OLS results for the *USOpenWeekend* model and the *USTotalGross* model.

Table 5

Variable Name	USOpenWeekend			USTotalGross		
	β_i	SE	P-Value	β_i	SE	P-Value
Constant	7.079	2.090	0.001***	-17.260	11.650	0.137
CriticRating	0.069	0.028	0.014**	0.265	0.144	0.065*
UserRating	-----	-----	-----	0.942	0.231	0.000***
Spring	-0.430	1.517	0.777	-17.528	5.221	0.001***
Summer	2.788	1.357	0.040**	-3.600	4.708	0.445
Fall	-2.655	1.500	0.077*	-23.818	5.161	0.000***
Winter	0.341	1.766	0.847	-14.495	6.082	0.017**
G	-10.039	4.283	0.019**	-13.100	14.740	0.374
PG	-4.510	1.711	0.009***	-8.961	5.907	0.130
R	-7.961	1.047	0.000***	-32.492	3.611	0.000***
ActAdven	17.651	1.488	0.000***	52.462	5.127	0.000***
Comedy	5.661	1.151	0.000***	22.948	3.996	0.000***
HorrorSuspense	11.968	1.986	0.000***	39.524	6.851	0.000***
Kids	14.144	3.233	0.000***	50.520	11.180	0.000***
SciFiFantasy	17.394	2.376	0.000***	38.708	11.180	0.000***
	Adjusted R ² = 23.7%			Adjusted R ² = 24.2%		

***significant at 1%, ** significant at 5%, * significant at 10%

USOpenWeekend OLS Model vs. USTotalGross OLS Model

Consistent with previous literature (Elberse and Eliashberg 2003; Basuroy, Chatterjee, and Ravid 2003; Eliashberg and Shugan 1997), the results show that *CriticRating* is statistically significant and positively correlated with opening weekend revenues. In fact, if the professional critics' review score of a film increases by 1 point, all else equal, the U.S. opening weekend box office revenue of a film increases by \$68,840: critic reviews matter in relationship to opening weekend revenues for U.S. movies. In contrast to Eliashberg and Shugan (1997) who posit that the influence of critic reviews should diminish over time because reviews from other sources become available, the data show that the effect of critic reviews increases 286% over the entire theatrical run of the movie. This is an important result because the data show that critic reviews increase in importance over time in their relationship with box office revenues. Also, the results show that *CriticRating* is significant during both time periods. These results are not consistent with Reinstein and Snyder (2005) and Joshi and Hanssens (2009) who predict marginal or statistically insignificant results over longer time periods. It is consistent with the results of Elliott and Simmons (2008) and Sawhney and Eliashberg (1996).

I then look at the results for user review score of a film. The positive correlation between user review score and total box office revenues is consistent with the previous literature (Duan, Gu, and Whinston (2008); Dellarocas, Zhang, and Awad (2007); De Vany and Walls (1999)). The data show that if a user review score increases by 1 point, all else equal, then U.S. total box office revenue of a film increases by \$942,400. User reviews are strongly statistically significant.

Next, I compare how critic reviews and user review compare with each other over the theatrical release of a movie. One point increase in a user review score increases total box office revenues 263% more than a one point increase in a critic review score. This finding is very important, because it shows that while the value of critic reviews increases over time, they are not as important as user reviews over the long-term of the film's release. In other words, while both types of reviews have a positive impact on total box office revenues, user reviews have

more impact than critic reviews. We note the power of this result in the increase of adjusted R^2 from opening weekend (.237) to total theatrical run (.242).

I look briefly at the control variables to see if they are consistent with previous literature. In the case of genre, the expected results are mixed within the previous literatures with different studies finding different genres to be economically and statistically significant (Sawhney and Eliashberg 1996; Elliott and Simmons 2008; Reinstein and Snyder 2005; De Vany and Walls 1999; Dellarocas, Zhang, and Awad 2007). For instance, Sawhney and Eliashberg (1996) found action adventure films to be the most profitable genre of movies while Elliott and Simmons (2008) found horror films to be the most profitable genre of movies. The data show that action adventure movies have the greatest effect on revenues with an action/adventure film having \$17,651,000 (\$52,462,000) more in revenues than the U.S. opening weekend box office revenues (total box office revenues) for a drama film, on average all else equal. Perhaps the most surprising and important result in regards to genre is the jump in the effect of comedy movies from \$5,661,000 more in revenues for the U.S. opening weekend box office revenues than for a drama film to \$22,947,000 more in revenues for total box office revenues for a drama film, a 305% increase. Consistent with the previous literature, all categories of genre are statistically significant in both models.

Several studies have found MPAA rating to be significant in regards to box office revenues (Basuroy, Chatterjee, and Ravid 2003; Sawhney and Eliashberg 1996; Elliott and Simmons 2008; De Vany and Walls 1999; Dellarocas, Zhang, and Awad 2007). The data show that all MPAA ratings are statistically significant during the opening weekend with G-rated films having the smallest (negative) relationship to opening revenues when compared to drama movies. These results change over the total theatrical run of the movie with R-rated films having the smallest (negative) relationship to total revenues when compared to drama movies. In both models, drama movies have the greatest (positive) effect on box office revenues.

Finally, we find mixed results within the season variable with some seasons being statistically significant while others are not. The results are generally consistent with previous literature (Basuroy, Chatterjee, and Ravid 2003; Elberse and Eliashberg 2003).

Conclusion

The motion picture industry is one of the most prominent entertainment industries in the United States. Modern consumers after deciding to watch a movie must then decide which way they wish to experience watching a movie. Critic reviews and user reviews are vital tools to help consumers in their movie watching decisions. Traditionally, consumers only had the opinions of critics to guide their decisions regarding movies. With the rise of the internet and social networking, user reviews now offer consumers another guide regarding movie choices. This study examines not only how critic and online user reviews impact moviegoers' decisions how they differs from each other, and when each type of review is important during the film's theatrical release.

Other studies have looked at various aspects of box office revenues and their relationship to reviews. Some use opening revenues (Elberse and Eliashberg 2003; Elliott and Simmons 2008; Basuroy, Chatterjee, and Ravid 2003; Eliashberg and Shugan 1997; Reinstein and Snyder 2005; Duan, Gu, Whinston 2008; Joshi and Hanssens 2009) while others use total box office revenues as their dependent variable (Elliott and Simmons 2008; Sawhney and Eliashberg 1996; Reinstein and Snyder 2005; Duan, Gu, and Whinston 2008). Only their previous studies combine both time periods (Elliott and Simmons 2008; Reinstein and Snyder 2005; Duan, Gu, Whinston 2008). My two stage model tracks how time changes the relationship of the different types of reviews to both short and long term box office revenues.

In contrast to Eliashberg and Shugan (1997), this study shows that the effect of critic reviews increase over time and do not lose statistical significant despite the fact that other forms of information become available over the theatrical release of a a movie. Despite this large increase of 286%, effects of user reviews on total revenues are more than twice what they are for critic reviews. While the results agree with the general trends in the literature, my research dramatically clarifies the difference between professional critic reviews and on-line word of mouth reviews.

In conclusion, I look at how quality measures impact box office revenues in the short term and long term while controlling for type of movie and time of release using a two stage model. The model results suggest that user reviews and critic reviews have very interesting results that some would find interesting as new information because they clarify, and in some cases differ, from previous literature. The data suggest that with the rise of social networking and proliferation of the internet, moviegoers are paying more attention to the opinions of other moviegoers than the opinions of professional critics.

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Sustainability of the Newborn European International Investment Policy

Research-in-Progress

Prof. Dr. Antonio Pastor

Universidad Rey Juan Carlos

Campus de Vicálvaro

Madrid 28032 Spain

antonio.pastor@urjc.es;

antonio.pastor@maec.es

Tel.: 00341699323708

Abstract.

Since December 1, 2009, the European Union (EU) has a brand-new exclusive competence on foreign direct investment, attributed by the Lisbon Treaty in the historical context of the current global financial crisis as well as the European sovereign debt crisis. This paper highlights the main legal challenges for the EU and its Member States in order to deliver better foreign investment protection for European businesses. The topic merits considerable attention from a transatlantic perspective because EU companies are the largest investors in Latin America and the United States of America (US). The paper takes stock of the first steps taken by the European institutions, mainly related to international law problems, and explains the rationale underpinning a new investment policy.

Introductory test case: CAF-Houston METRO violation of US ‘Buy America’ regulations

On October 1, 2010, the US Federal Transit Administration (FTA) reaffirmed a previous September 7 decision (FTA Decision Letter, 2010) finding that CAF (an acronym for the Spanish company Construcciones y Auxiliar de Ferrocarriles) and Houston METRO had violated ‘Buy America’ requirements, when they entered into contracts to purchase Light Rail Vehicles for several federally funded projects (FTA Decision Letter, 2010). This FTA Decision Letter constituted the final administrative action on the matter and implied the termination of METRO contacts with CAF, as well as the development of a process of re-procuring the Vehicles in accordance with the law.

FTA understood that CAF USA was a wholly owned subsidiary of a Spanish corporation, so it was not treated as a US company in spite of the fact that it has a production facility in Elmira, New York (FTA Decision Letter, 2010). Thus, CAF is considered to be a company with the nationality of a European Union State: Spain. The transit agency also found that if a project includes federal funds “then the ‘Buy America’ requirements apply to the entire project and the grantees may not split contracts or add locally funded contracts to a project for purposes of avoiding federal Buy America requirements” (FTA Decision Letter, 2010). The normative content of ‘Buy America’ is established in federal law by saying that “no funds may be obligated by FTA for a grantee project unless all iron, steel and manufactured products used in the project are produced in the United States” (US Code, 2010).

CAF and Houston METRO reached a \$330 million contract in 2009 and wanted to produce pilot vehicles in Spain for sake of efficiency: CAF’s engineers reside in Spain. They had in vain requested the FTA for a public interest waiver to permit CAF to assemble those vehicles in Spain although CAF had certified compliance with ‘Buy

America'. It is well known that the US Administrator may waive the general requirements on a few grounds, such as inconsistency with the public interest. According to the federal officials, "after learning that FTA would deny their request for a public interest waiver", the grantees would have started working on a separate contract for purposes of avoiding the 'Buy America' requirements (FTA Decision Letter, 2010). For the FTA, METRO's unfair procurement giving CAF a competitive advantage against other potential offerors could have the effect of moving work from the US to Spain (FTA Report of Investigation, 2010).

Federal law also establishes the inapplicability of US international obligations in a 'Buy America'-related situation. (US Code, 2010). This statement should be read in the light of customary international law, which affirms that a State may not invoke the provisions of its internal law as justification for its failure to perform a treaty. In principle, there is a contradiction in terms between internal law and international law.

The purpose of this paper is not to review the legal validity and standing of the US administrative measures relevant to solve the present case, since it would imply to delve into some complicated US federal law issues. The foremost aim is to outline certain matters of fact and international legal elements concerning the CAF-Houston METRO case, that are useful for an academic analysis of the practical problems relating to the development and sustainability of a new European foreign investment policy, namely the following: the definitions of investment and/or investor, the international treaties of the EU member States affected by the new EU competence and, finally, the benefits of exclusive EU competence as regards the standards for investment protection. The latter point leads to the historical context in which the new investment policy is being created and the need to preserve financial stability in some European countries. Certainly, this study must refer to the package of measures the EU and the member States decided to preserve financial stability, in the wake of the crisis in Greece in the spring of 2010 (ECOFIN Conclusions, 2010) and some months later in Ireland (EUCO, 2010). In sum, it is necessary to address both the scope and the efficiency of the EU exclusive competence.

As for the research methodology, the object of this paper raises various interdisciplinary problems which have to be approached from the interaction between EU law and the international law of treaties. These problems not only concern the international Organisation (the EU), but also the 27 member States, third States and public or private foreign investors. Thus, economists and lawyers are bound to work together to assess the role of the EU in those legal issues of economic integration.

The scope of the EU competence

The definitions of investment and/or investor.

Is the CAF and Houston METRO contract a European investment? And, is CAF USA a foreign investor? The Lisbon Treaty provides no definition of foreign direct investment (FDI). Article 207 of the Treaty on the Functioning of the European Union, entered into force on 1 December 2009, states that "the common commercial policy shall be based on uniform principles, particularly with regard to (...) foreign direct investment".

From a bilateral perspective, article 23 of the US-Spain Agreement on Friendship, Defense and Cooperation, signed July 2, 1982 sets out that "the Parties will endeavour to adopt appropriate measures to facilitate, in accordance with their national legislation, direct capital investment in their territory that nationals of the other Party may undertake" (Complementary Agreement Seven, Economic Cooperation).

BITS and other international treaties affected by the new EU competence.

The efficiency of the EU competence

Uniform principles on protection standards of foreign investment.

The investment policy in front of the measures to preserve the European financial stability.

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Measuring Attitude toward Social Health Insurance

Completed Research Paper

Chung-Ping A. Loh

*Associate Professor of Economics
The University of North Florida*

Katrin Nihalani

*Professor of Economics
University of Applied Sciences Niederrhein*

Oliver Schnusenberg

*Associate Professor of Finance
The University of North Florida*

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Abstract

In order to understand the health care system a country chooses to adopt or the health care reform a country decides to undertake, one must first be able to measure a country's attitude toward socialized insurance. Our primary goal was to develop a construct that allows us to measure this "attitude toward social health insurance". Using a sample of 724 students from the People's Republic of China, Germany, and the U.S. and an initial set of sixteen items, we extract a scale that measures the basic attitude toward social health insurance in the three countries. The scale is internally consistent in each of the three countries. A secondary factor labeled "government responsibility" is marginally consistent for the total sample and for the German sample. German respondents have the most favorable attitude toward social health insurance, followed by China, and then the U.S. Chinese respondents have the most favorable attitude toward government responsibility in health insurance. The scale developed here can be used to further investigate and understand which health care system will succeed and which will fail in a given country, which is important from both a political and an economic perspective.

Introduction

The recent health care debate in the United States has sparked an intensive discussion about the most effective health care system. Should individuals be forced to purchase health care insurance (- for example like in Germany, Netherlands or Belgium)? Should the government foot the bill for health care expenditures? Hofstede (1980) and subsequent literature such as Diener, Diener, and Diener (1995) have found extensive and continuing evidence that the United States is the most individualistic country in the world. Other countries, such as China and other Asian countries, are much more collectivist in their outlook.⁹ Western European countries, such as Germany, with a health care system originally designed by Bismarck with the Health Insurance Act of 1883, are more socially oriented than the United States, and view health care as a concern of the state rather than an individual concern (Esping-Anderson 1990).

Interestingly, while a variety of studies have addressed how cultural and organizational dimensions may affect a variety of health care issues such as patient as well as employee (e.g., nurse) satisfaction and performance, no study

⁹ Cheung and Chow (1999) find that managers in Hong Kong, Taiwan, and China are convergent in collectivism and uncertainty avoidance and that Chinese managers have a high level of power distance.

has ever investigated what health care system its citizens would choose given the choice of different systems. That is, no study has ever investigated what the attitude of its populace is toward socialized health care. This study seeks to develop a construct that measures a peoples' "Attitude toward Social Health Insurance". In order to accomplish our goal, we include three different countries in the analysis: China, Germany, and the U.S. The health care system in each of these countries is briefly discussed next.

Health Care Systems in China, Germany, and the U.S.

Over the last three three decades, China changed its health care system from a governmental, centrally-planned and universal system to a more market-oriented system (van de Ven et al. 2009 and Ma et al. 2008). Until the beginning of the 1980s, physicians ("barefoot doctors" for the rural areas) were being employed by the state and the government has owned, funded, and managed the health care facilities (Blumenthal et al. 2005). At that time, the system was designed to grant equal access to the health care system regardless of the ability to pay (Ma et al. 2008). At the beginning of the 1980s, however, the Chinese government changed the system dramatically and privatized most Chinese health care facilities almost overnight (Eggleston et al. 2008 and Blumenthal 2005). User fees were increasingly relied upon as a result of substantial decline in government budget for health service. As the rural cooperative medical system gradually deteriorated, many rural residents were left with poor or no insurance coverage, which has led to inadequate and unequal access to health care (Akin et al. 2005). In that newly privatized health care system only 29% of the population were insured (Blumenthal et al. 2005).

Recently, China has undertaken another round of health care reform with one of the major goals being to improve the population coverage of health insurance. The reform has considerably fulfilled that goal. According to the 4th National Health Service Survey of China, which was conducted by the Chinese Ministry of Health in 2008, about 87.1% of the Chinese residents are covered by a governmental or by a collective-run health insurance (71.9% in urban areas and 92.5% in rural areas). Altogether three major social health insurance schemes exist in today's China: ¹⁰(1) The "Basic Medical Insurance for Urban Employees", which covers 44.2% of the urban residents, (2) "The Basic Medical Insurance for Urban Residents", which covers another 12.5% of the urban residents and (3) "The New Rural Cooperative Medical Scheme" (NRCMS), which covers 93% of the rural population. 3% of the Chinese population is entitled to free public medical care and 2.9% are insured in a different social health insurance. In contrast to the "Basic Medical Insurance for Urban Employees", which is mandatory, the NRCMS as well as the "Basic Medical Insurance for Urban Residents" are voluntarily (Chen 2008). For the urban employees' insurance, the employer and the employee are each paying a share of the premium. The urban residents insurance as well as the NRCMS are heavily funded by the government with 80%. The annual per capita cost for health care is about 541 Yuan (820 Yuan in urban areas and 442 Yuan in rural areas), which equals to about US\$ 82 and accounts for about 11% of a households consumption (4th National Health Service Survey of China). During the time period from 2003 to 2008, the average annual growth rate on health care expenditure was 9.5%. Even though China has already undergone several changes in its health care system in the past (Liu 2002), it is still struggling with a lot of problems, most notably the issue of inequality in the access to basic health care and medical service (Cheng 2008). The Chinese government has committed to increase the government funding for health care services by 1 to 1.5% of GDP over the next years in order to provide universal basic health care to everyone (Yip 2008 and van de Ven et al. 2009).

In Germany, citizens are required to purchase a health insurance.¹¹ Generally two insurance schemes exist in Germany: the Statutory Health Insurance System (GKV) and the Private Health Insurance System (PKV). The GKV is funded by a combination of employee contributions, employer contributions, and government subsidies, while the PKV is generally funded by the insured person only. Most citizens of Germany are required to be insured in the GKV system. Only those with an annual income level higher than approx. € 50,000 may opt-out of the GKV and get insured in the PKV. The premium for the GKV is a percentage of the income and does not depend on the health

¹⁰ Compare, <http://www.moh.gov.cn/publicfiles/business/htmlfiles/mohbgt/s3582/200902/39201.htm>., accessed on January 12, 2011.

¹¹ This differs for example from the National Health System (NHS) in the United Kingdom, where the government provides insurance coverage for all citizens.

status (Scheffold 2008). Since January 2011 the premium for any health insurance operating under the GKV scheme is 15.5%; 7.3% is borne by the employer and 8.2 % by the employee. The premiums of private health insurances are not linked to the income level but instead to the health status of the insured.

One interesting aspect of the German system is that almost all medical costs as well as the costs for medications are covered by the statutory health insurances. Co-payments are – compared to the U.S. – very low and there are no limitations on the coverage. In addition, family members without labor income are covered free of charge. Furthermore, the statutory health insurances have the legal obligation to contract with anyone who wishes to get a health insurance and it is forbidden to charge any higher premium than the usual 15.5%. (Rosenbrock et al. 2009 and Schulenburg 2007 et al.) This is, however, not the case in the private insurance system. The PKV is allowed to reject a member application. Moreover, every member has to pay a personal risk-adjusted health premium. Generally, it can be said that Germany’s health care system is based on the principle of solidarity, which means that everyone enjoys medical care independent from the payment towards the insurance, the social status or the health risk.

The severe demographic change and the cost-increasing medical and technical innovations together put a lot of pressure on health insurance premiums in Germany. Consequently, there is a continuous political attempt to reform the health care system. The main focuses of the recent reforms have been the restructuring of the health care system and the introduction of more competition in the system. The last reform, which came into power in January 2011 mainly focused on the financial stability of the GKV scheme and on the drug market (Cassel 2010, Greß et al. and Wille et al. 2009).

In the United States, until recently no citizen was forced to purchase health care insurance. However, the “Health Care and Education Affordability Reconciliation Act of 2010” which was signed into law by President Barack Obama, contains a provision that requires nearly every American to carry health insurance either through the employer, through government-run Medicare, Medicaid or the Veteran’s Administration, or through a private plan (Daemmrich et al. 2010). Moreover, the federal law requires medium to large employers (those businesses with 50 or more employees) to provide their employees with coverage or they have to pay penalties, and it provides subsidies to enable low-income individuals to purchase insurance. The law also places regulations on the health insurance industry. For example, the insurance firms are prohibited to deny coverage on the basis of pre-existing conditions, coverage limits are banned, and caps on premium increases are placed.¹² This recent health care reform has sparked a lively debate in the United States. Most recently, Virginia governor Bob McDonnell signed four bills into law (three of them identical), the text of which defended the state’s citizens’ right to opt out of the health insurance mandate. The laws were part of an organized move by conservatives to challenge the constitutionality of the federal health reform recently signed into law by President Barack Obama last year. The highly controversial debate about the recent U.S. health care reform has “made visible fundamental differences in Americans’ attitude concerning the role of the state in the economy and the legitimacy of government policies for risk-sharing and redistribution” (Daemmrich et al. 2010, p. 16). Another aspect of this debate is whether the government has the right to require citizens to purchase health insurance, which goes to the heart of the constitutionality issue.

This controversy of individual liberties regarding health insurance coverage in the United States indicates that a health care system based on solidarity, as it is present in most of Europe, for example, may not be appropriate in all countries equally. In the U.S., the strong resistance to the health care reform, particularly the mandate that every citizen has to carry health insurance, is likely attributable to the high degree of individualism in the country, but may be attributable to other cultural factors as well.

This paper seeks to develop a construct that can be used to measure a country’s “Attitude toward Social Health Insurance.” A unique, 16-question survey was developed in order to identify the construct for a total sample of 724 observations from China, Germany, and the U.S. A secondary objective is to investigate the validity of the resulting construct in each of the three countries as well as for all three countries combined. The resulting construct is useful and of high importance in a variety of areas: if it is possible to successfully measure how a country’s people feel about their health insurance system and in particular about the questions of (1) how a system should be financed, (2) how the access to the system should be organized, and (3) to what extent a country should cover the medical needs

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Compare, http://www.hpm.org/en/Surveys/Emory_University_-_USA/16/Virginia_Takes_Health_Reform_Fight_Through_Courts.html, accessed on January 6, 2011.

of all inhabitants, then regulators may be able to design a health care system that optimally reflects the attitude of its people. This is of high importance for politicians in a democracy, since the construct should allow them to better understand the fundamental preference of the population and thus reduce the need of trial and error during a system overhaul or building one from the ground up. In other words, to the degree that a government can shape people's preference, the gap between the current health care system and the construct can highlight where the advocating effort should focus. Furthermore, the construct can be used to gauge responses to health care reforms in any given country.

Review of Related Literature

Given that we seek to investigate a construct that can measure the attitude toward social health insurance in *any* country, it is important to address the differences in health care systems based on a country's culture.

The literature on individual choices of health care systems is fairly sparse. However, several studies have investigated various aspects of health care systems to cultural dimensions. For example, Hall et al. (2007) investigate whether provided written information facilitates informed choice regarding screening tests for Down's syndrome in five European and two Asian countries. The authors conclude that Northern European informed choice models may not be appropriate in more collectivist cultures such as China, implying that cultural dimensions may reflect the design of the health care system. Similarly, Dubois and McKee (2006), encourage a better understanding of the differences of cultural dimensions for health measures in different countries. A construct that measures the attitude toward social health care would be very useful in this area.

Closely related to the present study is the one by McKee (2005), who argues that Hofstede's cultural dimensions could be turned into relevant health sector indicators. The author states: "As cultural indicators are usually not taken into account in international policy making, the results show that this habit had better chance, certainly if the inclination increases to transfer policy measures from one system to another." (p. 109). McKee thus strongly suggests that health care policy should be contingent on a country's cultural dimensions. Westerhof and Barrett (2005) find that the degree of individualism is directly and positively related to a country's age identity and subjective well-being. Thus, Americans feel younger, which in turn contributes to general well-being. Consequently, individualism may affect the preferences individuals have with respect to their health care system. Deschepper et al. (2008) also investigate cultural dimensions, but in a framework related to the use of antibiotics. The authors find that both power distance and uncertainty avoidance positively affect the use of antibiotics, suggesting that cultural dimensions at least partially explain prescribed and self-medicated antibiotics usage. Since our purpose is to investigate the design of a health care system based on cultural dimensions, including the payment for doctor visits and prescription drugs, Deschepper et al.'s findings imply that countries with a greater degree of uncertainty avoidance and power distance may prefer a system that involves greater subsidies from the government in the provision of health care. Grigoryan et al. (2008) also investigate predisposing factors related to the use of antibiotics, including certain health care factors such as reimbursement of prescribed antibiotics in their analysis. Once a construct measuring the attitude toward social health insurance has been developed, it will be possible to directly relate cultural dimensions to that construct in order to investigate which dimensions "cause" attitudes toward social health insurance to vary.

There are also several studies that investigate the impact of culture on health care practices. For example, Barker (1992), Beyene (1992), Carillo et al. (1999), Gatrad (1994), Jecker et al. (1995), and Young and Klinge (1996) all document that Western health care practices may not be valid for non-Western cultures. Greeson et al. (2001) state that "...cultural norms and values dictate appropriate types of social behaviors, including communication patterns and help-seeking behaviors. ...These differences can result in conflicts or ethical dilemmas for genetic counselors and other health care providers." (p. 360). The implication of this statement is that cultural dimensions or values can influence the appropriateness of not only health care practices, but of the underlying philosophy of a country's health care system design.

While we already referred to the impact of cultural dimensions on the use of antibiotics, cultural dimensions have also received some attention in the broader literature of drug sales. For example, Stremersch and Lemmens (2009) find that national culture, economic wealth, and lagged sales affect pharmaceutical sales in 34 countries. Investigating salespeople from Australia and New Zealand, Murphy (1999) finds that scores on Hofstede's cultural dimensions suggest that sales practices need to be adapted to local needs for a large US-based multinational corporation.

Another stream of literature investigates the relationship between culture and patient satisfaction. For instance, Elleuch (2008) finds that empathy and harmony should be emphasized when delivering medical services in Japan. Brink-Muinen et al. (2008) document differences in communication patterns between EU countries. While these studies imply that the communication pattern between doctor and patient depends on culture, differences in health attitude and health beliefs can lead to miscommunication between physicians and patients from other cultures (Waitzkin and Britt (1989); Payer (1989); Hofstede and Hofstede (2005)). The literature reported in this area suggests that patient satisfaction within a health care system in a given country can at least be partially explained by that country's cultural dimensions.

In addition to the above literature streams, another stream of literature related to cultural dimensions regards nursing exists as well. For instance, Lim and Yuen (1998), while investigating the level of nurse stress in Singapore, imply that countries with different cultures may vary in the degree of prestige assigned to different career paths. Likewise, Pearson and Chong (1997) document that the relatively high collectivism and power distance in Malaysia result in in-group loyalty, affiliation, harmonious relationships, and power figures as the source of job satisfaction for Malaysian nurses. These studies imply that a country's culture can affect the job satisfaction of health care employees and the way in which particular careers, such as health care professions, are viewed and respected.

While the different aspects of health care systems, such as patient satisfaction and job satisfaction can be attributed to a country's culture, another leg of the health care literature suggests that the organizational culture can affect various aspects of health care. For example, Graber and Kilpatrick (2008) point out that organizational culture can add to the heterogeneity of value systems within health care organizations. Similarly, Igira (2008) studies healthcare information systems in Tanzania and concludes that the design of successful health care information systems is challenged by a country's health care specific work processes and organizational factors. Carmeli (2005) also finds that employees' withdrawal intentions and absenteeism are directly related to different organizational culture dimensions within the health care sector.

The above paragraph illustrates that there is an abundance of literature on differences in health care systems based on a country's culture. However, to the best of our knowledge so far no analysis has accomplished to develop a construct that can measure a country's attitude toward social health insurance. Since it is our goal to develop a construct that can ultimately be used in *any* country to measure a country's attitude toward social health insurance, we designed questions that can be used to develop such a construct, which is discussed next.

Questions for Construct Development

We developed sixteen questions to be included in the factor analysis. The questions were developed to measure various "social" aspects of health care systems. Specifically, the questions can be grouped to address the following:

Tax- Related Questions

1. Tax revenues should be used to provide or help pay for health insurance for individuals who cannot afford their own health insurance.
2. Tax revenues should be used to make it affordable for each individual or household to purchase health insurance.

While the questions above directly reference the use of tax dollars to help provide insurance, we also developed several questions that directly referenced the government.

Government-Related Questions

3. The government should have no role in the provision of health insurance.
4. The government should do more to help needy citizens, even if it means going deeper into debt.
5. The government should provide basic health insurance for everyone in society.
6. The government should make it mandatory to purchase health insurance.
7. The government should require businesses to provide or help purchase health insurance for their employees.
8. The government today can't afford to do much more to help the needy.
9. Poor people today have it easy because they can get government benefits without doing anything in return.

Note that the questions above vary both in terms of their level of detail and the aggressiveness with which the government is involved. Moreover, some of the questions (e.g., Questions 3 and 8) are reversed.

While these first two sets of questions cover the government, a set of questions related to business entities was also developed.

Business-Related Questions

10. Businesses should have no role in the provision of health insurance.
11. Businesses should voluntarily provide health insurance for their employees, even without government intervention.

It is possible, of course, that individuals have strong feelings resulting from their attitudes about individual choice, governments, or businesses. Therefore, a set of questions that simply generally stresses the importance of insurance, without reference to any one particular entity (other than "society"), is also included.

Insurance-Related Questions

12. Society should provide medical treatment for everyone who needs it.
13. Everyone in society should have health insurance.
14. It should be the decision of each individual or household to purchase health insurance.

Lastly, it is possible that people's attitude toward social health insurance could differ depending on the degree to which individuals are responsible for their illness or disease. Consequently, we included two questions measuring this aspect.

Individual-Responsibility Questions

15. Those that do not have insurance should have to pay for their own medical treatment, even if they did not cause the sickness directly through their own behavior.
16. Individuals who are not health conscious and live an unhealthy lifestyle should be forced to pay more for their own health insurance or receive less subsidy for health insurance from the government.

Data and Methods

Together with some basic demographic information, the sixteen-questions survey was administered in China, Germany, and the US in the Fall Semester of 2010. In China, the survey was administered at Beijing International Studies University (BISU). In Germany, the survey was administered at the University of Applied Sciences Niederrhein in Krefeld and the University of Duisburg-Essen in Duisburg. In the US, the survey was administered at the University of North Florida.

In Germany, the survey was translated to German and then back-translated to English by a third party. The resulting version of the survey was compared to the original English version by the authors and adjustments were made where discrepancies in meaning were found. In China, the survey was double-forward translated to traditional Chinese by two parties. The resulting versions were then compared by the authors and adjustments were made where discrepancies in meaning were found.

In China and Germany, the survey was administered in a variety of business and economic classes. In the U.S., the survey was administered to two sections of an introductory business course. Prior to completing the survey, students were informed about the general nature of the study. In China and Germany, no extra credit was provided for students to participate in the survey. In the U.S., extra credit was provided. However, students were given an alternative to obtain the extra credit, such that no student was forced to participate in the survey. In China, the survey was conducted in paper format. In the U.S., the survey was conducted using an online survey tool. In Germany, both online and paper formats were utilized. Gathering data with different data collecting methods is not a problem in regards to the representation of responses, if the respondents are recruited by the researcher and not a self-selected sample (Grandcolas 2003, Coderre 2004 and Schillewaert at al. 2005).

In China, 229 students participated in the survey. After eliminating incomplete and nonsensical responses, a final Chinese sample of 223 students remained. In Germany, 297 students participated in the survey, from which a final sample of 245 (50 online, 195 paper) was obtained. In the US, 268 students participated in the survey, rendering a final sample of 256 students. The combined total sample from the three countries was therefore 724 students. Table 1 provides some basic demographic information for the students in the sample.

Table 1. Demographic Information for Samples from Three Countries.

	Total Sample (N = 724)	China (N = 223)	Germany (N = 245)	US (N = 256)
Male	43%	35%	38%	54%
Married	10%	3%	8%	17%
Mean Age	23	21	25	24
Nationality of Surveyed Country	90%	96%	93%	82%
Have Health Insurance	85%	75%	98%	80%
Have Children	8%	4%	5%	13%
Bachelor Student	80%	91%	53%	97%

As shown in Table 1, 54% of the students in the U.S. sample are male. In contrast, in both China and Germany, over 60% of the students in the sample are female. Across the countries, the average age ranges from 21 (China) to 25 (Germany), and the majority of students in each country are bachelor students, with a low of 53% in Germany.¹³ Only 10% of the total sample is married, with a high of 17% for the U.S. sample, and a low of 3% for the Chinese sample. Additionally, only 8% of the total sample has children. Since the goal of this study is to develop a construct that can be used in any country to measure the attitude toward social health insurance, it is important to capture the nationalities of the three countries in the samples. Table 1 reveals that the range of students who indicate they are nationals of the country in which the survey was administered ranges from 82% (U.S.) to 96% (China). It can therefore be stated that our samples capture the three countries involved adequately for the purposes of this study.¹⁴

While our ultimate goal is to develop a construct to measure the attitude towards social health insurance in each country, it is interesting to investigate the individual attitudes of each country and the responses to the sixteen questions, which we hope will result in the said construct. Table 2 displays the responses of the 16 questions discussed previously.

Table 2. Responses to Sixteen Questions Used to Develop Social Attitude Construct by Country.

Question	Country	Strongly	Somewhat	Neither Agree nor	Somewhat	Strongly
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¹³ In Germany, the traditional Diploma is still being pursued but it is phased out by the Bachelor degree. However, 14% of the sample is still Diploma students, while 19% of the German sample is pursuing a Masters degree.

¹⁴ One criticism of the present study could be that student samples are utilized. However, there is evidence that results from students can be extended to a broader population. For example, Cipriani (2008) discovered that results from undergraduate students were not dissimilar from results collected from professional investors.

		Agree	Agree	Disagree	Disagree	Disagree
1. Tax revenues should be used to provide or help pay for health insurance for individuals who cannot afford their own health insurance.	China	17.9%	45.3%	29.6%	6.3%	0.1%
	Germany	17.6%	45.3%	29.0%	6.5%	1.6%
	USA	8.2%	31.3%	29.7%	18.0%	12.90%
2. Tax revenues should be used to make it affordable for each individual or household to purchase health insurance.	China	18.4%	48.9%	28.3%	4.5%	0.0%
	Germany	18.0%	45.7%	26.5%	9.0%	0.1%
	USA	10.5%	37.5%	24.2%	10.5%	17.2%
3. The government should have no role in the provision of health insurance.	China	2.7%	9.0%	36.3%	41.7%	10.3%
	Germany	3.3%	4.9%	30.6%	47.8%	13.5%
	USA	13.3%	18.8%	27.0%	32.4%	8.6%
4. The government should do more to help needy citizens, even if it means going deeper into debt.	China	9.4%	34.1%	39.9%	15.2%	1.3%
	Germany	4.1%	18.8%	48.6%	21.2%	7.3%
	USA	2.3%	17.2%	20.3%	32.8%	27.3%
5. The government should provide basic health insurance for everyone in society.	China	23.8%	48.9%	22.4%	4.0%	0.1%
	Germany	40.8%	43.7%	13.9%	4.5%	0.1%
	USA	15.2%	28.9%	16.8%	18.8%	20.3%
6. The government should make it mandatory to purchase health insurance.	China	4.9%	14.8%	43.9%	31.8%	4.5%
	Germany	11.4%	31.0%	31.8%	20.8%	4.9%
	USA	2.3%	7.8%	24.6%	32.0%	33.2%
7. The government should require businesses to provide or help purchase health insurance for their employees.	China	20.1%	54.3%	20.6%	3.6%	1.3%
	Germany	19.6%	53.9%	22.4%	3.7%	0.0%
	USA	11.7%	40.6%	17.6%	19.1%	10.9%

8. The government today can't afford to do much more to help the needy.	China	2.2%	9.9%	27.8%	43.5%	16.6%
	Germany	6.9%	17.6%	43.3%	26.5%	5.7%
	USA	16.8%	34.0%	23.0%	21.5%	4.7%
9. Poor people today have it easy because they can get government benefits without doing anything in return.	China	3.1%	14.8%	31.4%	39.0%	11.7%
	Germany	16.7%	31.0%	31.8%	14.7%	5.7%
	USA	22.3%	40.2%	17.6%	15.2%	4.7%
10. Businesses should have no role in the provision of health insurance.	China	1.8%	9.9%	32.7%	47.1%	8.5%
	Germany	2.9%	12.2%	33.5%	43.7%	7.8%
	USA	2.0%	7.8%	28.5%	48.9%	12.9%
11. Businesses should voluntarily provide health insurance for their employees, even without government intervention.	China	18.4%	58.7%	17.5%	4.5%	0.1%
	Germany	13.1%	34.7%	30.2%	20.4%	1.6%
	USA	19.5%	47.3%	25.0%	7.4%	0.1%
12. Society should provide medical treatment for everyone who needs it.	China	22.0%	53.8%	21.5%	2.7%	0.0%
	Germany	24.1%	49.8%	21.6%	3.3%	1.2%
	USA	10.5%	43.0%	23.8%	14.1%	8.6%
13. Everyone in society should have health insurance.	China	21.1%	46.2%	29.1%	2.7%	0.1%
	Germany	61.2%	32.2%	3.7%	2.9%	0.0%
	USA	19.1%	40.6%	18.8%	15.6%	5.9%
14. It should be the decision of each individual or household to purchase health insurance.	China	11.2%	57.4%	25.1%	6.3%	0.0%
	Germany	4.1%	19.2%	22.9%	35.9%	18.0%
	USA	37.1%	41.8%	16.4%	4.3%	0.0%
15. Those that do not have insurance should have to pay for their own medical treatment, even if they did not cause the sickness directly through their own behavior.	China	6.3%	14.3%	27.4%	39.0%	13.0%
	Germany	2.4%	6.1%	35.1%	40.0%	16.7%
	USA	5.1%	21.5%	39.1%	27.0%	7.4%
16. Individuals who are not health conscious and live an unhealthy lifestyle should be forced to pay more for their own health insurance or receive less subsidy for health insurance from the government.	China	6.7%	32.3%	38.6%	20.6%	1.8%
	Germany	25.7%	31.0%	25.7%	13.1%	4.5%
	USA	18.8%	30.0%	30.9%	13.7%	7.0%

There are some interesting differences between the three countries for the groups of questions. The first two questions are the tax-related questions. For each of these two questions, the responses from China and Germany are virtually indistinguishable; in each country, over 60% feel tax revenues should in some form be used to contribute towards health insurance. Responses in the U.S. are much less approving; less than 40% of the survey participants agree to question 1 and less than 50% to question 2.

The second group of questions (questions 3 through 9) related directly to government involvement in the provision of health care. Generally speaking, once again China and Germany tend to cluster together; the majority of survey participants in these two countries feel that the government should have a role in the provision of health insurance (China: 52%; Germany: 61%); that the government should provide basic health insurance for everyone in society (China: 73%; Germany: 85%); that the government should require businesses to help provide health insurance to employees (China and Germany: 75%). Respondents from the USA feel somewhat differently. Only about 40% of the respondents are of the opinion that (1) the government should have a role in the provision of a health insurance and (2) that the government should provide basic health insurance for everyone in society. In addition, about 30% of the U.S. respondents disagree with the statement that the government should require businesses to provide or help purchase health insurance for their employees. In Germany and China less than 5% disagreed with this statement.

There is also a difference in the responses to the statement that the government should do more to help needy citizens, even if it means going deeper into debt. The vast majority of the U.S. respondents disagree to that statement (approx. 60%). However, only about 17% of the Chinese and about 29% of the German participants disagree with that statement. Most of the U.S. respondents also disagree with the statement that the government should make it mandatory to purchase health insurance (approx. 65%) whereas only about 36% of the Chinese respondents and about 26% of the German respondents disagree with that statement. Most respondents from the U.S. also agree with the statement that poor people have it easy because they can get the government to support them (63%). Interesting is the fact that also about 48% of the German participants agree with this statement.

The third group of questions consisted of questions 10 and 11 and related to the role of businesses in regards to the provision of health insurance. For the first time, the three countries are more or less in synch; the majority of respondents from each country disagrees with the statement that businesses should have no role in the provision of health insurance. Moreover, the majority of respondents from China and the USA agrees that businesses should voluntarily provide health insurance for their employees (about 48% of German respondents agree with this statement).

The next group of questions focuses on general insurance needs without the mention of government or businesses. The majority of respondents from all three countries agree that “society” should provide medical treatment for everyone who needs it. Similarly, when asked whether everyone in society should have health insurance, the majority of respondents from each country agrees. Interestingly, a large 93% of the German respondents agree with this statement. Responses to the next statement, that it should be an individual decision to purchase health insurance, reflect the individualism of the USA; almost 80% of respondents from the U.S. agree with this statement, while only 23% of the German respondents do. Interestingly, almost 70% of Chinese respondents also agree with that statement.

The last group of questions relates to individual responsibility. The majority of respondents from China and Germany disagree that individuals who do not have insurance should have to pay for medical treatment, even if they are not at fault for causing the sickness through their behavior. U.S. respondents seem to be ambivalent about this statement. The last question asks the survey participants whether individuals who are not health conscious should either pay more for health insurance or receive less subsidy from the government. Interestingly, Germany is the only country in which the majority of survey participants agrees with this statement (approx. 57%). Almost half of the U.S. respondents agree with the statement, while there is no clear indication in China whether the people believe health insurance should somehow be based on individual behavior.

In summary, the results presented in Table 2 reveal some commonalities in the responses provided by survey participants in the three countries (such as the need for health insurance in general), but also some important differences, such as the clearer preference of the Chinese in Germans participants for government involvement relative to the U.S. While it is interesting to investigate each question individually, our ultimate goal is to develop a construct based on these questions that can be used in each country to measure participants’ general attitude towards social health insurance. The development of this construct is discussed next.

Construct Development

In order to identify the construct “Attitude toward Social Health Insurance,” the sixteen questions were subject to an exploratory factor analysis using the common factor analysis method with Varimax rotation. The Kaiser-Meyer-Olkin test of sampling adequacy is 0.86 for the entire sample, indicating that the data was good to perform factor analysis. Those items that loaded highest on each factor (.60 and above) and did not load over .40 on more than one factor were included as part of a factor.¹⁵

Based on this analysis, four factors were identified, that together accounted for 68% of the item variance. These factors and the individual loadings are displayed in Table 3.

As shown in Table 3, four unique factors are identified. The first factor contains six items (both tax-related questions, two government-related questions, and two insurance-related questions). We label this factor “Attitude toward Social Health Insurance.” This factor has a Cronbach’s alpha of 0.85. Cronbach’s alpha measures how well each individual item in a scale correlates with the sum of the remaining items and therefore measures consistency among individual items in a scale. It is generally used to assess the reliability of a factor.¹⁶

The second factor that emerges consists of two questions, which are both from the government-related question category. The two items imply that the government can’t afford to do much to help the needy, but that poor people have it easy because they can get government support. We label this factor “Government Responsibility.” Cronbach’s alpha for this factor is .63, which is still acceptable (Hair et al. 2010).

The third factor also consists of two questions and seems to relate to the relative absence of government in the provision of health insurance from either a business or an individual perspective. Specifically, the two items included in this factor state that businesses could provide insurance voluntarily (without government involvement) and that it should be the decision of each individual or household to purchase health insurance. We label this factor “Freedom of Choice.” Cronbach’s alpha for this factor is rather low .37, which indicates poor internal consistency.

The last emerging factor includes the two items stating that government/business should have no role in the provision of health insurance. We label this factor “Anti-Institution.” Cronbach’s alpha of this factor is also a rather low .56.

Overall, it appears that there is one overriding factor that can be used to develop a scale measuring “Attitude toward Social Health Insurance.” The eigenvalues of the four factors also seem to support that assessment; the first factor has an eigenvalue of 4.44, while the next largest eigenvalue is only 1.82 for the “Government Responsibility” factor.

Thus appears that there are two distinct factors, one measuring attitude toward social health insurance in general, the other focusing more on the government responsibilities.

Now that two factors have been identified, it is possible to compare their levels across the three countries. Table 4 presents the factor score statistics (Panel A) and factor score comparison (Panel B) for both of the identified factors. For this purpose, the factor scores have been standardized to a -1 (unfavorable attitude toward social health insurance and government responsibility) to 1 (favorable attitude toward social health insurance and government responsibility) scale to ease interpretation.

Table 3. Factors for the Total Sample of 724 Respondents from China, Germany, and the USA.

Construct Label	Item	Factor Loading	Cronbach’s Alpha
Attitude toward	Tax revenues should be used to provide or help pay for	.74	.85

¹⁵ This is more restrictive than most factor analysis, which typically utilize loadings with .4 or higher. See, for example, Fagenson-Eland, Ensher, and Burke (2004).

¹⁶ Many articles are available on the relevant cutoff for alpha. In exploratory studies, often an alpha as low as .60 is acceptable, which is the approach we employ here. An alpha of .6 is referred to as “questionable” by George and Mallery (2003), while they deem an alpha of .5 as “poor.”

Social Health Insurance	health insurance for individuals who cannot afford their own health insurance. (Q1)		
	Tax revenues should be used to make it affordable for each individual or household to purchase health insurance. (Q2)	.75	
	The government should provide basic health insurance for everyone in society. (Q5)	.79	
	The government should require businesses to provide or help purchase health insurance for their employees. (Q7)	.72	
	Society should provide medical treatment for everyone who needs it. (Q12)	.71	
	Everyone in society should have health insurance. (Q13)	.70	
Government Responsibility	The government today can't afford to do much more to help the needy. (Q8)	.74	.63
	Poor people today have it easy because they can get government benefits without doing anything in return. (Q9)	.87	
Freedom of Choice	Businesses should voluntarily provide health insurance for their employees, even without government intervention. (Q11)	.80	.37
	It should be the decision of each individual or household to purchase health insurance. (Q14)	.69	
Anti-Institution	The government should have no role in the provision of health insurance. (Q3)	.64	.56
	Businesses should have no role in the provision of health insurance. (Q10)	.92	

As shown in Panel A of Table 4, the three countries vary substantially in their factor scores. Germany appears to have the most favorable attitude toward social health insurance (mean factor score = .49), which is not surprising given the solidarity-based system. This is followed by China (.43), and the U.S. (.10). Interestingly, while there is no difference in the variability of this factor between China and Germany, the U.S. factor score has a rather high standard deviation compared to China and Germany, indicating a greater variance of responses across respondents from the U.S.

Table 4. Factor Scores for Two Constructs and Three Countries.

<i>Panel A – Factor Score Statistics</i>				
Construct	Country	Mean^a	Median^a	Std. Dev.^a
Attitude toward Social Health Insurance	China	.43	.42	.27
	Germany	.49	.50	.27
	U.S.	.10	.17	.48
Government Responsibility	China	.25	.27	.39
	Germany	-.09	-.04	.45
	U.S.	-.25	-.27	.46
<i>Panel B – Factor Score Comparison</i>				
Construct	Comparison	Mean Difference	Median Difference	Std. Dev. Difference^b
Attitude toward Social Health Insurance	China-Germany	-.06**	-.08***	.00
	China-U.S.	.33***	.25***	-.21***
	Germany-U.S.	.39***	.33***	-.21***
Government Responsibility	China-Germany	.34***	.31**	-.06*
	China-U.S.	.50***	.54***	-.07***
	Germany-U.S.	.16***	.23***	-.01

Notes to Table 4:

^a Both constructs were standardized to reflect a -1 to 1 scale, with -1 reflecting a very unfavorable attitude toward social health insurance and government responsibility and 1 reflecting a favorable attitude toward social health insurance and government responsibility.

^b Tested using Levene's test for equality of variance.

* Significant at the 10% level.

** Significant at the 5% level.

*** Significant at the 1% level.

The results for the factor “government responsibility” are interesting as well. For this factor, China has the highest mean of .25, while Germany and the U.S. have substantially lower and negative means. The negative score for Germany is somewhat surprising. Even though Germany has a solidarity-based health insurance system, it does not seem that the population feels that the government should support the poor and needy in all other matters. This attitude may be a reflection of the fact that Germany already has a very extensive social support system and that the current population does not see the need to extend it any further at the expense of future generations. Thus, respondents from China appear to have a more pronounced sense of government responsibility relative to the other two countries. The variability of responses for this construct is the lowest in China sample and comparable in Germany and the U.S..

Panel B of Table 4 shows that virtually all mean and median differences are highly significant. The rank order emerged for “Attitude toward Social Health Insurance,” from the least favorable to the most, is U.S., China, and then Germany. The rank order for “Government Responsibility,” from the least favorable to the most, is U.S., Germany, China.

Also note from Panel A that the responses differ significantly in their variability across countries. For “Attitude toward Social Health Insurance,” responses in the U.S. are significantly more variable than either in China or in

Germany. For “Government Responsibility,” responses from China are significantly less variable than those from Germany and the U.S. Given the centralized structure of the People’s Republic of China, this result is not surprising.

As a next step, the internal consistency of these factors across each of the three countries was tested. The results of this analysis are displayed in Table 5.

Table 5. Cronbach’s Alpha Values across All Three Samples for Two Factors.

	Attitude toward Social Health Insurance (Factor 1)	Government Responsibility (Factor 2)
Entire Sample (N = 724)	.85	.63
China (N = 223)	.73	.49
Germany (N = 245)	.72	.65
USA (N = 256)	.88	.50

As shown in Table 5, the factor for “Attitude toward Social Health Insurance ”is internally consistent in all three countries, with a Cronbach’s alpha ranging from .72 for Germany to .88 for the USA. The results for the factor “Government Responsibility” are less encouraging, with only Germany displaying a Cronbach’s alpha above .6. The Cronbach’s alpha for this factor for China (.49) and the USA (.50) are poor.

Conclusion and Implications

The recent health care reform in the United States has prompted a debate within the country whether the government has the right to require individuals to purchase health insurance. In China, substantial health care reforms have been done and are under way, while there is a continuing (incremental) change in the German system. These occurring reforms, and the increasing need for health care reforms around the globe make it imperative that we understand the country-level factors that drive the design and reform of health care systems.

In order to understand the health insurance system a country chooses to adopt, the health care reform a country decides to undertake, or the factors that drive the design and/or reform of that system, we must first be able to measure what a country’s attitude toward socialized health insurance is. Once we have obtained a measuring scale, or construct, we can then identify country-level factors, such as cultural or economic factors, that relate to this attitude. Better understanding the fundamental driving force of the success or failure as well as its stability has important implications from a political perspective. It may reduce the social and economic cost stemming from frequent health care reforms.

The primary goal of this paper was to develop a construct that allows to measure this “attitude toward social health insurance.” Using a sample of 724 students from the People’s Republic of China, Germany, and the USA and an initial set of sixteen items, a scale that measures the basic attitude toward social health insurance in the three countries could be extracted. Moreover, the scale is internally consistent in each of the three countries.

Undoubtedly, as in any study, there are limitations to the present study. Most obviously, perhaps, is the limitation that the sample consists of students. While some studies show that the results of students can be extended to the general public or even industry professionals, that assumption may hinge on the marginal difference between students and professionals in the field. In countries such as China, there are still vast socioeconomic and educational status differences between the general (especially the rural) public and university students. Consequently, the sample may not be representative for the population of the People’s Republic of China as a whole. We also acknowledge that the components of the “Attitude toward Social Health Insurance” scale change over time as a country’s culture changes and a country evolves.

Extensions to the current research are endless. The next question is what underlying factors actually cause this construct to change. Does lifestyle matter? Does a high level of individualism result in an aversion to socialized medicine? Do health care workers have a different attitude and perspective than the general public given their inside knowledge? We are hopeful that the present study provides the starting point for a series of additional studies that

both refine the scale developed here and apply it to a variety of settings in order to optimize, both economically and politically, the health care system in any given country.

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Does PPP Hold for GCC?

Evidence from Panel Data Unit Root and Cointegration

Completed Research Paper

Mahmoud Abdelbaky

*University of Dubai
Dubai, UAE. PO.BOX 14143
mabdelbaky@ud.ac.ae*

Shereef Ellaboudy

*Zayed University, Abu Dhabi
Abu Dhabi, UAE. PO Box 4783
Shereef.ellaboudy@zu.ac.ae*

I. Introduction

Eventually, the GCC aims to introduce a single currency and to establish the monetary union among its member states. The matter of fact, the establishing the GCC monetary union and introducing the GCC single currency will enclose many impacts on the various economic sectors, particularly intra-GCC trade, tourism and investment. The impacts of this advancement will largely reflect on the financial services and capital markets as well. This might help to attain an increasing growth and accelerated developments. Furthermore, the positive effects of introducing the GCC single currency on the banking sector and the integration of the GCC capital markets lead to more convergence among member states. This will enhance the transparency and the financial discipline at the regional level and will positively reflect on the monetary and financial stability in the region. For the purpose of achieving the GCC monetary and economic union including introduction of the single currency, member states have to achieve a high level of convergence in all economic policies, particularly the financial and monetary policies and the banking legislation, and develop criteria to ensure proximity of the significant economic performance averages for achieving financial and monetary stability.

Essentially, there are many ways to attest if the GCC succeeded to achieve the level of convergence that facilitates for the single currency and monetary union. One of the popular methods is “PPP”. According to Purchasing Power Parity (PPP), the long-run equilibrium exchange rate of two currencies is the rate that equalizes the purchasing powers of the currencies. Over the long term, the exchange rate between the currencies adjusts in

accordance with the relative purchasing power of each. When the domestic prices of a country increase, the exchange rate of the country's currency must depreciate in order to return to PPP. The PPP theory is based on an extension and variation of the law of one price; i.e. that identical goods must have only one price in an efficient market. Thus, in the absence of transportation and other transaction costs, competitive markets will equalize the prices of an identical good in two countries if the prices are expressed in the same currency. So, if GCC thrived to achieve the monetary integration that enables for introducing the single currency and the monetary union, one can expect that PPP hypothesis holds among its member states. If the PPP hypothesis does not hold, this will be an indication that the GCC is still far from monetary convergence and cannot gain the advantages of the single currency nor the monetary union.

This paper tries to test for PPP among GCC member states using panel data cointegration during the period 1990 – 2007. This method facilitates to pool information about common long run relationships from across the panel, while allowing the associated short-run dynamics and fixed effects to be heterogeneous across different members of the panel. By allowing data to be pooled in the cross-sectional dimension, non-stationary panel methods have the additional potential to improve upon limitations of short time series.

The paper is organized as follows: the literature review of PPP is covered in the following section. Section three explores the empirical study which includes the models, the data, the analysis and the results. The last section concludes the paper and calls for some policy implications.

II. Literature Review

The simplicity and intuitive appeal of PPP has attracted many researchers and prompted many analyses of the theory. A search of the American Economic Association's EconLit, a leading database of economics literature, resulted in 1139 articles (as of September 2006) that have been published since 1969 and use the term "purchasing power parity." Some prominent examples are Enders (1988), Corbae and Ouliaris (1988), Papell (1997), O'Connell (1998) and Pedroni (2001).

There are two methods for testing validity of the PPP. The first method is a unit root test on the exchange rates, the REER and/or the RER. If the time series of the real exchange rate of a country is not stationary, i.e. unit

root exists, the relative PPP does not hold. The alternative test of the PPP uses cointegration. Testing for cointegration between the exchange rate and price levels is a basic method to verify the validity of PPP. If cointegration can be found, a long run relationship between the exchange rate and the relative price level exists. The cointegration of two variables proposed by Engle and Granger (1987) was used to test for PPP¹⁷. However, the symmetry and proportionality conditions of PPP are not imposed and cannot be tested easily by this test (Sarno and Taylor, 2002a)¹⁸. The Johansen (1988) multivariate cointegration allowing for the presence of multiple cointegration vectors solves these problems¹⁹. Kargbo (2003) investigated long run PPP in Africa in the period 1980-1997. Employing Johansen's cointegration technique and error correction models, this study found supportive evidence for PPP²⁰. In addition, Allsopp and Zurbruegg (2003) applied a cointegration approach to examine PPP during the crisis period (1990-2002) in Asian countries. No cointegration was found and hence no evidence for PPP²¹. Thus, this implies the long run relationship between exchange rate and price levels seems to be existed, but does not precisely follow strong PPP.

Time series approach encounters issues of heterogeneity and cross-sectional independence. To overcome the problems of using time series data, research stirred toward panel data approach for testing PPP. Due to its difficulty in measuring real exchange rates across countries because countries construct price indices differently, a more appropriate method may be testing for panel cointegration, a long run relationship, between domestic and foreign price indices and nominal exchange rates (Fleissig and Strauss, 2000)²².

¹⁷ Engle, Robert F., and Granger, C. W. J. (1987), "Co-Integration and Error Correction: Representation, Estimation, and Testing", *Econometrical*, 55(2), 251-276.

¹⁸ Sarno, Lucio, and Taylor, Mark P. (2002a), *The Economics of Exchange Rates*. Cambridge: Cambridge University Press.

¹⁹ Johansen, Soren. (1988), "Statistical analysis of cointegration vectors", *Journal of Economic Dynamics and Control*, 12(2-3), 231-254.

²⁰ Kargbo, Joseph M. (2003), "Cointegration Tests of Purchasing Power Parity in Africa", *World Development*, 31, 1673-1685.

²¹ Allsopp, Louise, and Zurbruegg, Ralf. (2003), "Purchasing Power Parity in East Asia: Why all the Fuss?" Centre for International Economic Studies, University of Adelaide, Australia: Discussion Paper No. 0304.

²² Fleissig, Adrian. R., and Strauss, Jack. (2000), "Panel Unit Root Tests of Purchasing Power Parity for Price Indices", *Journal of International Money and Finance*, 19, 489-506.

Pedroni (1996) employed a fully modified ordinary least squares (FMOLS) panel cointegration approach and rejected the strong version of PPP, and instead supported the weak version²³. Later on, Pedroni (2004) examined the properties of residual-based tests for the null of no cointegration for dynamic panels and illustrated the use of these tests in testing for PPP in the post-Bretton Woods period²⁴. Jenkins and Snaith (2005) extended the method of Pedroni (2004) to test for weak PPP among 11 countries and found evidence in support of weak PPP for goods characterized as highly traded, but not for non-traded goods²⁵. The study of Drine and Rault (2007) confirmed the strong version of PPP for OECD countries and weak PPP for Middle East and North African countries, but no evidence for PPP in African, Asian, Latin American and Central and East European countries²⁶. When countries were grouped by the exchange rate regime, fixed exchange rate and floating exchange rate, the cointegration tests of Pedroni confirmed weak PPP for the two exchange rate regimes.

III. Empirical Analysis

This section of the paper introduces the different PPP models and how to be tested using panel data unit root and cointegration. Once the PPP models are clearly stated, the way of analysis, data and results are being explored to show to what extent PPP holds for GCC. It is worthy to mention again here that verifying PPP – especially in strong form- in GCC indicates that the region is already integrated to the level that enable for gaining the advantages of monetary union and the single currency among GCC state members. On the other hand, if at least the weak form of PPP hypothesis does not hold, this means that the region is not integrated to the extent that facilitate for introducing the single currency and for the monetary union.

A. PPP Models

²³ Pedroni, Peter. (1996), “Fully Modified OLS for Heterogeneous Cointegrated Panels and the Case of Purchasing Power Parity”, Department of Economics, Indiana University: Working paper No. 96-020.

²⁴ Pedroni, P. (2004), “Panel Cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to the PPP Hypothesis”, *Econometric Theory*, 20, 597-625.

²⁵ Jenkins, Michael A., and Snaith, Sean M. (2005), “Test of Purchasing Power Parity via Cointegration Analysis of Heterogeneous Panels with Consumer Price Indices”, *Journal of Macroeconomics*, 27, 345-362.

²⁶ Drine, Imed, and Rault, Christophe (2007), “Purchasing Power Parity for Developing and Developed Countries. What Can We Learn from Non-stationary Panel Data Models?”, Institute for the Study of Labor (IZA), Germany: IZA Discussion Papers No. 2887.

The theory of purchasing power parity states that the exchange rate between two currencies is in equilibrium when the domestic purchasing powers of these two currencies at that rate of exchange are equal. This means that the exchange rate adjusts so that an identical good in two different countries has the same price when expressed in the same currency. PPP has been used extensively in theoretical models of exchange rate determination because of its simplicity.

The PPP theory can be tested in many ways. In this paper, I tested the PPP theory using the two most conventional methods. First, I tested whether the real exchange rate/the real effective exchange rate contains a unit root. If it is difficult to reject the unit root behavior of the real exchange rate/the real effective exchange rate, then the real exchange rate/real effective exchange rate follows a random walk and lacks convergence. On the other hand, if the real rate displays mean reversion, meaning it has a tendency to revert to a long run steady state variable; this indicates that relative PPP holds

The second approach is the test for cointegration between the nominal exchange rate and the relative prices. If the variables are cointegrated, the PPP theory holds.

The real exchange rate can be defined as:

$$Q_t = \frac{S_t P_t^*}{P_t} \quad (1)$$

Where: Q_t is real exchange rate at time t , S_t is nominal exchange rates at time t , P_t^* is the foreign price level at time t , and P_t is the price level at time t . If the domestic price level is increasing the outcome is real appreciation. Domestic goods become more expensive compared with foreign goods. Dissimilarly, if domestic prices fall relative to foreign prices, the outcome is a real depreciation.

Taking the logarithm of both side of (1) results in the following:

$$q_t = e_t + p_t^* - p_t \quad (2)$$

Where q , e , p^* and p denote logarithms of Q , E , P^* and P , respectively.

Equation (2) is used in this paper to examine if PPP holds in GCC by testing for unit root in q_t time series.

Additionally, the PPP relationship can be defined as follows:

$$k \frac{S_t P_t^*}{P_t} = 1, \quad (3)$$

Where k is constant, Taking the natural logarithm and rearranging (1) results in the relative PPP:

$$e_t = \alpha + rp_t, \quad (4)$$

Where $e_t = \log(S_t)$, $\alpha = -\log(k)$ and $rp_t = \log(P_t/P_t^*)$.

In general, cointegration approach is usually used to determine whether a group of non-stationary series is cointegrated. If some relevant variables are integrated of the same degree, say $I(1)$, the long run relationship among them should be stationary. VAR-based cointegration test is usually implemented using the methodology developed by Johansen (1991, 1995)²⁷. However, the OLS estimator of this technique has shown limitations, especially when applied to short and finite sample panel data, as it has strong biases (Pedroni, 2004)²⁸.

The literature on econometric theory has proposed a number of methods, which not only deal with the endogeneity bias correction, but also accommodate for nuisance coefficients and serial correlation in panel data. Some procedures are based on single equation approaches. These include fully modified OLS estimators (*FMOLS*) (Pedroni, 1999²⁹, Phillips and Moon, 2007³⁰), dynamic OLS estimators (*DOLS*) (Kao and Chiang, 2000)³¹, and pooled mean group estimators (*PMGE*) (Pesaran and Shin, 2003³²).

²⁷ Johansen, Søren (1991), "Estimation and Hypothesis Testing of Cointegration Vectors in Gaussian Vector Autoregressive Models," *Econometrica*, 59, 1551-1580. And:

Johansen, Søren (1995), *Likelihood-based Inference in Cointegrated Vector Autoregressive Models*, Oxford: Oxford University Press.

²⁸ Pedroni, P. (2004), "Panel Cointegration; Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to the PPP Hypothesis," *Econometric Theory*, 20, 597-625.

²⁹ Pedroni, P. (1999), "Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors," *Oxford Bulletin of Economics and Statistics*, 61, 653-70.

³⁰ Moon, Hyungsik Roger & Perron, Benoit & Phillips, Peter C.B., 2007. "Incidental trends and the power of panel unit root tests," *Journal of Econometrics*, Elsevier, vol. 141(2), pages 416-459, December.

³¹ Kao, C., and Chiang, M-H. (2000), "On the Estimation and Inference of a Cointegrated Regression in Panel Data," *Advances in Econometrics*, 15, 179-222.

³² Im, K. S., M. H. Pesaran, and Y. Shin (2003). "Testing for Unit Roots in Heterogeneous Panels," *Journal of Econometrics*, 115, 53-74.

Other approaches are based on vector error-correction representation (Breitung, 2002; Mark and Sul, 2003). These methods facilitate to pool information about common long run relationships from across the panel, while allowing the associated short-run dynamics and fixed effects to be heterogeneous across different members of the panel. By allowing data to be pooled in the cross-sectional dimension, non-stationary panel methods have the additional potential to improve upon limitations of short time series.

In this paper, a Fully Modified OLS, pooled-based panel cointegration estimation, suggested by Pedroni (2000), is used. Pedroni's *FMOLS* method is an efficient estimation procedure for systems of cointegrated variables. According to Pedroni, the *FMOLS* method leads to more robust results when working with small samples than the OLS method in situations where long-run cointegration relationships are heterogeneous across countries. *FMOLS* allows a general degree of cross-sectional heterogeneity in short-run responses and intercepts as follows:

$$e_{it} = \alpha_i + \beta_i rp_{it} + u_{it}, \quad (5)$$

where i indicates cross sectional unit and t indicates time. Whereas the long-run relationships are set to be common across the panel as follows:

$$e_t = \beta rp_t + u_t, \quad (6)$$

β is a cointegration coefficient and u_t is stochastic disturbance. Two conditions should be met to conclude strong PPP holds: (1) exchange rate (e_t) and CPI ratios (rp_t) are cointegrated, and (2) $\beta = 1$.

The mean group of the panel FMOLS for each cross section also can be stated as follows:

On the other hand, the weak version of PPP needs less restriction. The two variables can be cointegrated but the cointegrating vector does not equal unity. The weak version of the PPP hypothesis considers that although the nominal exchange rate and relative price levels may move together over long run, the movements may not be directly proportional. This means that the cointegrating slopes is different from 1. The presence of some factors such as international transportation costs, measurement errors, differences in price indices, and differential productivity shocks might explain why the slope of the cointegration is different from unity under the weak version of PPP.

B. PPP Specifications for GCC

In this section the procedures for panel unit root and panel cointegration are explored. For group GCC countries, the tests will be conducted based on panel approach. There are two main tasks. The first task is to verify the relative version of PPP by testing the unit root of the real exchange rate. If the real exchange rate is found to be stationary, relative PPP is confirmed. The second task is to investigate the long run relationship of nominal exchange rate and price levels via the cointegration test.

Usually, cointegration test starts with the verification of the order of integration. Basically, it is needed to assure that both variables of interest, e and rp , are integrated of the same degree; i.e. $I(1)$. This can be verified by conducting panel unit root test for both the level and the first difference of the time series. Then the test for cointegration can be conducted. Cointegration test verifies if there is a long run cointegration relationship between the two variables or not. If the null hypothesis of no cointegration is rejected, the main conclusion of PPP does not hold is confirmed. However, if the test results reject the null hypothesis, i.e. e and rp are cointegrated; there is a need to check the unity of cointegration coefficient. If the cointegration coefficient is not significantly different from unity, the strong PPP hold, otherwise the weak PPP holds.

This paper considers four different specifications of the models (3 and 4) to test PPP in GCC. The four specifications are as follows: (1) the spot exchange rate against US dollar and the relative price to US CPI, (2) the nominal effective exchange rate (neer) and the relative price to US CPI, (3) the spot exchange rate against Saudi Arabia's real and the relative price to Saudi's CPI, (4) the nominal effective exchange rate (neer) and the relative price to Saudi's CPI. The purpose of using these different specifications is to add more robustness to the results. Additionally, the first two specifications attest the extent of integration of GCC as a whole with international markets while the latter two specifications attest the extent of intra-integration of GCC among its member states. Using Saudi Arabia as a nominal country is relevant since it is considered as a dominant country in GCC. Also, the reason for using nominal effective exchange rate in addition to spot exchange rate is to avoid the implication of pegging the spot exchange rate of some of GCC member states to the dollar. Pegging the exchange rate to the dollar does not allow the spot exchange rate to adjust for relative prices. Nominal effective exchange rate, on the other hand, is set based on the trade of a country with its primary partners and fluctuates more frequently.

C. The data

Given the specifications mentioned in the previous section, the paper considers the following time series: end of the period annual exchange rate to the dollar and aggregate consumer price index ratio for 6 countries of GCC namely, Bahrain, Kuwait, Qatar, Oman, Saudi Arabia and United Arab Emirates. The data covers the period from 1990 through 2007. The main source of the data is IMF-IFC data bases. The consumer price index for UAE however, is unavailable from this source and is collected from both Dubai and Abu Dhabi Chambers of Commerce web sites³³. The nominal exchange rates between each country and Saudi Arabia's real are calculated using cross-exchange rate between the country exchange rate and US dollar. Additionally, the nominal effective exchange rates are collected from the World Bank World Development Indicators (WDI). This time series is unavailable for Kuwait.

IV. Empirical Results

As mentioned above. Two different approaches are conducted to attest whether PPP holds for GCC. I started with the testing whether the real exchange rate/the real effective exchange rate contains a unit root using panel-based unit root tests. The second approach adopted by this paper is the panel cointegration.

First: The Results of Panel Unit Root Test for *RER* and *REER*

Table (1) shows the results of panel-based unit root tests for both *RER* and *REER*. Both variables have unit root in the level of the time series. The first difference of the variables have are stationary.

Table (1) Panel-Based Unit Root Tests for *RER* and *REER*

Test	RER ^a		REER ^b	
	Level	First Diff.	Level	First Diff.
Null: Unit root (assumes common unit root process)^c				
Levin, Lin & Chu t*	-1.21	-2.37*	-2.50	-2.34*

³³ The paper follows some extrapolation techniques to come up with a complete CPI time series with the same 2005 base year.

Null: Unit root (assumes individual unit root process)^e				
Im, Pesaran and Shin W-stat	1.50	-2.79*	-0.21	-1.66*
ADF - Fisher Chi-square	8.14	32.41*	1.04	6.11*
PP - Fisher Chi-square	4.92	32.89*	1.15	6.40*

a. RER: real exchange rate

b. REER: real effective exchange rate

* indicates significant at 5% significance level or less.

Apparently, the results shown in table (1) confirm that relative PPP does not hold for GCC.

Second: The Results of Panel Cointegration of PPP

As mentioned above, the empirical results start with the verification of the order of integration between the variables of interest using panel data unit root tests. The next step is to verify the existence of long-run cointegration relationship between the exchange rate and the relative price.

1. Panel-Based Unit Root Tests

Recent literature suggests that panel-based unit root tests have higher power than unit root tests based on individual time series. Table (1) show the results of different five types of panel unit root tests: Levin, Lin and Chu (2002)³⁴, Im, Pesaran and Shin (2003)³⁵, Fisher-type tests using ADF and PP tests (Maddala and Wu (1999)³⁶ and Choi (2001)³⁷, and Hadri (2000)³⁸. The four types of panel unit root tests are conducted for the level and the first difference of the time series of interest and for all different specifications mentioned previously.

Table (2) Panel Unit Root Test Statistics

Test	(1) ^a	(2) ^b	(3) ^c	(4) ^d
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³⁴ Levin, A., C. F. Lin, and C. Chu (2002), "Unit Root Tests in Panel Data: Asymptotic and Finite-Sample Properties," *Journal of Econometrics*, 108, 1-24.

³⁵ Im, K. S., M. H. Pesaran, and Y. Shin (2003), Op.Cit.

³⁶ Maddala, G. S. and S. Wu (1999). "A Comparative Study of Unit Root Tests with Panel Data and A New Simple Test," *Oxford Bulletin of Economics and Statistics*, 61, 631-52.

³⁷ Choi, I. (2001). "Unit Root Tests for Panel Data," *Journal of International Money and Finance*, 20: 249-272.

³⁸ Hadri, Kaddour (2000). "Testing for Stationarity in Heterogeneous Panel Data," *Econometric Journal*, 3, 148-161.

	Level	First Diff.						
Null: Unit root (assumes common unit root process)^e								
Levin, Lin & Chu t*	3.90	-6.81*	4.78	-5.78*	0.04	-7.00*	2.09	-6.35*
Null: Unit root (assumes individual unit root process)^e								
Im, Pesaran and Shin W-stat	2.31	-6.19*	3.74	-4.10*	1.89	-6.90*	3.49	-5.22*
ADF - Fisher Chi-square	8.77	58.06*	10.31	67.07*	4.17	46.82*	2.62	55.80*
PP - Fisher Chi-square	7.99	57.11*	7.40	63.19*	2.51	35.63*	5.49	48.48*

- c. Panel unit root of spot exchange rate to the dollar and relative prices to US.
- d. Panel unit root of *neer* and relative prices to US.
- e. Panel unit root of spot exchange rate to the Saudi's Real and relative price to Saudi Arabia.
- f. Panel unit root of *neer* and relative price to Saudi Arabia.
- g. Unit root tests include a constant and time trend in the data.
- * Indicates significant at 5% significance level or less.

The table (2) confirms the existence of common unit root process for the level of the time series based on the Levin, Lin & Chu t statistic while we fail to reject the stationarity hypothesis for the first difference of the time series with 1% significance level. This result is typical result for all four specifications. Additionally, the existence of individual unit root process is confirmed as well for the level of the data by Fisher-type tests using ADF and PP tests. Moreover, the first difference of the data is significantly stationary for all specifications. The main conclusion that can be stemmed from the results shown in this table is that both exchange rates and relative prices are integrated of the same degree, namely $I(1)$. Accordingly, the next step of the analysis is to attest for the existence of a long-run cointegration relationship between the exchange rates and the relative prices for the four specifications of the empirical analysis.

2. Panel Cointegration Test

Recent literature has focused on tests of cointegration in a panel setting. This section of the paper demonstrates the results of Pedroni and Kao tests those are based on Engle-Granger (1987) two-step (residual-based) cointegration tests. The Fisher test which is a combined Johansen test is presented as well. Table (2) shows the results of cointegration analysis of the four specifications assessed by this paper. It is worthy to mention that Pedroni (1997) statistics are one-sided tests with a critical value of

- 1.64 ($k < -1.64$ implies rejection of the null hypothesis of no cointegration), except the v-statistic that has a critical value of 1.64 ($k > 1.64$ suggests rejection of the null of no cointegration)³⁹. Note that the means and variances used to calculate the Pedroni statistics are reported in Pedroni (1999, Table 2), with heterogeneous intercept included⁴⁰.

All tests presented in table (3) indicate that the null of no cointegration hypothesis is difficult to be rejected. Obviously, the results confirm that relative PPP does not hold for GCC. This results support the previous results of the unit root in RER and REER variables.

Table (3) Panel Cointegration Statistics

Tests	(1) ^a	(2) ^b	(3) ^c	(4) ^d
Panel Cointegration Tests^e				
panel v-stat	1.36	0.41	0.24	0.17
panel rho-stat	0.46	0.32	-0.57	0.38
panel pp-stat	0.68	0.14	-1.15	0.17
panel adf-stat	1.53	-0.12	-0.51	-0.42
Group Cointegration Tests^e				
group rho-stat	2.50	1.35	0.46	1.31
group pp-stat	2.85	0.93	-0.76	0.91
group adf-stat	2.31	0.56	-0.23	0.24
Cointegration Coefficient				
	-1.02 (-1.33)	15.96 (-6.24)*	2.93 (-2.32)	-346.07 (-5.20)*

- Panel cointegration between spot exchange rate to the dollar and relative prices to US.
- Panel cointegration between *neer* and relative prices to US.
- Panel cointegration between spot exchange rate to the Saudi's Real and relative price to Saudi Arabia.
- Panel cointegration between *neer* and relative price to Saudi Arabia.
- All reported values are distributed $N(0,1)$ under null of no cointegration.

Pedroni (2001) reports that the PPP does not hold true for 20 countries for post Bretton Woods period. Basher and Mohsin (2004) also show that the PPP does not hold for ten Asian developing countries over the period from 1980 to 1999. The results of this paper are consistent with Pedroni (2001) and Basher and Mohsin (2004).

³⁹ Asymptotic and finite sample properties of pooled time series with an application to the PPP hypothesis: New results, Working Paper, Indiana University (1997)

⁴⁰ Pedroni, P. (1999), "Critical Values for Cointegration Tests in Heterogeneous Panels with Multiple Regressors," Op.Cit.

V. Conclusions

Probably, the GCC countries are the most homogeneous union. The six countries (Bahrain – Kuwait- Oman – Qatar – Saudi Arabia – UAE) are sharing a common history, same language, and culture. They are mainly oil exporters (with the exception of Bahrain). The GCC countries have already satisfied many of the preconditions for a currency union. GCC countries have achieved virtually unrestricted intraregional mobility of goods, national labor, and capital, and prudential regulations and supervision of the banking sector are being gradually harmonized. Overall the GCC meets the generally accepted criteria for a single currency among its members, namely proximity, size, fluctuations of output, trade structure, and inflation performance (Berengaut and Elborgh-Woytek 2006). Much progress has been made toward achieving the goal of a full-fledged GCC monetary union. All members except Kuwait have pegged their currencies to the US dollar since 2003, a common external tariff was introduced in 2003, and the common market was launched on January 1, 2008. Although the GCC currencies have been de facto pegged to the US dollar for decades, a single GCC currency is expected to encourage trade and financial integration, and facilitate foreign direct investment, although there are questions as to whether the GCC can be considered an “optimum currency area” (Rose 2000; Frankel and Rose 1998 and 2000; Buitier 2008).

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Cross Cultural Affects on Total Cultural Intelligence

Student Paper

Andrew Merrick

School of Business

Quinnipiac University

275 Mount Carmel Ave

Hamden, Connecticut 06518

USA

Andrew.merrick@quinnipiac.edu

Abstract

As organizations globalize and the workforce becomes more diverse, it is increasingly important to understand why some individuals function more effectively than others in culturally diverse situations. (Erez & Earley, 1993; Gelfand, Erez, & Aycan, 2007; Triandis, 1994) Positive cross cultural interaction is of utmost importance for the success of expatriates. Being in a more globalized world, expatriates and cultural intelligence is becoming increasingly more important to understand for modern business. Knowing what affects an expatriate's success most, is something that is and will be, of utmost importance for businesses in the years to come. Cultural intelligence (CQ) is a theoretical extension of contemporary approaches to understanding intelligence (Earley & Ang, 2003). Hofstede's 4 dimensions are Uncertainty Avoidance, Power Distance, Masculinity, and Individuality and have been widely accepted and used throughout the business world as a leader in cultural personality. Those with a higher CQ tend to have a higher performance in situational experiences as well as on tasks characterized by cultural diversity. Also, those with higher CQ are more effective at making decisions about inter-cultural situations. Making better decisions leads to greater performance, interactions, and most importantly the ability to build upon their current knowledge. When a subject has the ability to make better decisions, it enables the subject to see new possibilities leading toward new experiences, deeper knowledge, and a stronger foundation for CQ. It has been widely agreed the "Big Five Personality Traits" are Extraversion, Openness, Emotional Stability, Conscientiousness, and Agreeableness. (Digman, 1990) There has been evidence supporting the claim that openness positively affects CQ. The aim of this project is to gauge what kind of impact the facts have on Total Cultural Intelligence and which one, of a 2 nation survey scores higher for each variable.

Introduction

As organizations globalize and the workforce becomes more diverse, it is increasingly important to understand why some individuals function more effectively than others in culturally diverse situations. (Erez & Earley, 1993; Gelfand, Erez, & Aycan, 2007; Triandis, 1994) Having a more globalized world, expatriates and their level of cultural intelligence are becoming more important role in the modern business environment. Knowing what affects an expatriate's success most, is something that is and will be, of utmost importance for businesses in the years to come. Ang, Van Dyne, and Koh (2006) showed discriminant validity of the four dimensions of Cultural Intelligence (CQ) compared to the Big Five personality traits and demonstrated meaningful relationships between specific personality characteristics and specific aspects of CQ.

National culture is believed to have an impact on Total Cultural Intelligence (TCQ). The dimensions of Cultural Intelligence and the Big Five Personality Factors are seen to contribute to overall TCQ. Country is assumed to play a role in developing the culture by regulations, geographic location, history, and other similar factors. Therefore, the

purpose of this study is to examine how much the Big Five personality dimension of openness, combined with Total Cultural Intelligence (TCQ) effect a subject. The results of this paper could potentially help contribute to expatriate success and the development of a higher TCQ.

Cultural Intelligence (CQ)

Cultural intelligence (CQ) is a theoretical extension of contemporary approaches to understanding intelligence (Earley & Ang, 2003). CQ is defined as the capability to function effectively in culturally diverse settings. Earley and Ang (2003) theorized that CQ is a multidimensional concept that includes metacognitive, cognitive, motivational, and behavioral dimensions. Their work is an extension of Sternberg and Dettermans' (1986) framework of the multiple foci of intelligence. The multifactor view from Earley and Ang (2003) is compatible to the modern views of intelligence being a complex multifactor entity. It is a separate construct of intelligence such as general intelligence and emotional intelligence. It has been linked directly to the Big Five Personality Factors. It is unclear whether or not which of the factors affects the four different components of CQ. (Ang, Van Dyne, & Koh 2006) The Big Five Personality Factors will be discussed in the ensuing section.

It is important to take into consideration that what is conceived as smarts or intelligence may differ depending upon the culture. For instance, some cultures may favor an individual who has gone through many years of schooling, where others may see an individual's grades over those years of more importance (more on this later). Those with a higher CQ tend to have a higher performance in situational experiences as well as on tasks characterized by cultural diversity. Also, those with higher CQ are more effective at making decisions about inter-cultural situations. Making better decisions leads to greater performance, interactions, and most importantly the ability to build upon their current knowledge. When a subject has the ability to make better decisions, the ability enables the subject to see new possibilities leading toward new experiences, deeper knowledge, and a stronger foundation for CQ. Early and Ang (2003) suggests that the concept of cultural intelligence consists of four distinct factors which they consider to be TCQ when combined.

The first factor of Earley & Ang's (2003) work is metacognitive CQ. Metacognitive CQ is an individual's level of conscious awareness during any cross-cultural interactions. People with higher metacognitive CQ, consciously question their own cultural assumptions, reflect during interactions, and adjust their cultural knowledge when interacting with those from other cultures. Being fully aware of what is going on in all aspects (listening, mannerisms, tone, space, etc) are the crucial focal points of metacognitive CQ. Metacognitive CQ involves higher level cognitive ability in order to process at a deeper level (Flavell, 1979; Nelson, 1996). In short, it is the mental capability to acquire and understand cultural knowledge. Metacognitive CQ is critical for the following three reasons. First, it promotes active thinking about people and situations when cultural backgrounds differ. Second, it triggers critical thinking about habits, assumptions, and culturally bound thinking. Third, it allows individuals to evaluate and revise their mental maps, consequently increasing the accuracy of their understanding (Van Dyne, Ang, Koh 2006).

The second factor, cognitive CQ, reflects knowledge of norms, practices, and conventions in different cultures that has been acquired from educational and personal experiences. The cognitive factor of CQ therefore refers to an individual's level of cultural knowledge or knowledge of the cultural environment. These include sufficient knowledge of oneself, as embedded in the cultural context of the environment. When sufficient knowledge is present, it influences people's thoughts and behaviors. This in turn gives a person better appreciation of various cultural surroundings (Ang & Van Dyne 2008). In my opinion cognitive CQ is portrayed as simple performance or even subconscious mimicking, as opposed to metacognitive CQ which is understanding why and thinking and about why or how to improve. Van Dyne, Ang, Koh (2006) say the importance of cognitive CQ exists solely because knowledge about cultural similarities and differences is the foundation of decision making and performance in cross-cultural situations.

The third factor of the multidimensional CQ model is behavioral CQ. Behavioral CQ reflects the capability to exhibit appropriate verbal and nonverbal actions when interacting with people from different cultures. Behavioral CQ refers to the extent to which an individual acts appropriately (both verbally and non-verbally) in cross-cultural situations. These are the most salient and observable features of social interaction, and therefore highly important Ang & Van Dyne (2006). Behavioral CQ is the most observable and sometimes the most important type of CQ. If a subject exhibits a low behavioral CQ in conversation, it could potentially lead to a complete lack of communication

and respect (due to observable “mistakes”) between parties. In the business world, this would most likely exhibit a loss of potential cross-cultural business, but definitely a loss of efficiency and communication. This leads to the employees or future prospects, working counterproductively, which is bad for business.

The fourth and final factor is motivational CQ. Motivational CQ reflects the capability to direct attention and energy toward learning about and functioning in situations characterized by cultural differences (Ang & Van Dyne 2008). Ang, Van Dyne, and Koh (2006) recognize motivational CQ as a special form of self-efficacy and intrinsic motivation in cross-cultural situations. These two valuable traits play an important role in CQ because successful intercultural interaction requires a basic sense of confidence and interest in novel settings. Individuals with a high motivational CQ are motivated to experience new and varied cross-cultural encounters. These people value encounters and interactions in different cultures, and learn to direct attention and effort to stimulate their knowledge.

Personality and Culture

Since McDougall (1932) wrote “personality may be an advantage and broadly analyzed into five distinguishable but separate factors, namely intellect, character, temperament, disposition, and temper...” research has been conducted quite extensively to distinguish the most important factors of personality, and their validity. Tupes and Christal’s (1961) also found five factors, but they differ from McDougall. Tupes and Christal’s factors are surgency, emotional stability, agreeableness, dependability, and culture. Although Tupes and Christal’s factors are not the exact same as today, it is because of their work that research has been done in the field of relating the personality factors to cultural intelligence. In 1990 Digman identified 5 personality factors and labeled them, which are widely used today. The labels of extraversion, openness, emotional stability, conscientiousness, and agreeableness consist of the Big Five Personality Factors (Digman, 1990).

There is evidence showing that openness positively increases CQ. Although the name of this dimension has been named differently by many, such as intellect, culture, openness (McCrae & Costa, 1985), the most agreed upon term is openness to experience. Traits derived from this dimension include being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive. All of these traits are positive attributes to a person and would positively impact any kind of intelligence.

Since the term openness has also been referred to as Culture, Geert Hofstede has performed extensive research since 1967 on various aspects of Cultural Dimensions. Between 1967 and 1973 Hofstede analyzed 70 different countries throughout IBM on the aspects of culture in the workplace. Hofstede created 4 dimensions, which he saw as most pertinent to grading and understanding varying cultures. Hofstede’s work has been revered throughout the business world as a leader in cultural personality. Hofstede’s dimensions are Power Distance, Individualism, Masculinity, and Uncertainty Avoidance. Bear in mind the example used earlier with the difference of opinion on years of education and grades of education when reading the next 4 paragraphs. One’s culture impacts perceptions of education.

Power Distance (PDI) is the extent to which the less powerful members of organizations and institutions, including families, accept and expect that power is distributed unequally. It suggests that a society’s level of inequality is endorsed by the followers as much as by the leaders. PDI plays roles in all aspects of the country; political, societal, organizations, families, companies, etc.

Individualism (IDV) is the degree to which individuals are integrated into groups. On the individualist side we find societies in which everyone is expected to look after him/herself and his/her immediate family. On the collectivist side, we find societies in which people from birth onwards are integrated into strong, cohesive in-groups, often extended families. Unquestioning loyalty often comes hand in hand with a collectivist society.

The Masculinity (MAS) dimension is the most misinterpreted and complex out of the 5 dimensions. MAS refers to the distribution of roles between the genders. The IBM studies revealed that (a) women’s values differ less among societies than men’s values; (b) men’s values from one country to another contain a dimension from very assertive and competitive and maximally different from women’s values on the one side, to modest and caring and similar to women’s values on the other. The assertive pole has been called ‘masculine’ and the modest, caring pole ‘feminine’. The women in feminine countries have the same modest, caring values as the men; in the masculine

countries they are somewhat assertive and competitive, but not as much as the men, so that these countries show a gap between men's values and women's values.

Uncertainty Avoidance Index (UAI) deals with a society's tolerance for uncertainty and ambiguity. It indicates to what extent a culture programs its members to feel either uncomfortable or comfortable in unstructured situations. Uncertainty avoiding cultures try to minimize the possibility of such situations by strict laws and rules, safety and security measures. **There is less tolerance for new ideas, changes, and beliefs. Change that occurs in countries with high UAI exists because of the need to illuminate uncertainty and/or new problems, ideas, people, etc.**

Table 1. Hofstede Scores				
Country	PDI	IDV	MAS	UAI
France	68	71	43	86
United States	40	91	62	46
World Average	55	43	50	64

PDI is something that exhibits a certain society's need to obey social "certainties" in leadership. Low PDI scores in the US show that the equality exhibited in power should give it a more diverse power structure as well as peoples who can go outside the "ordered" power structure and in a new direction. This exhibits a higher openness score. In addition, institutions that are high in PDI tend to be more hierarchical with more reliance on formal rules. This suggests that their openness will be less open to things outside these structures. In conjunction with PDI, UAI is the most closely related based upon the similar descriptions from the two researchers on their respective topics. McCrae & Costa's traits for openness derived from this dimension include being imaginative, cultured, curious, original, broad-minded, intelligent, and artistically sensitive. Hofstede's traits for UAI are resistance to change, loyalty to group or product, and suspicion of unknown. The similarity in these definitions should explain a large portion of who will have a high level of openness. In the comparison between France and the United States on Uncertainty Avoidance, it Hofstede shows that France has the higher level of Uncertainty Avoidance. Since France is 40 points above the US and 22 points above the World Average, the US will have a higher level of openness. When one is open to experience it can be argued that they would also tend to be more comfortable with uncertainty of what that experience would bring. Because more certainty is valued in France, it suggests less of a propensity to expose oneself to the uncertainty inherent in the opening of oneself to new experiences. Thus the first hypothesis of this study is as follows.

Hypothesis 1: Openness in United States subjects is higher than in French subjects

More factors than openness impact TCQ such as languages spoken and experiences such as number of countries visited, culture, country, and gender. Given geographical considerations and the propensity and ease of travel in Europe it would be expected that these would greatly add to TCQ in France. Therefore I hypothesize the following.

Hypothesis 2: France's Total Cultural Intelligence is higher than America's

What is referred to as Country in the next hypothesis is synonymous to Culture, but is expanded out to include language and geographic location. Also, since institutions range from formal and informal constructs drawing from aspects similar to culture to laws and regulations it is implied that the word country is better suited. Although personality does have an impact on TCQ, there are other things that impact TCW as mentioned before. These other facets are believed to be working together to improve TCQ, rather than superseding one another. Personality and culture are separate constructs, and as such they may be expected to have an independent impact on cultural intelligence. This, the final hypothesis is as follows.

Hypothesis 3: Openness and the country explain more variance in TCQ than either openness or the country alone

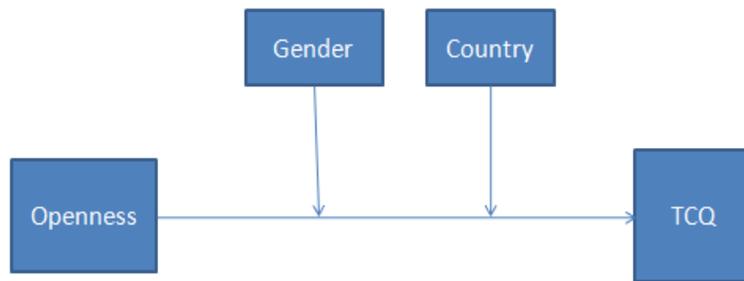


Figure 1. Construct of Hypotheses

Sample

There were a total of 104 surveys included in the sample used for the data collection from the US. In total there were 118 undergraduate business students from one Northeastern University. Of these students four chose not to complete the survey. The remaining students took the survey voluntarily. A total of five students did not fully complete the survey resulting in their results being discarded. An additional five surveys were discarded because the subjects were non-US citizens. The US sample also includes males (64) and females (40) with an age group of 18-22 with two outliers at ages 23 and 24. The same survey was given to University students in France. Only French Citizens were used in the sample knocking down their sample size to 68 from 113. The gender splits from the original France sample include a total of male (30) and female (38), as well as an age group of 20-26 with five outliers at ages 27, 27, 28, 29, and 32.

Table 2. Sample Breakdown	
Male	94
Female	78
US	104
French	68
Age (mean)	21.24
Total	172

Instruments

The questionnaire used consisted of 50 Likert-Scale self perception questions, of which 22 were used in the survey. This is due to the nature of the questions that explicitly pertained to cultural intelligence (Ang et al, 2008). A Likert-Scale is an ordered and one dimensional scale from which respondents choose one option that best aligns with their view (Straker, 2008). These questions consisted of a 7 point scale, with 1 equaling “strongly disagree” and 7 equaling “strongly agree. In addition the Likert-Scale questions, the student were also asked to fill out basic demographic questions. This study used openness to experience from the Big Five Personality Factors which was measured by an instrument developed by Gosling et al (2003). According to the authors of this survey, it should take between 10-20 minutes to complete. There were 2 questions for the personality trait openness to experience. In order to cut down on fatigue there was another survey that could have been used on personality that constituted of 40 questions but just used the 2 questions from Gosling.

Results

	France (TCQ)	US (TCQ)	France (Openness)	US (Openness)
Mean	4.6536	4.3236	5.4425	5.5625
Standard Deviation	0.7009	0.6784	1.1075	1.0017
Range	4.4792	3.8708	5.5000	4.0000
Minimum	2.0042	2.3917	1.5000	3.0000
Maximum	6.4833	6.2625	7.0000	7.0000
Count	113.0000	104.0000	113.0000	104.0000

The mean score for both TCQ and openness support both hypothesis 1 and 2. Further supporting evidence regarding the validity of hypothesis 1, derives from the minimum score. The maximum score was slightly higher in France for TCQ which supports hypothesis 2. Both countries scored a survey maximum of 7 for the openness maximum. The range and standard deviation were both in favor of the US which shows that answers given in the US were more uniform, lowering the amount of outliers skewing data.

	Openness - US	Openness – France
Mean	5.56	5.32
Variance	1.01	1.24
Observations	104	68
P(T<=t) one tail	.0712	

The mean in openness for the US was .25 higher than in France. Having a higher score in openness exhibits a higher propensity to openness traits. Although the total number of observations was lower in France, there was still a significant amount that the results are not presumed to be altered. The results from this data set support the first hypothesis.

	TCQ - US	TCQ – France
Mean	4.32	4.67
Variance	.46	.48
Observations	104	68
P(T<=t) one tail	.0007	

The total mean for TCQ was higher by .35 in France when compared to the US. The significance of these results shows that there are other factors that play a larger role in TCQ. This could be one of many variables. The results from this data set support Hypothesis 2.

	Model 1	Model 2	Model 3
Gender	.014 (.11)	-.05 (.11)	-.15 (.10)
Country		.36 (.11)***	.43 (.10)***
Openness			.23 (.05)***
TCQ	Dependant	Dependant	Dependant
R sq	0	.06	.18
Significance	Ns	.005	.000
Observations	172	172	172

*** P is <.001

Based upon the statistics above in addition to the literature provided, gender doesn't explain or account for much of TCQ. By adding country, 6% of variance is now explained (which is at a significant .005). As openness was added the weight of gender decreased, while the weight of country increased. Having three highly significant variables are statistics helping to validate the hypothesis 3. Having a total of 18% of TCW explained is a significant result.

Discussion

Table 6. Final Results	
Hypothesis	Result
H1: US Openness > France Openness	Supported
H2: France TCQ > US TCQ	Supported
H3: Openness + Country explains more together than individually	Supported

Overall the results were significant and fully supported. Having said that, gender remained insignificant throughout each of the regression tests. This indicates it is not a reliable measure of TCQ. Country remained a very high predictor for TCQ, and even more so with the addition of openness. There is something about the variable "country" that has huge impacts for TCQ (see future research). Although a considerable amount of TCQ was explained by country and openness, there is still 82% more of TCQ to be explained (see future research). Some interaction between openness and country was expected, but more than what was anticipated. With the addition of openness to country there was an extra 12% explained over the 6% of country by itself. Significance explained of TCQ increased with each variable addition.

One major implication of this data is how the information available could help support expatriate training. The results also indicate which expatriates might have an easier time adapting to their new role and country. Knowing information like this could help bring the success rate of expatriates up since there is room for improvement. In addition to the possibility for improved training, the results lead to an easier way to gauge who would be a successful candidate. Some examples of improved training would include better aptitude tests, more education and training to improve any factors which increase TCQ. As we have learned from the study the training can gear directly to improve openness. With a better sense of an expatriates aptitude for cross cultural interactions, it would save companies a lot of money and save the expatriates who do not successfully complete their missions the grief of not succeeding. Openness and country significantly impacted total cultural intelligence. The two were able to be combined for a greater affect on total cultural intelligence. Overall, openness was able to be positively moderated by gender and country to explain a significant portion of total cultural intelligence.

Limitations

This study had a number of factors that limit the ability to generalize beyond the subjects involved in this study and which might be improved with further research. The sample was similar in the sense of geographic location, and age which limits the diversity of our subjects. This was due to the sample being drawn from one specific class and at one University. Another limitation (which is not believed to have had any effect on the data selection), but is worth mentioning; those who were surveyed did not have any incentive, as it was simply voluntary. This could have led to misconstrued data from lack of care attended to the survey. Of the students surveyed, none had a requirement to study abroad for a semester. A different University may have requirements for students which may be different (i.e. require International Business students to study abroad for a semester), and therefore could have yielded different results across the board. Again, there are similar limitations for the French study as the US study. Region, requirements, age, major, education, culture, and voluntary participation all arose from the French sample. Another limitation of the French study was that I was not there to conduct the survey and gauge a hands-on and in person view of the French culture. A limitation of the survey is that it only provided 2 questions for openness to experience, which, although being quality questions leaves room for the possibility of skewed results. Although cutting down on possible fatigue from the personality questions, this has the potential to limit more accurate results.

Future research

Knowing the limitations, helps pinpoint what can be done for future research. It would be much better if the sample size and method be taken at different universities throughout the US (Northern, Southern, Eastern, Western, Central, and combinations of all), and the French from other regions in the country. This will help pinpoint new types of people who grow up in different environments; which would ideally yield different results. This study could also possibly be expanded upon to find a more in depth survey of openness to experience, ideally yielding more accurate results with less of a deviation. As noted earlier there are other factors that affect TCQ. Some further research may be beneficial to see what is contributing to the remaining 82% of TCQ and which are most influential.

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Entrepreneurial Triggers, Barriers, Intent, and an International Model of Entrepreneurship

Research Paper

Robert L. Engle
School of Business SB-DNF
Quinnipiac University
275 Mt. Carmel Ave
Hamden Connecticut 06518
USA
robert.enge@quinnipiac.edu

Christopher Schlaegel
Otto-von-Guericke University
Universitaetsplatz 2
Postfach 4120
D-39106 Magdeburg
Germany
christopher.schlaegel@ovgu.de

Nikolai Dimitriadi
Rostov State Economic University
Bolshaya Sadovaya str. 69
Office 316
Rostov-on-Don
Russia, 344002
ndimitriadi@yandex.ru

Abstract

Developed using international data, this study presents a model of entrepreneurship and summarizes the results of cross-country studies that were conducted to examine the model. We then examine for the first time the role of entrepreneurial triggers within the model and well as perceived barriers to the starting of new business ventures. In addition, we examine possible support for the entrepreneurial intent and entrepreneurial status relationship. To improve our understanding of country specific entrepreneurial intent, triggers, and barriers we use personal interview data from 215 German, Russian, and U.S. entrepreneurs. The results for the three countries indicate that entrepreneurial intent is an important predictor of entrepreneurial behavior and that while triggers and barriers are important model elements they do have similarities that vary across countries.

Introduction

Researchers have attempted to examine the entrepreneurial process from many perspectives. Such attempts to model the process of entrepreneurship has been from the perspective or focus on performance (Iakovieva and Kolvereid, 2005), individual characteristics and situation (Learned, 1992), the individual and exploitation of opportunities (Shane, 2003), collective-institutional factors (Wennekers, Uhlaner, and Thurik, 2002; Verheul et al. 2002), the cognitive process of the individual which produces intention (Kreuger, Reilly, and Carsud, 2000; Engle, et al. 2010), organizations and social structures (Aldrich and Martinez, 2003), among others. All of these have been important in adding to our understanding of the entrepreneurial process. The focus of most of these models allow for a concise research approach which assists in the developing of a realistic research methodology.

Other more comprehensive and complex models of entrepreneurship have also been proposed which combine many elements of the more focused models (Loustarinen and Gabrielsson, 2004; Fayolle, 2004). Such models tend to be more difficult to test given their complexity and number of constructs. As a result some model constructs tend to be less well defined and tested. For example, Fayolle's (2004) model suggests the importance of the role of one or more "triggers" in the entrepreneurial process, but the concept of entrepreneurial triggers, while recognized as a potentially important area for further research (Becherer, Mendenhall, and Eickoff, 2008), has not been either well defined or examined in the literature. An example of another construct relationship that has not been fully examined is the degree to which entrepreneurial intent and entrepreneurial status is related. This may, in part, be due to the variance in time between intent and action, and/or the need for different subject populations required to test for entrepreneurial intent (Kreuger, Reilly, and Carsud, 2000). It may also be due to an assumption of a relationship resulting from the strength of the intent – behavior relationships found in previous research in other social behavior fields (Ajzen, 1991). In addition, researchers have noted that cross-cultural entrepreneurship research is still in its infancy and suggest the importance of more cross-cultural research in this area (Engelen, Heinemann, and Brettel, 2009; Tsui, Nifadkar, and Ou, 2007.)

This paper introduces a comprehensive model of international entrepreneurship. The authors have recently conducted a number of studies examining the relationships of most of the proposed model elements. The results of these studies will be summarized in this paper and the final two unexamined relationships of the model are being examined in this study using 238 entrepreneur personal interviews in Germany, Russia, and the U.S. The two research questions addressed from a cross-cultural perspective in these interviews are:

1. Do entrepreneurial triggers play a role in the entrepreneurial process and what is the nature of these triggers? Are there perceived barriers to starting a new business venture that may interrupt the entrepreneurial process?
2. Is there a sustained entrepreneurial intent prior to the act of starting a new business venture?

We will begin by presenting our model, defining the model constructs, and briefly reviewing our research that examined the various construct relationships. We will then examine the methodology and results which address this study's research questions and discuss the implications of these findings.

An International Model of Entrepreneurship

Entrepreneurship and its individual, community, and national benefits are sought after by virtually every nation. The individual may seek any number of the many benefits of entrepreneurship including but not limited to wealth, autonomy, achievement and personal fulfillment, the ability to innovate, or social status. The community may seek the jobs, increased tax-base, economic growth, or the resultant attractiveness to residents and newcomers. The nation may seek the entrepreneurs' contribution to economic growth and development through a more positive balance of trade and the building of a middle class. Given the many important benefits of entrepreneurship, defined here as the starting of a new business venture (Lim et al. 2010), it is no small wonder that much research has gone into understanding of entrepreneurial behavior.

Lewin's (1936) most well known formula for human behavior, $B = f(P,E)$, states that behavior is a function of the person and the environment. Jones (1998) summarized a half century of subsequent research by saying that during this time "no one has ever argued that behavior is entirely determined by the actor's pre-existing dispositions or that all variance in behavior can be accounted for by an analysis of situational cues or requirements" (p.8). Our model of entrepreneurship (see Figure 1) is consistent with Lewin's view and addresses both individual and environmental characteristics. In its development we attempted to recognize much of the previous work contained in the literature, especially a model developed by Fayolle (2004). We also developed this model with the intention of having a set of relevant constructs that would recognize not only the institutional environment but also the importance of the individual, while at the same time has application across nations and cultures.

Our work consists of a series of 7 studies including this study, plus various necessary pilot studies. All model relationships tested involved multiple countries ranging in numbers from 14 countries and 2,165 subjects to 3 countries and 215 subjects. In general, our work supports this model for all countries in which the relationships were tested, but as might be expected countries often varied as to the specific elements within various constructs. As mentioned above, our objective here is to review our work in this regard and unfortunately we must recognize that space will not permit us to share the great deal of work others have done with some parts of this model.

- **Insert Figure 1** -

The Role of Cognition

The first portion of the model that we tested was the central part of the model consisting of attitude towards act, social norms, and perceived self-efficacy and their relationship with entrepreneurial intent (Engle et al. 2010). This study used Ajzen's (1991) Theory of Planned Behavior which based on cognitive theory suggests that there is no

better predictor of a particular behavior than the intent to behave in a particular way and that such intent is shaped by the attitudes towards that behavior and whether or not the outcomes of that behavior would be considered desirable (in the case of entrepreneurship – autonomy, wealth, achievement), the significant encouragement and support from significant others, and the belief that one has concerning their ability to do what is necessary to carry out that behavior (perceived self efficacy). We tested this model in 12 countries representing all 10 global regional cultural clusters as determined by House et al. (2004) using a sample of 2,065 university student subjects who were nearing graduation and in the process of making career decisions. The results suggested that in all 12 countries the model predicted entrepreneurial intent at a significant level. However, the results also indicated, as Ajzen (1991) suggested, that the mix of three antecedents of entrepreneurial intent varied between countries with all three significantly predicting intent in Russia and Finland, only one of the three doing so in Costa Rica, and the rest of the countries having two of the three antecedents significant. A finding of special importance was that all 12 countries had the antecedent, social norms, as a significant predictor of intent.

As a result of the finding that we decided to take a closer look at the social norms factor in another study (Engle, Schlaegel, & Delanoe, 2009). The social norms factor as described by Ajzen (1991) and used in our studies included three categories of significant others including family, friends, and role model/mentor and the degree to which each group were important and were perceived as supportive of their becoming entrepreneurs. With an enlarged sample of 2,165 university students from 14 countries representing all 10 global regional cultures the results of this study suggested that not only was the social norms construct a significant predictor of entrepreneurial intent (EI) in all 14 countries, but that all three model social groups within each country sample were found to significantly influence entrepreneurial intent with family influence being significant in 11 of the 14 countries and role models/mentors being significant in 9 countries and friends being significant in 8 countries. Among the other findings were that while men had a significantly higher entrepreneurial intent in only 9 countries, in no country did women have a significantly higher entrepreneurial intent, and using the total sample the EI for men was significantly higher than that for women. The results also reinforced the view that with two exceptions (China and Egypt) business students whose parents have entrepreneurial experience perceive greater encouragement from them to start a new business than those students whose parents have no entrepreneurial experience.

These studies suggest that cognition plays an important role with regards to entrepreneurial intent and that the three cognitive antecedents in the model (Figure 1) are truly significant with the antecedent, social norms, being the most significant across all countries samples.

The Role of the Institutional Environment

Using country level data from the same data set of 14 countries discussed above (Schlaegel et al. 2009), we also examined the role of the institutions of national culture and its impact on EI and its 3 three cognitive antecedents (attitude towards act, social norms, perceived self efficacy). In addition, we examined the impact of the economy (GDP per capita) and World Bank's Ease of Doing Business ranking (an overall formal institutions measure) on overall entrepreneurial intent. Our findings suggested that while age, gender, and Ajzen's (1991) three antecedents explain 41% of the variance in the overall sample, the addition of the institutional variables increased percentage of variance in entrepreneurial intent to 49% with only one institutional variable, the economy as measured by GDP/capita, not adding to the significance.

In an effort to examine the relationships of the formal institutional factors with entrepreneurial intent more closely a study was completed (Engle, Schlaegel & Dimitriadi, 2009) which examined the the relationship between 23 selected formal and informal institutions and entrepreneurial intent (EI) among 477 university business students from Germany, Russia, and the United States. These three countries were chosen for the study in large part due to their representation of three distinct national cultures as identified by House et al. (2004). Overall, the results of this study found significant but relatively low relationships between institutions and entrepreneurial intent ($R^2 = .115$, $p < .000$) and the authors suggest an explanation for these results may be found in Herzberg's "two-factor" theory of motivation – perhaps institutional factors are more hygiene than motivational. While supporting the findings of the Global Entrepreneurship Monitor (Bosma and Levie, 2010) that a significant degree of entrepreneurs are "necessity-driven", results also suggested significant differences between countries with regards to subjects' perceptions of formal and informal institutions and entrepreneurial intent.

The model (Figure 1) also suggests that institutions can have a direct impact on the entrepreneurial act of starting a new business. Another study (Engle, Schlaegel, & Dimitriadi, 2010a) examined the importance of 11 formal institutional factors (World Bank's Doing Business Report) to 238 entrepreneurs in Germany, Russia, and the U.S. at the time they started their new businesses. Results suggest that only two of the institutional factors (infrastructure and starting a business time and cost) was considered of at least moderate importance in the U.S., while in Germany only one factor (infrastructure) was considered to be of at least moderate importance. The Russian entrepreneur subjects, on the other hand, with 9 institutional factors being of at least moderate importance (starting a business, employing workers, intellectual property protection, getting credit, protecting investors, taxes, enforcing of contracts, infrastructure, and corruption); only "international trade" and "closing a business" were no consider of at least moderate importance.

These three studies suggest that overall, the institutional environment (both formal and informal) play a significant but modest role in the model (Figure 1). Although these studies did also suggest that perhaps in need-based countries (ones where the economy is such that good-paying jobs are difficult to find) such as in Russia; the role of institutions may play a more important role than those more economically developed countries such as the U.S. and Germany.

The Role of Personal Characteristics, Skills, and Abilities

Shane (2003) argues that "entrepreneurship involves the nexus of entrepreneurial opportunities and enterprising individuals" (p. 18) and few researchers today would argue that the individual does not play an important role in the process of starting a new business venture. However, we also know that not all people choose to start a new business venture in their lifetime. Thus, the individual has been the focus of much research over the years with the goal of identifying those personality characteristics, skills, and abilities that suggest the propensity to be an entrepreneur. Mitchelmore and Rowley (2010) conclude from their literature review that "entrepreneurial competencies comprise of components that are deeply rooted in a person's background (traits, personality, attitudes, social role, and self-image) as well as those that can be acquired at work or through training and education (skills, knowledge, and experience)..."(p.104) and that such competencies are important for entrepreneurial success.

Our model (Figure 1) recognizes the, as yet untested by us, relationship between certain individual characteristics, cognitive processes, and institutional environment. Many researchers have argued, for example, that culture has consequences for individual behavior (Hofstede, 2001), while others have argued that culture is the consequence of individual (Steel and Taras, 2010); thus the interrelationship in our model between personal characteristics and cognitive process and institutional environment. Of course, our model also supports the great body of research that illustrates the significant degree to which individual characteristics such as values and beliefs interact with the cognitive processes such as attitude (Eagly and Chaiken, 1998).

Our next study (Engle, Schlaegel & Dimitriadi, 2010b) specifically examined the relationship of personal characteristics, skills, and abilities with both entrepreneurial intent and entrepreneurial status (having started a new business venture). The specific competencies chosen to be included in this paper based on the available research literature include: personality traits (Big Five); risk taking propensity; innovativeness; conceptual ability; and emotional intelligence. The entrepreneurial intent sample consisted of 626 university students from Germany, Russia, and the U.S. The results suggested that the personal characteristics tested across and within countries contribute a significant amount of the variance for the entrepreneurial intent with the total sample data including control variables explaining 37% of the variance (R^2).

In addition, a sample of 298 employees (who had never owned their own businesses) and 238 current entrepreneurs from Germany, Russia, and the U.S. completed questionnaires. The variables tested also successfully differentiated the intent and status groups as logistic regression analysis was completed for the entrepreneur/employee samples. Using all model variables including age, and gender, the results indicated that the model used in this study explained 24% of the variance (R^2) between the entrepreneur and employee samples for Germany, 28% for Russia, 32% for the United states, and 22% for the entire sample (23% with country control added). Once again, as in our other studies some individual differences between countries were found, however across all countries the variables

of conceptual ability, risk-taking propensity, innovativeness, emotional stability, openness, age, and gender were found to be statistically significant individual characteristics.

As suggested in the model (Figure 1), our research supported the relationship of personal characteristics, skills, and abilities with entrepreneurial intent. Testing these same variables we were able to differentiate employee and entrepreneur samples. In addition, literature exists supporting the suggested relationships between individual characteristics, cognitive process, and institutional environment.

CURRENT STUDY

Our research, together with that of others which were described above, suggests support for many of the relationships indicated in our model (Figure 1). However, two important sets of relationships have yet to be investigated by us. The first is the presence and role of “entrepreneurial triggers”; and the second is whether or not there is a sustained entrepreneurial intent prior to the act of starting a new business venture. Thus our research questions are:

1. Do external “triggers” play a role in the entrepreneurial process and what is the nature of these external triggers?
2. Is there a sustained entrepreneurial intent prior to the act of starting a new business venture?

Entrepreneurial Triggers

We all know people you have the ability and even the stated intent to behave in a certain way but do not seem to ever to act on that intent as witnessed perhaps most generally by those who clearly know how they might go about the process of stopping to smoke cigarettes, or to lose weight and also have told their friends they intend to do so “someday.” It is not hard to imagine then individuals who have the ability to start a new business venture and even say they intend to do so “someday” and never seem to follow up on such an intention. Learned (1992) suggested the decision to act (found a business) may be seen as the result of a “trigger” resulting from “a specific event or by the accumulated weight of confirming and disconfirming information processed” (p. 41). Choo and Wong (2006), examined motivations and barriers to entrepreneurial intention and concluded that “triggers” such as attitudes or personal characteristics are important in entrepreneurial intent. Morrison (2000) concluded that any explanation of what triggers the entrepreneurial act must flow “from an understanding of the collectives generally accepted as characteristics of certain societies and respect and acknowledge the individuality and uniqueness of members of such societies who are motivated to act” (p.65). Fayolle (2004) did not specifically define or measure “triggers” in his study but his model included the construct of “triggers” that are the result of “contextual and social factors” and educational and para-educational experience” and directly impact perceived self-efficacy, entrepreneurial intent, and the entrepreneurial action plan.

As can be seen by these definitions and approaches there are differences in views as to how an entrepreneurial trigger can be defined and even less insight as to the actual impact of an entrepreneurial trigger. We believe as did Learned, Choo and Wong, and Fayolle that entrepreneurial triggers may be an important factor and this study attempts to define and investigate their importance. Since our model (Figure 1) recognizes the personal characteristics skills and abilities as well as the cognitive process in the entrepreneurial process we placed the “entrepreneurial trigger” construct outside of their immediate domain. For the purposes of this study we define an entrepreneurial trigger as a “precipitating even” (Shapero, 1975; 1982; Krueger, Schulte, and Stamp, 2008) external to the individual that leads to intent or the direct action to start a new business venture. It is this construct we will examine in this study. To our knowledge, very little research (qualitative or empirical) has examined entrepreneurial triggers. In the field of corporate entrepreneurship Schindehutte, Morris, and Kuratko (2003) and Morris, Zahra, and Schindehutte (2000) presented a typology of entrepreneurial triggers (internal and external, opportunity vs. threat, market pull vs. technology push, top down vs. bottom-up, search vs. serial) that is applicable to the domain of entrepreneurship.

The Presence of an Entrepreneurial Intent

The most important theories of intention that can lead to entrepreneurial behavior are planned behavior and entrepreneurial event. Shapero (1975, 1982) proposed that the “entrepreneurial event” depends on a personally credible opportunity, which is driven by two antecedents: social and personal desirability, and the perception of personal and social feasibility. He also believed that a third antecedent, propensity to act, also contributed to the entrepreneurial event. Later, empirical testing (Krueger, 1993; Krueger & Carsrud, 1993) found these model elements to be effective predictors of the entrepreneurial event defined as the initiating entrepreneurial behavior.

In examining the entrepreneurial event, researchers have suggested that the existence of an entrepreneurial opportunity as well as its identification by the entrepreneur, and the conscious decision of the entrepreneur to exploit that opportunity are among the steps necessary in the entrepreneurial process (Shane, 2003). Krueger, Reilly, and Carsrud (2000) argue that such a process tends to be thoughtful on the part of the individual, and that opportunity identification is based upon individual intention. They also suggest that intention has been “proven the best predictor of planned behavior, particularly when that behavior is rare, hard to observe, or involves unpredictable time lags” (p.411) such as in the case of starting a new business venture. Krueger and his associates go on to point out that planned behavior is the best predictor of actual behavior and argue that an individual’s attitudes and personal motivation are important for entrepreneurial proclivity, and therefore their entrepreneurial intentions help to explain why many entrepreneurs decide to start a business long before they scan for opportunities. In other words, Krueger and his associates disagree with the implication in Shane’s model that the decision to exploit always comes after the discovery of an opportunity – it is also possible for one to actually decide to become an entrepreneur and then uncover an opportunity. In fact, Gartner and Carter (2005) examined the question of which came first, the entrepreneurial idea or the desire, and found that 44% of the entrepreneurs first had the desire to start a business, 34% first had the business idea or opportunity, and 21.5% felt both came at the same time. While it can be argued which order is correct, the important observation for this study is that in either case there is a conscious intention on the part of the individual to become an entrepreneur.

The work of Gartner and Carter (2005) also suggest that an external event or entrepreneurial trigger may not be a necessary prerequisite for the starting of a new business venture. While one might argue whether or not such a trigger was involved, it is difficult to conceive of an individual completing the sometimes complex task of starting a new business venture without some degree of intention to do so. However, we recognize that it may be possible for the trigger to result in intent which is immediately acted upon (or relatively so) thus clouding the question of whether or not it was the intent or the trigger, or both at the same time that resulted in the new business venture. Thus for the purposes of this study we have included a temporal element and defined entrepreneurial intent as the possessing for a period of a year or more the intention to start a new business venture.

Sample

A total of 215 entrepreneurs (Germany $n = 77$, Russia $n = 67$, U.S. $n = 71$) were included in this study from a very broad range of businesses and industries in each of the 3 countries. Traditional professional businesses such as dentist, general medical practitioner, lawyer, etc. were eliminated from the sample. The primary reason for choosing these three countries was their representation of three distinctly different national cultures (House et al., 2004). These countries were also the native countries of the study’s authors.

In the U.S. Chambers of Commerce in three cities were contacted and agreed to send out mailings to their local members who they had listed as small business owners and request personal interviews as well as fill out questionnaires. In addition small business owners were identified from a university alumni directory and mailings were sent to them as well. A total of 202 mailings were sent resulting in 50 qualified (started their own business) and usable questionnaires (25% response rate) and agreed to do a personal interview. In addition personal local network contacts of the U.S. author were used resulting in 21 usable surveys (85% response rate) resulting in a total of 71 usable surveys from the United States all of whom also agreed to personal interviews. The personal interviews in each country were the source of the data used in this study.

In Germany Chambers of Commerce in three cities were contacted and agreed to send out mailings to their local members who they had listed as small business owners. In addition, small business owners were identified from a university alumni directory and mailings were sent to them as well. In total 245 entrepreneurs were contacted resulting in 100 qualified and useable questionnaires (43% response rate) from Germany of which 77 respondents also agreed to a personal interview.

In Russia, a local Chamber of Commerce mailing was sent to a total of 50 people resulting in 14 qualified (started their own business) and usable surveys (28% response rate). An additional 50 surveys were also distributed to entrepreneurs who came to a university development program resulting in 27 qualified and usable surveys (54% response rate). Finally, 26 qualified and useable surveys came from the author's personal network contacts (76% response rate) for a total of 67 usable entrepreneur surveys. All of these respondents agreed to a personal interview.

Methodology and Measures

A set of personal interview questions was developed by the authors to address a number of areas of interest including those related to this study. A pilot study was conducted in Russia and the U.S. consisting of 10 entrepreneurs in each of the two countries. The U.S. author and the Russian author were both present with all 20 interviews which took place in their respective countries. The Germany author who would be conducting the study arm in Germany was involved in the instrument development and also gave input as to the need for possible question changes. As a result of these interviews and input a final set of questions were agreed upon. Original and final questions were translated and back translated and checked with local experts to help ensure linguistic as well as conceptual equivalence (Brislin, 1980). Pilot and full study interviews took place in the subjects' local areas which included very large metro areas as well as much smaller cities in each of the three countries. Written notes were taken in all instances and interviews were tape recorded when, as in most cases, permission to do so by the subject was granted. While interviewers were not allowed to change or vary the question order they were able to discuss and clarify issues after all questions were completed. The total time required for a typical interview (all interview questions) was about 45 minutes. Each interview in the country was completed by the same interviewer/author. The U.S. author's Internal Review Board (IRB) requirements regarding subject involvement, permission, and data security were carefully followed in all three countries.

Many of the questions can be seen to require an answer reflecting the perception of the subject. Such an approach is argued by Arenius and Minniti as being appropriate and even important as "entrepreneurship is, after all, about people and, not surprisingly, subjective and often biased perceptions emerge as being highly correlated to nascent entrepreneurship" (p.243). The pilot study indicated among other things the need to qualify some of the questions. For example many of the entrepreneurs interviewed had started multiple businesses. To be consistent, the subject was asked if their current business was their first, and if not, the subject was asked to answer all interview questions from the perspective of the first business they started. The questions that pertain to this study (not including demographic and qualifying questions) included:

1. *When did you first seriously consider starting your own business?*
2. *When did you start your first business venture?*
3. *(Since you had been seriously considering starting your own business for some time...) Was there a specific "trigger" or event that made you decide it was the time to act?*
4. *Did anything prevent you from starting your business earlier than you did?*
5. *What may have prevented you from starting your own business?*

Question one and two gave us the ability to evaluate entrepreneurial intention as defined in this study. Question three addressed the entrepreneurial trigger. As suggested by Choo and Wong (2006), questions four and five were used to examine whether other factors may have existed that might have moderated the impact of the trigger, or the acting on the intent. In all three countries the interviews found the subjects to answer these questions with little or no hesitation and almost without exception appeared comfortable and confident in their answers.

Results

In the German entrepreneur sample 45% had only a high school degree, 20% had undergraduate university training, and 33% completed an advanced degree. In the Russian entrepreneur sample 1% had only a high school degree, 4% had undergraduate university training, and 95% held an advanced degree. In the U.S. entrepreneur sample 3% had only a high school degree, 66% had undergraduate university training, and 31% completed an advanced degree. In the U.S. non-entrepreneur sample 2% had only a high school degree, 68% had undergraduate university training, and 30% completed an advanced degree. Gender and age are described in Table 1.

- **Insert Table 1** -

Table 2 lists the entrepreneurial triggers for the three countries. In many cases the subjects listed more than one trigger resulting in more triggers than respondents. Responses were able to be grouped into 13 categories. When combining the results for all countries the top trigger was “market or product opportunity” (54) followed by “being unemployed or unsatisfied with current job” (50). “Nothing specific” reflecting no perceived trigger also received a score of 50. Other significant triggers for all countries were “having sufficient knowledge or experience” (29), “owner retirement, sale, or death” (20), and “capital availability” (20). There was significant variability between countries.

-**Insert Table 2**-

Table 3 lists perceived barriers to entrepreneurial activity. Conceivably these could impact entrepreneurial intent, the impact of a trigger, or even the starting of a new business venture. Once again some subjects gave more than one response resulting in more responses than subjects. The top perceived barrier to entrepreneurial activity for all countries combined was “capital availability” (89) followed “nothing specific” (46) suggesting no perceived barriers that would inhibit their activity. Other significant barriers were “insufficient knowledge or experience” (40), “family and friends support” (28), and “lack of product demand or too much/too strong competition” (17). There was significant variability between countries.

-**Insert Table 3**-

Table 4 lists the number of subjects that had entrepreneurial intent as defined in this study (serious consideration of activity for more than one year). In Germany 78% of the surveyed subjects who gave sufficient data to evaluate this variable had such entrepreneurial intent, while 92% had entrepreneurial intent in Russia, and 87% had entrepreneurial intent in the U.S.

-**Insert Table 4**-

Discussion

Overall, the data from previous studies together with this study’s findings regarding triggers and barriers, as well as the relationship between entrepreneurial intent and the starting of a new business venture, suggest that the model proposed in this study does identify key antecedents to the starting of a new business venture. This model also appears to have explanatory power across countries although the strength of those relationships and the specific parts of their constructs may differ. For example, while the cognitive process was seen as an important predictor of entrepreneurial intent across all countries examined, the specific cognitive antecedent of “social norms” was the only one of the cognitive factors tested that proved significant across all countries. Another example is from the findings of this study suggesting that while triggers played a role for the entrepreneurs in all three countries examined, the importance of the specific triggers did vary between countries.

Importantly this study’s findings suggest that intent, triggers, and barriers are potentially important factors of the entrepreneurial process. In all three countries entrepreneurial intent is a determinant of entrepreneurial behavior. While some of the perceived triggers and barriers to entrepreneurship can be generalized across countries, other

triggers and barriers are more country specific. Opportunity recognition is an important triggering factor in all three samples, while in the total sample the perception of adequate knowledge and experience, and unemployment or employment dissatisfaction were also found to be important triggers. Despite the position of Habiby and Coyle (2010) that “Today entrepreneurs anywhere can create value with relatively little capital” (p. 74), our findings suggest the availability of capital is perceived as an important barrier to entrepreneurship in all three countries, while in the total sample lack of knowledge and experience as well as lack of support of family and friends were perceived as barriers as well. A large body of research found that social norms are a universal and important determinant of entrepreneurial intent. The results support these findings and show that the missing support of family and friends is perceived as a barrier by entrepreneurs in Germany and the U.S., while only in the U.S. the support of family and friends is perceived as a positive entrepreneurial trigger, proposing that the influence of family and friends is a hygiene factor in Germany. A lack of knowledge and experience is perceived as a barrier, while more knowledge and experience trigger entrepreneurial behavior in the three countries. This finding suggests that entrepreneurs perceive the knowledge and experience that are necessary to successfully perform the tasks of an entrepreneur as important factors. Unemployment and dissatisfaction are important triggers in Germany and the U.S. In all three countries entrepreneurial intent is a determinant of entrepreneurial behavior.

These data do suggest that entrepreneurial triggers and barriers impact entrepreneurial intent and status (the actual starting of a new business venture). When examining the nature of the entrepreneurial triggers and barriers it appears they derive mostly from three of the model elements: personal characteristics, skills and abilities (e.g. knowledge/experience); institutional environment (e.g. capital availability, laws and regulation); and cognition (unsatisfied with employment, support or encouragement of family and friends). As these antecedents lead to entrepreneurial intent and entrepreneurial status they are also capable of “triggering” intent as well as “triggering” the action of starting the new business venture. This is an important conceptual aspect of the entrepreneurial process as there are many individuals who may intend to start their own business someday, but will never do so.

For the majority of the subjects in this study our findings suggest the difference may well be something they readily recognized as a “trigger” – some event or point at which they recognized “now is the time to do it.” Also of importance is their perception of one or more barriers that could interrupt or even derail the entrepreneurial process for them. These barriers are for them the critical events that must or must not exist at the time they are exposed to the trigger, which otherwise may have resulted in their taking the specific actions necessary to start their new business venture. We see the absence of such perceived barriers as a condition for the trigger to be activated, as even with a potential trigger event the individual may not recognize it as such without the absence of perceived barriers. Thus, we suggest that researchers must consider both potential triggers and barriers when conceptualizing and explaining the individual’s act of starting a new business venture.

Limitations and Future Research

Our research suggesting the appropriateness of the overall model needs much more work in order to assure the validity of the relationships suggested – especially across countries. There were only three countries utilized in the personal characteristics, trigger, and barrier studies while the institutional environment was tested by one study of 14 countries and another of 3 countries. The role of cognition was tested in studies using 12 and 14 countries. Future research should examine these relationships in a broader range of countries and across different sample populations. In the case of entrepreneurial intent most population samples in the studies we completed used one university in each country, and in the entrepreneurial status studies we used a broad range of entrepreneurs which did not differentiate, for example, technology entrepreneurs from food service entrepreneurs. The potential similarity or differences in the types of businesses started by entrepreneurs, with regards to the elements of this model, need to be examined.

While a significant number of subjects in all three countries of this study were able to identify specific triggers to the starting of their new business venture, nearly half of all German entrepreneurs and about one third of all Russian entrepreneurs mentioned that no specific event initiated their entrepreneurial behavior. Future studies should explore both conscious and unconscious factors that determine the precipitation of entrepreneurial behavior.

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Table 1. Sample Description

	Male	Female	Total	Mean Age
Germany	54	23	77	42
Russia	38	29	67	39
United States	53	18	71	42
Total	161	77	215	41

Table 2. Frequency-of-Mention of Entrepreneurial Triggers*

Trigger	Germany	Russia	U.S.
Nothing specific	28	17	6
Unemployed/unsatisfied	23	6	21
Market/product opportunity	12	12	30
Knowledge/experience	12	7	12
Owner retirement/sale/death	8	0	12
Partner offer	6	2	3
Change in family situation	5	2	3
Capital availability	2	12	6
Age (need to do by...)	1	2	0
Tax law change	1	0	0
Family/friend encouragement	0	0	9

Change in government	0	8	0
Location availability	0	0	3

*some subjects indicated more than one trigger

Table 3. Frequency-of-Mention of Entrepreneurial Barriers*

Potential Barriers	Germany	Russia	U.S.
Nothing specific	25	3	18
Capital availability	16	28	45
Family/friend support	11	5	12
Product demand/competition	8	3	6
Laws & regulations	7	8	0
Good steady employment	7	0	3
Location availability	5	1	9
Health	4	0	1
Knowledge/experience	4	27	9
No previous family business	2	0	0
No available partner	1	5	0
Tax rates	1	1	0

* some subjects indicated more than one barrier

Table 4. Entrepreneurial Intent

Entrepreneurial Intent	Germany	Russia	U.S.
Yes	65	55	61
No	9	5	9
No response/incomplete data	3	7	1

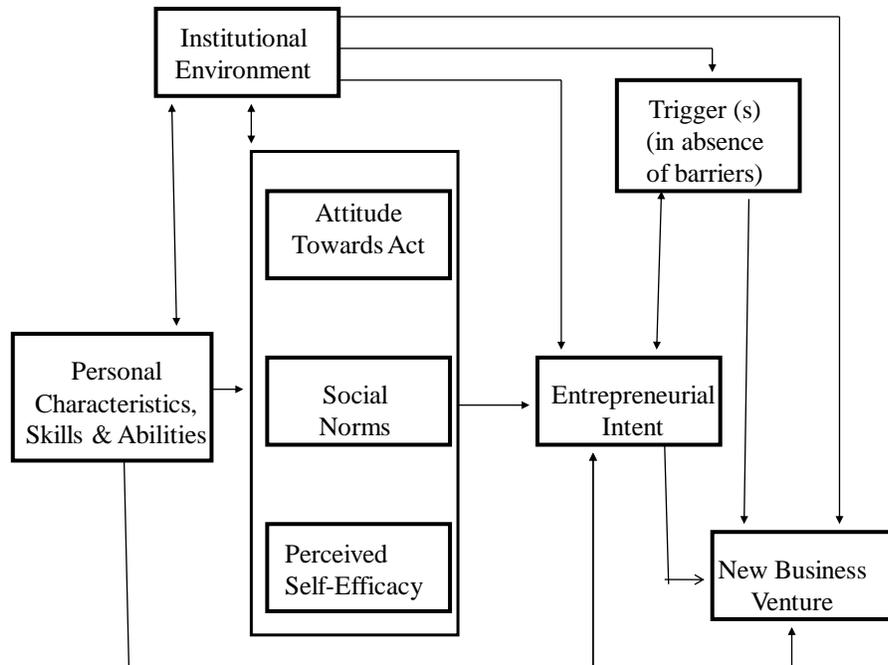


Figure 1. International Model of Entrepreneurship

CONTINGENCY PLANNING FOR GLOBAL ENVIRONMENTAL INSTABILITY:

ISSUES OF SUSTAINABILITY FOR NATIONS AND CORPORATIONS

MARY M. HELOU

Charles Darwin University

School of Law, Education, Business and Arts

Alice Springs, NT 0870

Australia

E-Mail:m.helou@hotmail.com

ABSTRACT

Twelve voices were shouting in anger, and they were all alike. No question, now, what had happened to the faces of the pigs. The creatures outside looked from pig to man, and from man to pig, and from pig to man again: but already it was impossible to say which was which.

(Orwell, 1989)

Prominent achievements in science, medicine and technology have only been paralleled with horrifying acts of violence, turbulence and terror. In the late twentieth and early twenty first centuries, actions and reactions to acts of terror of various types and forms have steadfastly spread to various regions around the globe. No country has proved to be immune to violence, regardless of its geographical and political position in the world economy, or its level of development and civilization. Countries that have recently been either directly or indirectly associated with acts of violence and terror at either the creating or receiving ends, or both, are plentiful. This includes the United States, Israel, England, Australia, Spain, Afghanistan, Lebanon, Iraq, Iran, Syria, Indonesia, North Korea, China, and the list continues.

In an attempt to plan for global environmental instability, the current paper presents a conceptual Reconstruction-Governance Contingency Path Analysis (RGPA) geared towards a non-linear social systems recovery after turbulence. The proposed reconstruction model of macro-crisis, multi-level contingency programme defines decision-making contexts and their possible re-equilibration elements, as they relate to evolutionally/incremental reconstruction stages.

This research study presents a four-fold analysis. The first section discusses and evaluates recovery and re-equilibration interesting frame-works and models, dealing with systems evolution after turbulence, including the Decline-Recovery Model (Hirschman, 1970; 1995); Contingency Typology and Risk Path Analysis Model (Kouzmin and Jarman, 1989; Jarman and Kouzmin, 1990); and Crisis, Breakdown and Re-equilibration Model (Linz and Stephen, 1978). Secondly, limitations and convergence of the previously-mentioned models are discussed. This includes a presentation of the components and processes of the crisis decision-making models under discussion as they relate to the development of the proposed RGPA. In the third section, the components, structure and process of the proposed RGPA are presented. Finally, the author discusses a developmental leadership path analysis - as it presents a crucial component of the proposed framework in relation to its impact on systems recovery and reconstruction activities. In addition, the author provides directions for future research within the area of systems evolution and reconstruction after turbulence.

Introduction

During the weeks following the World Trade Center disaster, when “free time” did not exist, I carved out hours to learn more about the issues that had been forced upon the city, to seek out sources of both knowledge and inspiration.

(Giuliani, 2002:291)

Given the increasingly pernicious acts of terrorism and the pestilent scale of the attacks witnessed in the past few years, it is worthwhile to note that the acts of violence committed in the twentieth century have been reiterated in an even bolder fashion in the twenty first century. This includes, but is not limited to, barbaric and catastrophic acts of lethal violence resulting in the death and the mutilation of innocent women and children of all nationalities, races and religions; growing violations of democratic freedoms, serious abuse of fundamental human rights, attempts to ‘silence’ the rising voices of

contempt of the general public; impingement on basic civil liberties, militarization of societies; brutal invasions and illegal occupations of societies and countries in the face of overpowering domestic and international opposition, leading to the death of innocent civilians and soldiers alike; devastation of entire societies; and willfully igniting sectarian spirits and conflicts, a tactic that has been repeatedly witnessed in various parts of the world.

Even though its application has differed from one country to the other, its purpose remains the same, namely to remind and widen the split of sectarian and/or religious communities and act on their historical animosities given the ideological climate conducive to the victimized country or society in question. Such a strategy aims at spreading feelings of inequality, disgust, hatred and tension among individuals and communities that otherwise have, in the past, lived peacefully as neighbors in the same villages and cities. All of a sudden, they find themselves trapped in an internal brutal civil conflicts that sweep their respective countries from side to side, all triggered by a possibly manufactured event to start with.

In addition to the global safety and security concerns, nations and corporations continue up to the present to explore options to cope with the severe economic downturn underpinning the global financial crisis (DCOMM, 2008; Hughes, 2009; Jaggi, 2009; Weitzman, 2009). Significant corporate financial implications will follow if effective answers can indeed be determined to respond to the severity of the financial crisis (Swan, 2008; Der Ghoukassian, 2008; Done, 2009). In light of this, theory development cannot

be discarded, as theoretical frameworks represent rays of light that penetrate worldwide windows of opportunities surrounding us; thus, enable us to further rethink and progress our knowledge of what otherwise may seem unthinkable. Of course, researchers and scholars are unlikely to be in a position to derive “exact” answers, as such, basic arguments and debates will continue to surface in relation to the fundamental causes underpinning the current global financial crisis (Baer, 2009; Cooper, 2010; Foster, 2010).

In an age of turbulence, hatred, and may be insanity, where the politics of fear and uncertainty preside, and where terror is not just an ideology, but more so a method of creating and instilling fear in corporate and senior industry decision makers, public administrators and the general public alike, and acts of violence continue on the rise, the world has witnessed the failure of the language of deadly weapons and heavy rockets. For example, to expect a sudden transformation in Iraq, where democracy will suddenly blossom as a result of invading and knocking down a once stable regime on the premise of possibly establishing, at some future stage, a civil infrastructure, all in the name of war against terror, is a rather naïve view. To start with, even though democracy is a grand and glorious vision, like terrorism, it is not a concrete concept. It is an abstraction, especially in the absence of the basic prerequisites of constitutional order and fundamental civil rights (Guelke, 2006). Secondly, such a strategy does not take into account the high frictional costs involved as a result of existing cultural forces and the wide spread local perception of the occupiers.

Given the cultural deficiencies, lack of compassion and sheer backwardness that is being experienced in the face of all facets of human advancements and prosperity, it is the view here that the drastic and shrill need for a more efficient form of communication, namely that of understanding, tolerance and empathy, has become even more vigorous and robust. Building and rebuilding shattered relationships, given the break down in diplomacy, has never been an easy task. The author is of the view that the only hope to rebuild relationships is to progress understanding for one another as well as the nature of the crisis encountered, a process that may have a better chance of occurring if the parties concerned develop an appropriate mind set to ‘objectively’ explore the accumulating events that usually precede major crises and underpin environmental turbulence; thus, lead to the diffusion of the feelings of uncertainty and insecurity.

It is worthwhile to underline that analyzing one’s own wrong doing, and, more so, admitting to one’s mistakes that may have well contributed to the escalation of turbulence in the first place, involves a high standard of political dignity and integrity and a great deal of courage. Of course, this is not easy given the shows of sheer greed, military might and struggle for world power. In other words, it is the view here that learning from past atrocities and fiascos represent an essential means of better managing current and future crises encountered by both nations and corporations.

The current study presents a recovery and reconstruction framework, namely the *Reconstruction -Governance Contingency Path Analysis* (RGPA), as a policy level methodology. The RGPA represents a developmental leadership path model based on

evolutionary/incremental stages of recovery and reconstruction after turbulence. This paper consists of four main sections. The first part covers the fundamental theoretical frameworks used to develop the current study, as well as provide for the identification of the recovery elements of the proposed model. Accordingly, this section consists of an analytical evaluation of the Decline -Recovery Model (Hirschman, 1970; 1995), the Breakdown and Re-equilibration Model (Linz and Stephan, 1978), and the Contingency Typology and the Risk Path Analysis Model (Kou2Dlin and Jarman, 1989; Jarman and Kouzmin, 1990). In the second section, the limitations and convergence of the previously mentioned frameworks are presented.

The third section features a detailed analysis of the developmental leadership path network as it relates to a set of inter-related evolutionary/incremental phases of recovery. This is achieved through an analysis of the components and the process of the proposed RGPA. Finally, the fourth section presents an analysis of the temporal characteristics of the four main reconstruction phases.

In addition to its administrative and cultural dimension, another important feature of the RGPA is its temporal dimension. Accordingly, the nature and texture of the recovery process could either be evolutionary or incremental based on the actual realization and the rate of attainment of the proposed recuperation mechanisms. An evaluation of the inter-connections between the two main non-linear social systems in focus; namely, the system itself and its internal/external environment, provide for the identification and evaluation of the forces impacting on the realization of actual reconstruction activities.

A Problem that cannot Wait: a Contingency Approach to Strategic Crisis Decision-Making

You know what sort of times we live in, and so you should live properly. It is time to wake up.

(Romans 13, 14.11-

13)

The three crisis elements outlined in the definition of *Crisis* (Rosenthal, 1986), adopted in the current research, namely, *threat*, *urgency* and *uncertainty*, partially provide for an explanation of the need for sophisticated contingency thinking in crisis management and reconstruction policy studies. Contingency planning refer to the development of alternative future courses of action. Among the various public sector contingencies and crises are natural disasters (Kouzmin, 1991), environmental crises, socio-political turmoil, institutional change and conflict and policy fiascoes (Rosenthal and Kouzmin, 1993).

Although contingencies tend to regularly emerge in pomplex situations, in many cases administrative and political actors fail to take them into consideration as part of their strategic crisis management plans (Kouzmin and Jarman, 1989). Contingency related analysis refers to the skills and training of political actors (Kouzmin and Jarman, 1989). The current study argues for the development of higher levels of awareness for requirements of contingency planning in crisis situations. Although cutting through bureaucratic jurisdictions tends to be heavily criticized by politicians, following informal contingent strategies under highly critical and politically-uncertain situations tend to help in shortening the time required to develop and introduce policy interventions needed to respond to such crises (Kouzmin and Jannan, 1989).

Especially when it comes to a non-linear social systems evolution after turbulence, developing a set of "multiple futures", rather than one "single future", should dominate the reconstruction planning agenda. The current research study argues that contingency thinking should be used in conjunction with re-constructive crisis policy research. The need for contingency reconstruction planning and analysis becomes even more critical, given the opportunities and challenges affecting the realization of re-constructive reform policy requisites.

Contingency analysis has been mostly used by defense planners to develop worse case scenarios (Rosenthal and Kouzmin, 1993). Although it is an effective uncertainty reduction mechanism, contingency planning should not be limited to the formulation of worse-case scenarios. The need for contingency planning tends to escalate as the degree of uncertainty, complexity and innovativeness of non-routine crises intensify. Under conditions of severe threat and uncertainty, the system may find itself pressured for time in terms of responding to an emerging situation (Rosenthal and Kouzmin, 1993). Accordingly, it may be difficult to follow previously set formal procedures and administrative processes. To be able to respond swiftly to such demanding crises political leaders and crisis managers may thus, exhibit contingent behaviour through reverting to informal channels of communication.

Applying a contingency approach to a system's reconstruction after turbulence, as it relates to the case study country in focus, helps in developing plausible reconstructive path-ways based on a developmental leadership path analysis. Accordingly, alternative recovery patterns could be evaluated based on the actual realization of the proposed re-constructive reform requisites - including effective brain influx programmes, proper media regulation and flexible governance patterns. Different post-algorithmic states may very well be the outcome of different reconstruction-governance critical paths.

The application of a contingency approach to recovery policy research validates the use of re-constructive logic as a crucial methodological construct used to deduct relevant lessons from

previous crisis situations. In addition, the use of re-constructive logic, accompanied with a heuristic approach, helps in the identification and evaluation of critical discontinuity points. Such turning points could, at the post-crisis stage, essentially be used a valuable opportunities for re-constructive policy interventions. The application of a contingency heuristic approach to recovery policy analysis provides an answer to a crucial question as to why certain systems are able to relatively quickly emerge and embark on a recovery mode after experiencing drastic turbulent events, whilst others tend to remain buried in what seems to be an ever-lasting crisis situation.

Re-constructive policy research has evolved through various descriptive, as well as, analytical stages in terms of its major thrust and emphasis. Analysis has mainly shifted from purely economic and market forces, to a rather "holistic" approach to reconstruction and development. Following a more analytical holistic approach to recovery, after turbulence, the frame-work in focus tends to heavily emphasize nonmarket social reconstruction contingent reform forces (Hirschman, 1970).

Literature Overview and Representative Theoretical Frameworks

Jesus told his follower, "Put your sword away. Anyone who lives by fighting will die by fighting".

(John 18.3-12; Luke 22.47-53; Mark 14.43-50; Mathew 26.49-54)

The RGPA represents a situation-specific macro-policy level methodology which builds on the following frameworks:

- Decline-Recovery Model (Hirschman, 1970;1995);
- Contingency Typology and the Risk Path Analysis Model (Kouzmin and Jarman, 1989; Jarman and Kouzmin, 1990); and
- Crisis, Breakdown and Re-equilbmtion Model (Linz and Stephan, 1978).

A discussion of the consistencies and limitations of these frame-works is provided. In addition, the current study highlights the contribution/s of each of these models to the understanding and evaluation of the relevant issues/components of the proposed RGPA.

Hirschman's Decline -Recovery Model

Environmental states are the property of the perceptions of the actors involved and their interactions over time. The failure of some actors to display expected behaviours may eventually give rise to the feelings of threat and uncertainty (Hirschman, 1970; Linz, 1978). Negative perceptions, in turn, may cloud the psychological atmosphere with tensions and hostilities, thus, leading to unstable environments.

Regardless as to how well developed a system's basic agencies and institutions are, hostilities and unstable environmental states may eventually lead to emerging crises. In the absence of creative crisis management techniques to resolve an emerging situation, the crisis may feed on itself and develop into a creeping, long-term macro-crisis.

As it starts its decline phase, the system would be forced to identify strong internal recuperation mechanisms and institutional devices to utilize in mitigating the dysfunctional impact of the mis-behaving actors. Hirschman (1970) discusses a number of internal mechanisms of recuperation, including competition, exit, voice and loyalty. Based on these endogenous recovery forces, Hirschman (1970) developed a decline recovery model to help a system reverse its decay phase as a means of avoiding social losses, and achieving recovery after turbulence. The model itself is mainly based on a comparative analysis of the exit and voice options, and to the inter-play between them.

According to Hirschman (1970), *exit* is a crucial optional internal reform mechanism. He clearly discusses the exit option as an exemplar of economic behaviour. Although it has not received much attention, exit is an extremely powerful option (Hirschman, 1970). As an increasing number of individuals choose to *withdraw* from a particular system, the system's basic institutions would be under severe pressure to improve their performance and efficiency. This applies to both business organizations as well as political institutions. A massive exit option, especially by professionals and socioeconomically advantaged members of society further weakens the system itself. With time, the exit option tends to feed upon itself, making it difficult for the system to embark on a recovery mode. In such cases, reform would have to be initiated from outside.

Hirschman (1970) discusses *voice* as 'political action par excellence'. As opposed to exit, the voice option is discussed as an impersonation of politics. Nevertheless, it is by far messier than exit. Hirschman (1970) introduces the voice option as a crucial recuperation mechanism, which could either be used as an alternative to exit, or as a residual to it. Voice is defined as 'any attempt to change, rather than to escape from, an objectionable state of affairs, with the intention of forcing a change in management, or through various types of actions and protests, including those that are meant to mobilize public opinion' (Hirschman, 1970).

The effectiveness of voice increases with its volume. Just like exit, voice can also be overdone. An "over-dose" of the voice option may even hinder, rather than enhance, reform activities. Hirschman (1970) refers to the connection between exit and voice as a 'see-saw relationship'. Voice becomes a more utilized and powerful reform option, as the use of exit

declines. In the complete absence of exit, voice becomes extremely powerful for it is the only option left for stake-holders and agencies to express their dissatisfaction.

The decision to resort to the use of voice, as opposed to exit, is determined by the following factors:

- the degree of loyalty displayed by the actors concerned;
- the willingness on the part of the actors, themselves, to take the risk involved with the use of voice, as opposed to the level of certainty associated with the exit option;
- the leadership strategy practiced by the concerned authorities, in terms of either enhancing, or hindering, the freedom of expression;
- the management of perception practiced in terms of the possible attainment of perceived advantages from presenting the case in question; and
- the opportunity cost involved in using voice as opposed to exit. When compared to exit, voice is rather costly, and it is affected by the bargaining power of the parties concerned.

The decision not to exit is highly influenced by the degree of *loyalty* displayed by the members involved. With higher degrees of loyalty, stake-holders and agencies may decide to resort to the use of voice, rather than exit. Accordingly, the activation of the voice option tends to be dependent on the feelings of loyalty, whereby, loyalty in turn, may constitute a barrier to exit. It takes a high degree of loyalty and faithfulness on the part of the actors/participants concerned, to resist exit in the face of better alternative options. Thus, faithful and well capable individuals may decide to effectively use voice as a means of impressing their dissatisfaction, and adapting the policies and practices of the system in question.

If the system restricts the practice of voice, the attainment of reform would then be expected to be under-taken from without, rather than from within. In the presence of loyalty, the relationship between exit and voice becomes more complicated. Hirschman (1970) highlights two conditions that underlie the special loyalist behaviour. First, exit may feed upon itself. The system tends to continue deteriorating as an increasing number of its members decide to withdraw. Thus, exit could be considered as a crisis that implodes upon itself. Secondly, the actors continue to follow up and care about the system's deterioration, whether or not they decide to exit. Accordingly, full and complete exit is rather impossible. In the case of exit, reform would have to be under-taken through utilizing the voice option from without, rather than from within.

Hirschman (1970) introduced *exit* and *voice* as two main economic and political mechanisms of 'equal rank and importance'. Exit and voice reflect the basic schism between economics and politics. Economists tend to favour exit over voice, for the withdrawal option represents a straight-forward way of showing one's dissatisfaction. The inter-play between exit and voice shows the inter-connection of economics and politics. It actually represents the inter-relationship between economic market mechanisms and non-market social and political mechanisms, acting simultaneously, to help a system overcome its decline phase, and move towards recovery and development.

Hirschman (1970) clarifies the fact that both reform forces, of exit and voice, can either work separately on their own, or they can intervene in conjunction with each other, to achieve

recovery and development. The optimal mix of voice and exit tend to differ from one system to the other. It depends on the system's reaction to each of the previously-mentioned reform options.

Difficulties may be encountered when combining exit and voice together. The availability of the exit option may reduce the chances for the effective use of voice. The actual practice of the exit or the voice options can be either enhanced or suppressed by the authorities in charge. The facilitation of the exit option restricts the use of voice and vice versa.

To further analyse the main recuperation mechanisms in focus and to develop the Reconstruction-Governance Contingency Path Analysis, the current study builds on two additional interesting models; namely, the managerially-orientated Contingency Typology and the more sophisticated Risk Path Analysis Model, and the politically-orientated Crisis, Breakdown and Re-equilibration Model.

The Contingency Typology and The Risk Path Analysis Model

Kouzmin and Jannan (1989) developed a contingency heuristic model that highlights different ways in which policy-makers may progress from routine "algorithmic" decision-making to "crisis" management. The authors use various organizational contingency theories to develop an interesting analytical model which identifies various decisional pathways, leading to crisis.

Given an environment of extreme complexity and uncertainty, it is only natural for the system to respond and solve the merging problem facing it with the available means. When left alone, conflict seldom gets resolved. Thus, creative action to the problem is usually needed to solve the emerging conflict/s, before it develops into an overwhelming macro-crisis.

In certain instances, due to high degrees of uncertainty, urgency and threat, the solution may necessitate the by-passing of previously established formal procedures, hierarchical authorities, or agreed upon communication channels (Kouzmin and Jarman, 1989). Thus, a contingent, informal hierarchical sub-system, within the formal system, is developed to handle the conflict situation, with minimum needed time, effort and human cost. A basic assumption of the current research is that the longer an emerging conflict is left to interact within a system, the harder it gets to be resolved.

Table 1: Contingent Crisis Decision-Making

Decision- Making Classes	Environmenta l States	Decision- Making Contexts
-------------------------------------	----------------------------------	--------------------------------------

Type Calculation	1: +	Placid/Random	= Algorithm
Type Judgement	2: +	Placid/Clustered	= Opportunity-cost
Type Compromise	3: +	Disturbed/Reactive	= Muddling through
Type Inspiration	4: +	Turbulent	= Crisis

Source: Jarman and Kouzmm (1990:406)

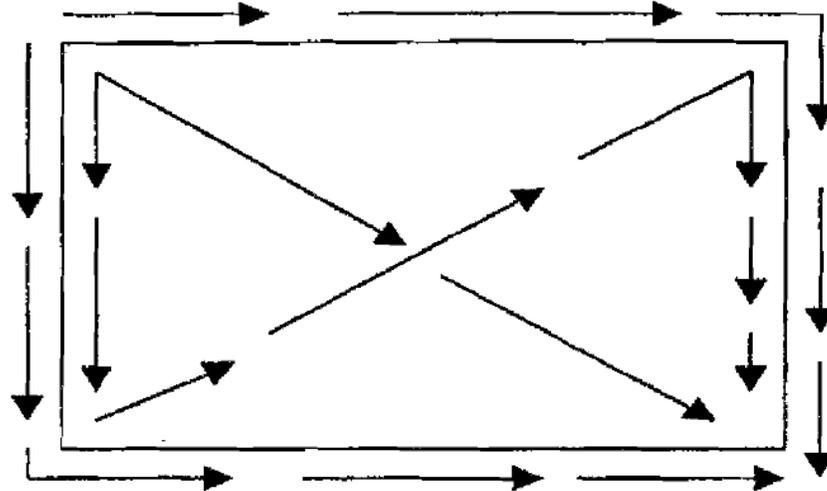
Kouzmin and Jarman (1989) argue that if the two contingency theory schemas of Thompson and Tuden (1959) and Emery and Trist (1965) are juxtaposed into a hybrid set, Thompson and Tuden's four types of decision-making will correspond to the environmental states identified by Emery and Trist (Table 1). As shown in Figure 1, Kouzmin and Jannan (1989) labelled the four types of decision-making contexts as Algorithm, Opportunity-Cost, Muddling Through and Crisis. The complexity of decision-making increases with the increase in environmental disturbance and uncertainty. The authors explain that turbulent events and crises can be traced through certain "crisis paths", which are explained in terms of the four contingent decision making contexts. Each network begins with the first contingent class; namely, Algorithm (status quo) and ends with the fourth contingent class; namely, crisis. Yet, different paths can be travelled for events to reach the crisis stage.

Figure 1 illustrates the four different decision pathways discussed in the Contingency Typology. The first crisis decision pathway (Algorithm) is the longest one, whereby, events travel through stages 1, 2, 3 and 4. The second crisis pathway (Opportunity Cost) is shorter, where the events travel through the stages 1-2-4. The third crisis decision pathway (Muddling Through) is also shorter than the first path and it covers stages 1, 3 and 4. The fourth crisis pathway (Crisis) 'is the shortest and covers stages 1 to 4.

Figure 1: Contingency Typology

Algorithm 1

3 Muddling



Opportunity Cost 2

4 Crisis

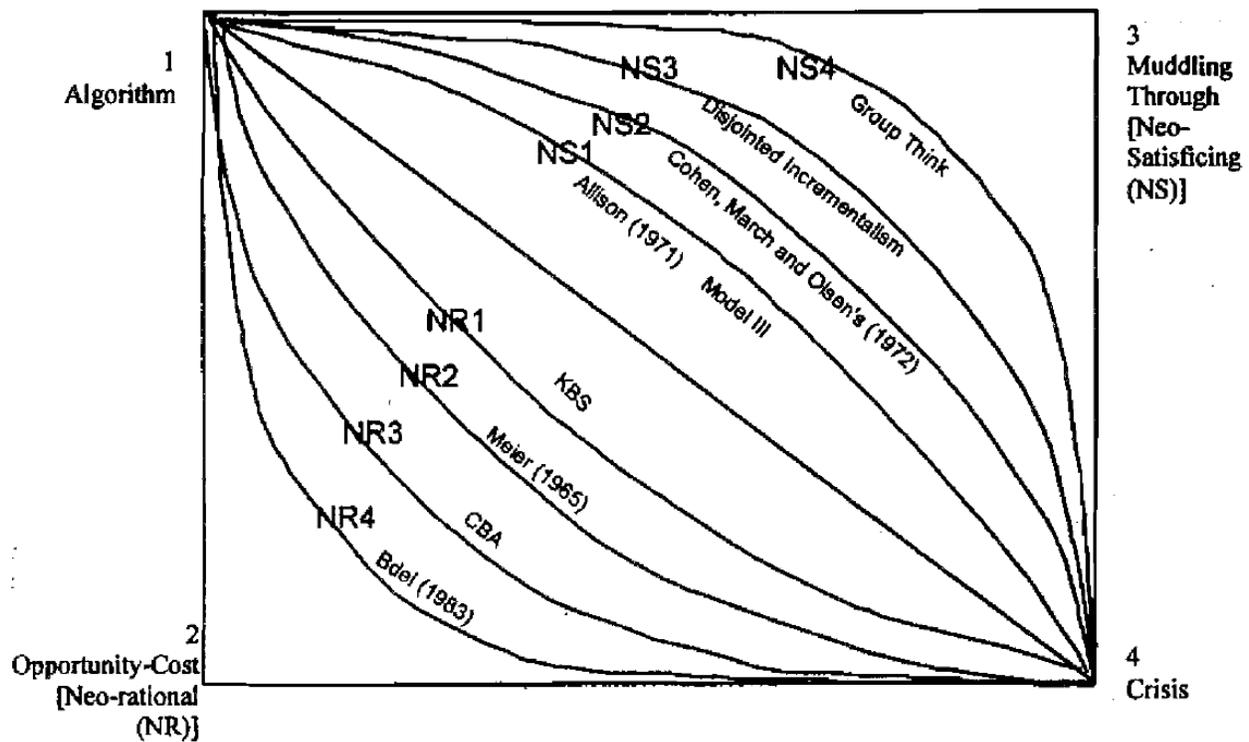
Source: Jarman and Kouzmin (1990:418).

Within the creeping crisis Risk Path Analysis Model (RPAM), Jarman and Kouzmin (1994a), propose eight policy modes/paths, which constitute the 'heuristic core of the meta-policy model', thus, allowing for the progression of uncertainty scenarios. Figure 2 depicts the Risk Path Analysis Model (RPAM). Using the RPAM for creeping crisis analysis, two directions are used to represent different levels of uncertainty scenarios. The first direction covers the right hand side of phases 1 to 4 and is termed Neo-Satisficing (NS) at phase 3. The second direction covers the left hand side and is termed Neo-Rational (NR) at phase 2. NRI represents the most predictable type of decision situation, with the lowest level of environmental uncertainty, whilst NR4 is the least predictable type of decision situation, with the highest level of environmental uncertainty. On the other side, the outcome of the decision is most predictable at NS1, and least predictable at NS4.

The *neo-satisficing* dimension provides a progression of decision-making modes of analysis. It is labelled (NS). NS1 is represented by Allison's (1971) Model III (Bureaucratic Politics). NS2 is demonstrated by Cohen, March and Olsen (1972) 'Garbage Can' model. NS3 is represented by Hirschman and Lindblom (1969) 'Disjointed Incrementalism'. NS4 is demonstrated by 'group think' (Janis, 1972; 1982; Janis and Mann, 1977; 't Hart, 1990). The Neo-Rational decision is labelled (NR) where NRI represents the 'knowledge-based systems' (KBS) (Mattos, 1991). NR2 represents the concern for the behaviour of operationally routine systems experiencing "overload" (Meier, 1965). NR3 represents cost-benefit analysis and 'policy analysis' schema (Quade, 1985). NR4 demonstrates an extreme case of meta-policy analysis (Brewer and de Leon" 1983).

RPAM provides an interesting theoretical frame-work to identify and evaluate various policy pathways, within a system crisis situation, needed for policy recommendations. Given the RPAM model, a basic question that comes to mind relates to the role that crisis management theory and practice can play in the formulation of reconstructive policy planning and development, at the national level. Finally, with the application of the RPAM, reactions to decision crisis pathways can be addressed.

Figure 2: Risk Path Analysis Model (RPAM)



Source: Jannan and Kouzmin (1994:410)

Crisis, Breakdown and Re-equilibration Model

The Breakdown Re-equilibration Model (Linz and Stephan, 1978) represents a more politically-orientated model for recovery after turbulence. Linz (1978) clearly indicates that there is no meaningful accepted measure of the degree of democracy. He emphasizes the fact that democracy is only a 'means to an end'. Nevertheless, he summarizes a few criteria for democracy as follows:

- 'Legal freedom to formulate and advance political alternatives with the concomitant rights to free association;
- free speech and other basic freedoms of person;
- free and non-violent competition among leaders with periodic validation of their claim to rule;
- inclusion of all effective political offices in the democratic process; and
- provision for the participation of all members of the political community, whatever their political preferences'. (Linz, 1978).

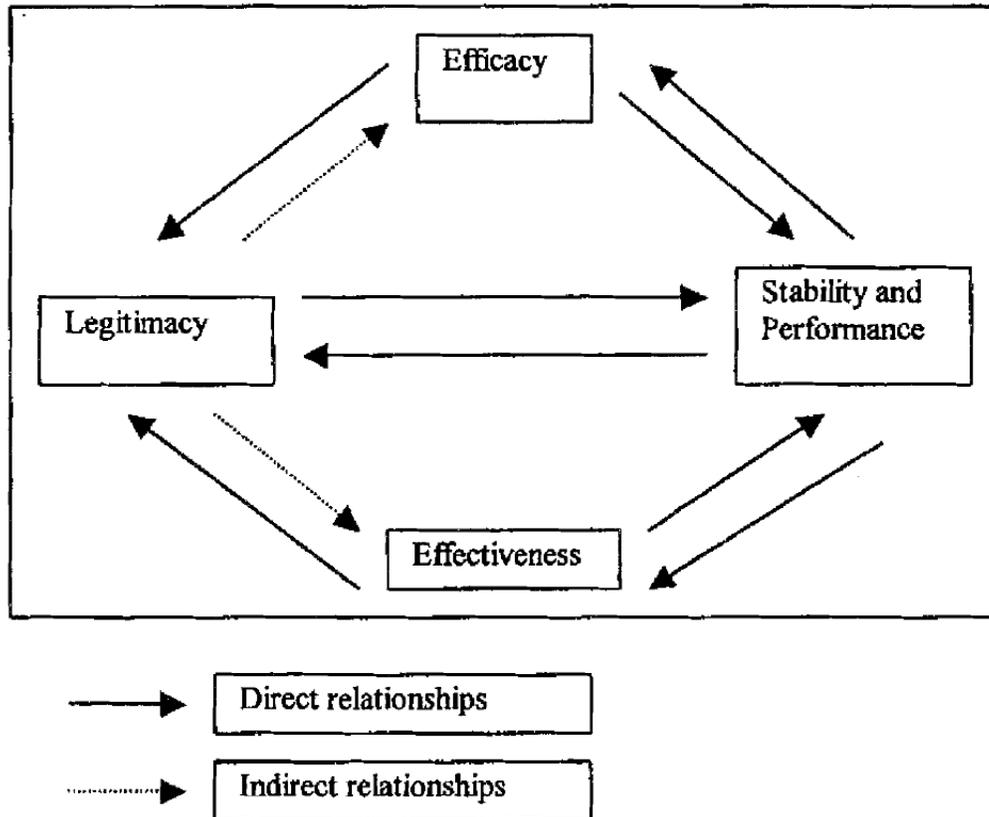
The Breakdown Re-equilibration Model addresses the dynamics of the political process of both breakdown and recovery. The application of the above-mentioned model helps to analyse such questions related to the availability of democracy alleviation options, and inevitability of the breakdown of democracy. In conjunction with the previously discussed crisis management contingency frame-works, the Breakdown Re-equilibrium Model is used to develop the proposed Reconstruction-Governance Contingency Path Analysis.

Linz (1978) emphasizes that even though the line between cause and effect is rather unclear, political violence represents both an indicator and a contributing cause of breakdown. The Breakdown Re-equilibration Model is based on three main elements; (namely, legitimacy, efficacy and effectiveness. Linz's (1978) relative definition of a legitimate government is 'the one considered to be the least evil of the forms of government'. A major requirement for democratic governments is to have the majority of its citizens and armed forces believe in its legitimacy. It is the perception of the government's legitimacy that enables it to enforce its decisions. Nevertheless, in every society there are always those who tend to reject the legitimacy of the government in charge. The perceptions of legitimacy are rather dynamic, in the sense that legitimacy is granted and withdrawn continuously. Political socialization plays an important role in clarifying the legitimacy of democratic institutions.

The two other dimensions which characterize a political system is its efficacy and its effectiveness, both of which can either strengthen or weaken the belief in legitimacy (Linz, 1978). Efficacy is defined as the 'capacity of a regime to find solutions to the basic problems facing any political system that are perceived as more satisfactory than unsatisfactory by aware citizens' (Linz, 1978). The efficacy of a regime is judged by the sum of its actions over a long period of time. It is also compared to the performance of different governments as well. With the loss of legitimacy, the regime in charge collapses which, in turn, improves the legitimacy of the new regime. Linz (1978) emphasizes that legitimacy and efficacy are two different dimensions that are highly inter-related. Efficacy tends to greatly affect a regime's legitimacy. As a system's efficacy drops, the intensity of legitimacy of the regime would drop as well.

The third dimension of a regime is its effectiveness (Linz, 1978). Effectiveness is usually treated in conjunction with the regime's efficacy. Linz (1978) defines effectiveness as the 'capacity to implement the policies formulated, with the desired results'. Just like efficacy, legitimacy and effectiveness are also highly inter-related. Ineffectiveness, on the part of the regime, weakens the intensity of its legitimacy. Ineffectiveness also impacts the degree of perceived efficacy. This, again, raises all sorts of problems for new regimes. Linz (1978) relates the effectiveness dimension to the use of power. He clearly states that the inefficient use of force leads to the transfer of legitimacy to the regime's opponents.

Figure 3: Breakdown Re-Equilibration Model



Source: Linz and Stephan (1978: 19)

The Breakdown Re-equilibration model is based on the inter-relationships between the previously discussed three dimensions of political regimes (Figure 3). The model, itself, takes into consideration the changing nature of each of the political system's dimensions; including legitimacy, efficacy and effectiveness, at any time through-out its development. Linz (1978) explains the breakdown of a political regime as a crisis of legitimacy, efficacy or effectiveness. He also combines these three dimensions together to produce an eight-fold typology of situations.

Limitations and Convergence of the Frame-works

Hirschman's Decline -Recovery Model is used in the current study to identify and evaluate the inter-relationships among the crucial internal recovery reaction mechanisms in focus; namely, the brain influx movements, effective media regulation and flexible governance patterns. The multi-national brain drain option corresponds to the exit recuperation mechanism, whilst media regulation corresponds to the voice option, as discussed by Hirschman (1970). In addition, Hirschman's Decline -Recovery Model is used to study the interplay among the previously mentioned internal recovery mechanisms; thus, providing a basic frame-work for the development of a holistic reconstructive policy agenda for a system's evolution after instability and turbulence.

Just like exit, the brain drain phenomenon represents a double-edged recuperation mechanism, whereby, recovery is expected to come from without, rather than from within. Unless multi-national brain drain has been manufactured, rather than being genuine, it may prove to be an extremely powerful option, in terms of altering the government in charge, and ameliorate the deterioration taking place within the system in focus. In addition, a massive brain drain movement may prove to be a crisis that implodes upon itself. With time, it may even impact post-crisis recovery and reconstruction efforts.

Just like voice, the media option constitutes a crucial alternative recovery course of action. With an effective use of the media, recovery is expected to be initiated, either from within, or from without. Once again, the

media choice could either be used as a residual to the withdrawal option, or in conjunction with it. The decision to resort to the media as the main recuperation mechanism is highly conditioned by:

- The governance patterns exercised by the authorities in charge in terms of either hindering or enhancing the freedom of expression;
- the availability of the institutions and the institutional devices needed to voice public concerns;
- the level of risk that individual stake-holders and agencies are willing to take; and
- their perceptions of the possible success in achieving the desired changes to the system's policies and practices.

Hirschman (1970) clearly indicates in his Decline -Recovery Model, that the interplay between exit and voice is affected by the feelings of loyalty exhibited by prominent members of society. This could easily be translated to the inter-relationships between the two main decline -recovery variables in focus; namely, the brain drain and media options. In addition, the current study stresses the importance of the governance strategies practiced by the system itself, in terms of either the explicit or implicit allowance or hindrance for either mechanisms.

If it is not manufactured by the authorities in control, genuine exit could be considered as treason, whilst resorting to the use of the media, could be considered as mutiny and rebellion (Hirschman, 1970). In such cases, the system's deterioration is so well advanced, that recovery and development are neither possible, nor allowed. With such an extreme case of decay and deterioration, both the brain drain and the media modes may be used so strongly, that their impact as recuperation mechanisms may be rather destructive and harmful.

Hirschman's Decline -Recovery Model has contributed significantly to the current study through the identification and evaluation of temporal and situation specific reform mechanisms, with essentially, a non-market; social; holistic orientation to recovery and reconstruction. Although Hirschman's model is extremely useful for the development of the re-constructive policy agenda under-taken in the current study, it has a major deficiency. It does not prescribe a certain optimal mix of the two recovery forces of exit and voice. Nevertheless, this limitation is understandable given the fact that efficient recovery mixes tend to change over time.

As it has been previously implied, the reform forces, themselves, are subject to decay and deterioration. Even under relatively more stable environments, it is rarely ever possible to prescribe solid optimal mixes of the various recuperation mechanisms under study. One way of over-coming the previously mentioned limitation, is for the system, itself, to rely on one of the recuperation mechanisms whilst having a sporadic injection of the other, as and when, needed. An effective reaction to early crisis warning signals is beneficial in terms of enhancing the design of the institutions, and the institutional devices, needed to effectively help a system back on its recovery path.

Although, at first look, the *Contingency Typology* and the *Risk Path Analysis Model* may seem to be quite abstract, their usefulness as temporal planning tools for the development of crisis events and post-crisis recovery scenarios, should not be underestimated. The application of the Risk Path Analysis Model to a specific case study allows researchers to undertake an analytical evaluation of reconstruction policy implications, related to a specific situation.

A main limitation of the Contingency Typology and the Risk Path Analysis Model is that they do not provide for the dynamic nature of the crisis phase itself. They do not allow for the time-sensitivities incorporated within stage "4" of the typology, namely, "crisis". Beyond a certain degree of decay and deterioration, a system may find itself rather fixated in a crisis mode. Thus, the embarkation on a recovery pathway becomes extremely difficult, if not impossible. As a contingent heuristic approach to crisis management, the *Contingency Typology* and the *Risk Path Analysis Model* fail to explore the dynamic nature of the crisis stage.

Nevertheless, the two previously discussed contingency crisis management frameworks are applied to the evaluation of both post-crisis reform forces under study, namely, brain influx and media regulation. The application of both contingency frameworks to the case study country in question, significantly contribute to the identification of crucial policy intervention turning points. Such discontinuity points are in turn, used to develop time-sensitive post-crisis holistic recovery response patterns to help a system evolve from turbulence.

Linz and Stephan's (1978) Breakdown Re-equilibration Model represents an interesting frame-work for the understanding of the development of pre-crisis events, leading to a gradual process of a system's political breakdown. The model, itself, also represents an integral frame-work for the formulation of political re-equilibration and reconstructive policy implications for a system's recovery after turbulence. Given the interrelationships between the feelings of loyalty displayed to a particular political regime and the 'intensity and support for its legitimacy (Linz, 1978), Hirschman's (1970) Decline Recovery Model and Linz and Stephan's (1978) Breakdown Re-equilibration Model, are used in conjunction with Jarman and Kouzmin's (1990; 1994a) Risk Path Analysis Model, as a means of constructing the proposed Reconstruction -Governance Contingency Path Analysis and the formulation of a developmental leadership pathway, based on evolving stages of recovery and reconstruction.

Contingent Stages of Evolution and Leadership Path Networking: The Reconstruction-Governance Contingency Path Analysis

We must stop behaving as people do in the dark and be ready to live in the light.

(Romans 14.11-13)

The Reconstruction - Governance Contingency Path Analysis represents a nonlinear social system's rehabilitative model of macro-crisis, multi-level contingency evolutionary programme. It defines recovery decision-making contexts and their possible re-equilibration elements, whereby, individual rehabilitative projects can be defined in terms Of inter-related evolutionary/incremental stages leading to recovery pathways. A leadership path analysis represents a crucial component of the proposed model as it impacts on the progression of re-constructive activities. The contingency approach to recovery outlined in this research approaches the issue of reconstruction strategy-making from a more qualitative perspective. It is mainly deductive in nature (Jarman and Kouzmin 1994b).

Two sets of independent conceptual variables are considered in terms of recovery and reconstruction after turbulence: First, the contingent decision-making contexts used in a crisis situation (Kouzmin and Jarman, 1989) and, secondly, the elements of a system's political breakdown and re-equilibration (Linz and Stephan, 1978) which impact on the decline -recovery decision-making contexts. When these two contingency schemas are juxtaposed, the four types of decision-making contexts (Algorithm, Opportunity-Cost, Muddling Through and Crisis) will be related to the system's political elements of breakdown and re-equilibration (Stability; Efficacy; Effectiveness and Instability) (Table 2).

Juxtaposing the Contingency Typology to the more politically orientated Breakdown and Re-equilibration Model provides an interesting analytical tool to evaluate a system's evolutionary/incremental phases of recovery and re-equilibration (Figure 4). The four resultant reconstruction stages are set out in Table 3.

Table 2: Decision-Making Contexts, Breakdown and Re-equilibration Elements

Decision-Making Contexts		Breakdown and Re-equilibration Elements	
1	Algorithm	-	Stability
2	Opportunity-Cost	-	Efficacy
3	Muddling Through	-	Effectiveness
4	Crisis	-	Instability

Figure 4: Contingent Systems Reconstruction Stages

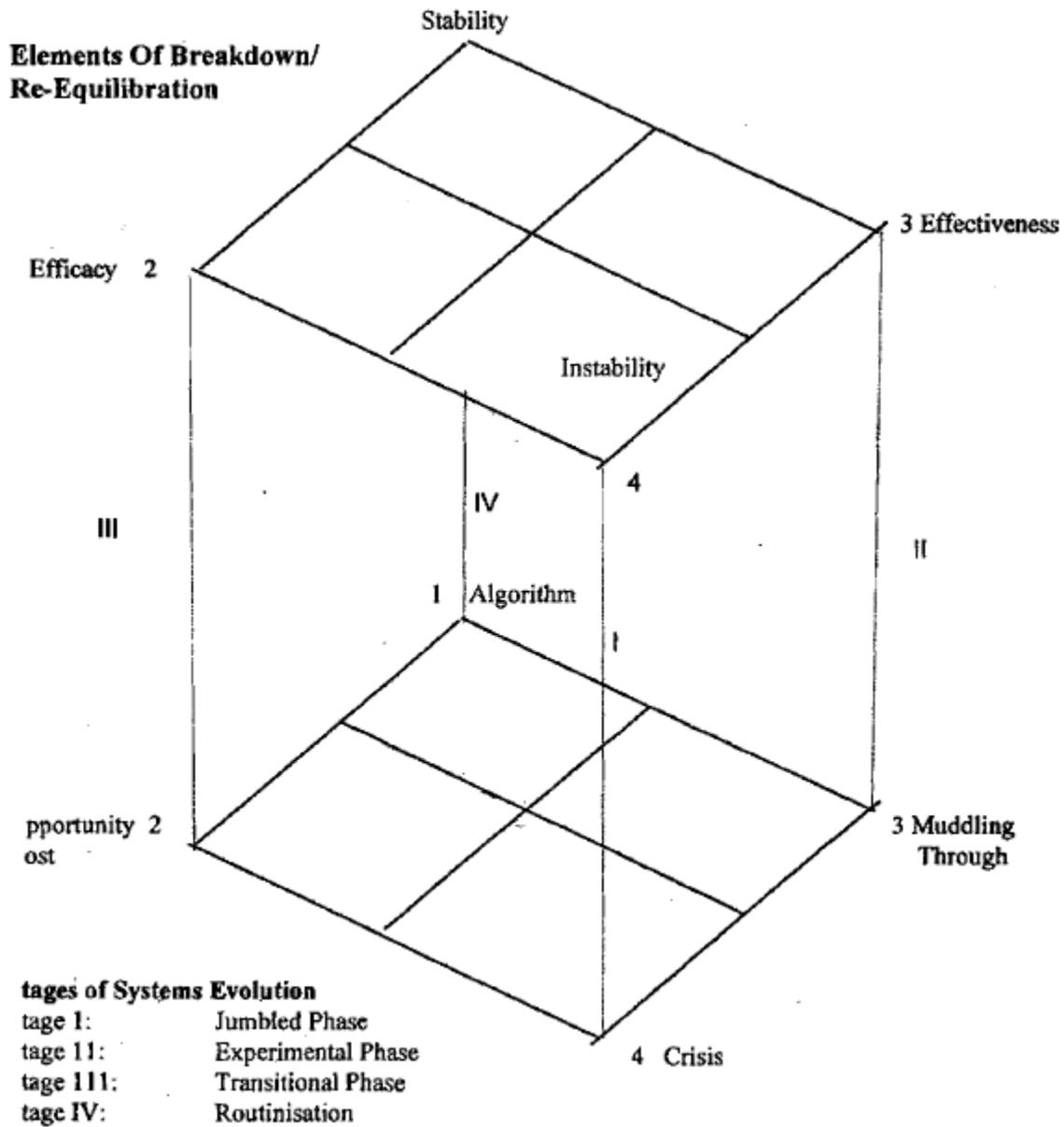
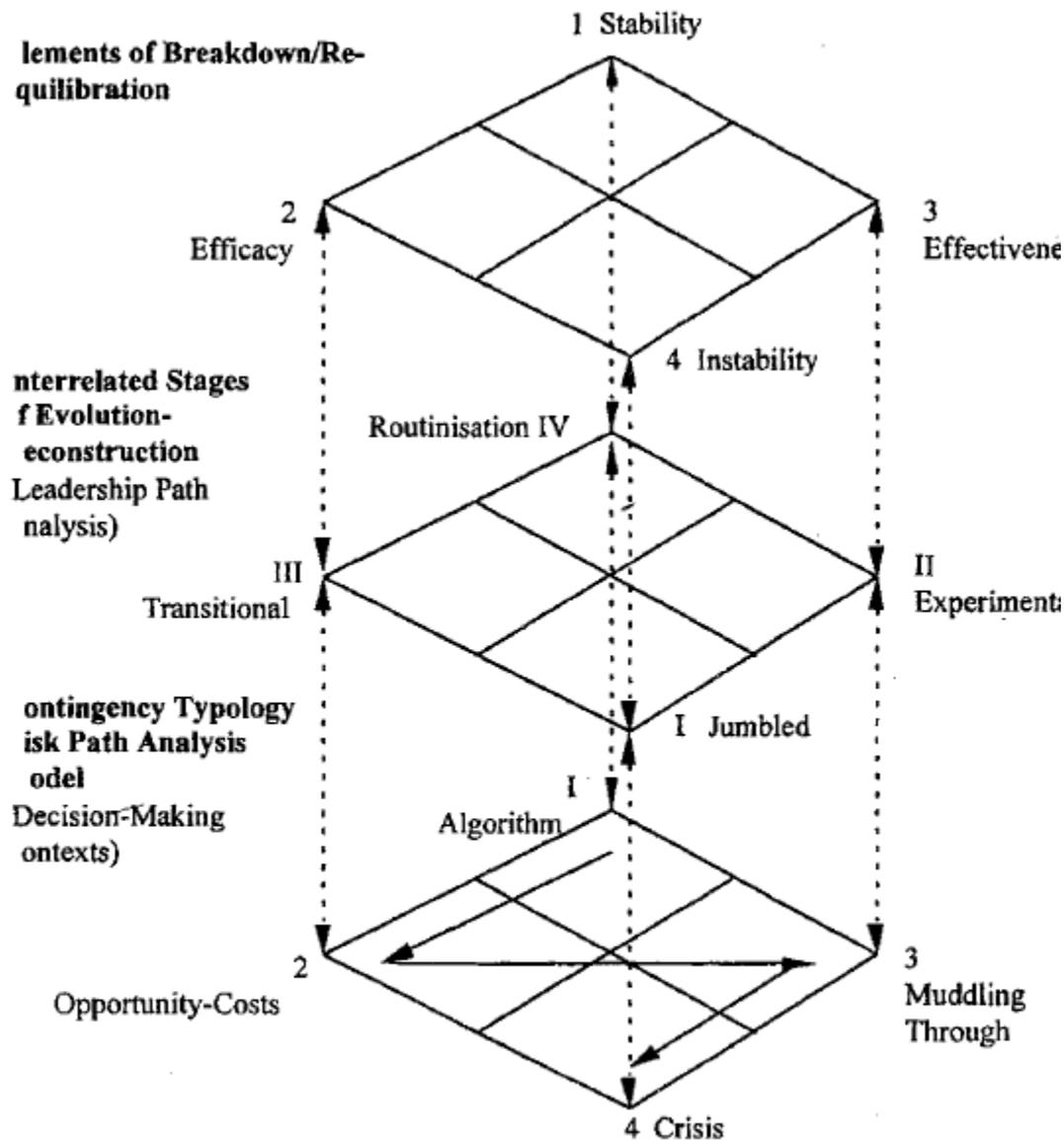


Table 3: Contingent System's Reconstruction Stages

	Decision-Making Contexts	Breakdown and Re-equilibration Elements	Recovery and Reconstruction Contexts
Phase I	Crisis	+ Instability	= Jumbled Phase
Phase II	Muddling Through	+ Effectiveness	= Experimental Phase
Phase III	Opportunity Cost	+ Efficacy	= Transitional Phase
Phase IV	Algorithm	+ Stability	= Routinisation

(Linz and Stephan, 1978; Kouzmin and Jarman, 1989)

Figure 5: System's Inter-related Stages of Evolution and Reconstruction



Stages of Evolution: Leadership Pathways
 Stage I: Jumbled Phase; Stage II: Experimental Phase;
 Stage III: Transitional Phase; Stage IV: Routinisation

Although the previously identified four reconstruction phases are highly interrelated; each of them possesses distinct properties. First, Phase I (Jumbled Phase) represents a new order or a new "Algorithmic State", which is characterized by a high degree of uncertainty. Under the jumbled, disordered phase, the system is just emerging out of a crisis situation, with the previous system being characterized with instability and lack of performance. The system itself may either be fixated in a crisis phase, given certain socio-political factors, or it may

be just attempting to embark on re-constructive mode. Even with the latter case, the reconstruction goals, and the means for attaining them, may neither be determined nor clear (Table 4). The new regime taking over the political system may come up with various re-constructive promises that are difficult to realize with the system's limited resources. Accordingly, Phase I is characterized with a high-level of risk and uncertainty at best.

Secondly, Phase II (Experimental State) again, represents a new order which in terms of stability and performance; tend to be more comfortable than Phase I. Since the system is still in a muddling through stage, the new political regime may not be able to study the system's reconstruction needs and, thus, deliver accordingly (Table 4). Nevertheless, governmental effectiveness of formulating and implementing the reconstructive policies related to the internal reform forces needed with the desired results, eventually will positively influence the intensity of the legitimacy granted to the new regime in charge. This, in turn, may lead to higher degrees of stability and certainty within the system itself.

Table 4: Reconstruction Meta -Policy Analysis

	Rehabilitative Internal Reform Forces	Rehabilitative Means*	Recovery and Reconstruction Contexts
Phase I	Undetermined	Undetermined	Jumbled and Disorderly
Phase II	Determined	Ambiguous	Experimental State
Phase III	Undetermined	Clear	Transitional State
Phase IV	Determined	Clear	Routinizational and Stability
* Rehabilitative means refer to the methods and approaches used to actually realise the system's constructive reform forces needed.			

Thirdly, Phase III (Transitional State) is the third phase of reconstruction. It, again, represents a new order which could be characterized by short-term stability. The capacity of the regime in charge to find appropriate solutions to internal reconstruction and developmental problems will, again, positively impact the feelings of loyalty displayed to the new regime. This, in turn, will favourably influence the intensity of legitimacy granted to the government in charge. In other words, the more efficacious the regime is in choosing among alternative reconstruction strategies, the better off are the new government's chances of enhancing stability within the system itself. Although the reconstruction goals may be known and quite clear to policy planners and public administrators, the means of attaining them is rather ambiguous. Accordingly, comprehensive feasibility studies and cost-benefit analysis of alternative reconstruction strategies should be carefully undertaken at this stage of rehabilitation and development (Table 4).

Finally, Phase IV (Routinization and Stability) represents the fourth, and last, phase of reconstruction. Assuming that the new government has been both efficacious and effective in formulating and implementing the reconstructive policies needed, it will, then, be perceived by its citizens as effective governance for the perusal of collective goals: Accordingly, in this case, the general public probably displays strong feelings of loyalty to the new regime which, in turn, gets "translated into a higher intensity of legitimacy for the new government. With such strong feelings of trust, loyalty and legitimacy; the government is in an excellent position to reassess the system's current reconstruction needs and determine the appropriate cost-effective means of achieving them (Table 4). Although it is highly improbable that the system can go back to its pre-crisis algorithmic state, the new post-crisis order, at its fourth phase of recovery, could be characterized by long-term stability. The achievement of such long-term stability is obviously conditioned by the system's attainment of the internal reform requisites needed.

Regardless of the re-constructive phase being considered, it is worth noting that the post-crisis new order is usually different from the pre-crisis algorithmic state. Figure 6 represents time-sensitive contingent stages of recovery and reconstruction. The nature of the above-mentioned four recovery phases can either be evolutionary or

incremental, as conditioned by the reconstruction pathways being followed. This depends on the seriousness and the pace for which previously identified reconstruction requisites are being attained by the political regime in charge which, in turn, is determined by the leadership strategy practiced by the new government.

Figure 6: Contingent Stages of Recovery and Reconstruction

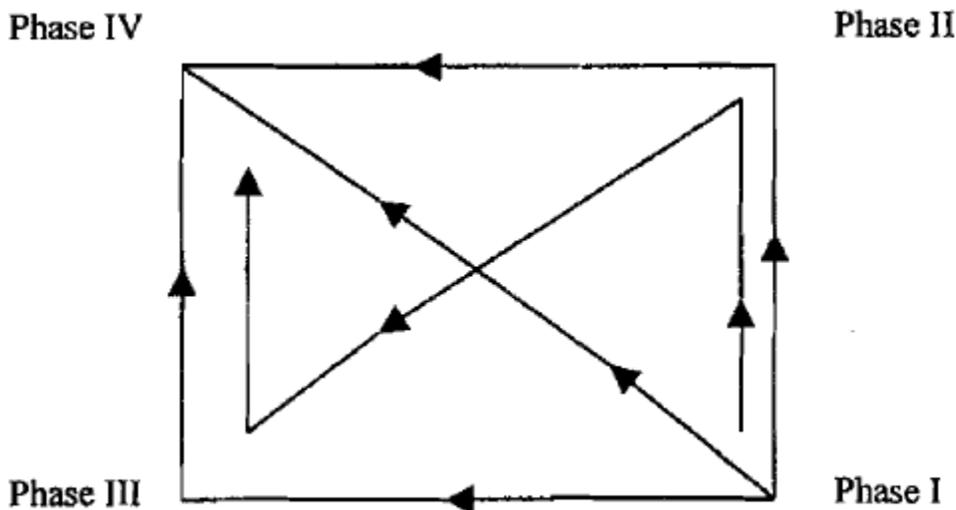
PHASE IV Routinisation and Stability	PHASE II Experimental State
PHASE III Transitional State	PHASE I Jumbled State

The non-linear system's reconstruction -governance model of macro-crisis, multilevel contingency evolutionary schema defines crisis -recovery; decision-making types and their possible breakdown -re-equilibration elements; whereby individual rehabilitative projects can be defined in terms of inter-related evolutionary/incremental stages leading to recovery policies.

As a system embarks on a recovery mode, it tends to move away from Phase I in the direction of Phase IV (from a jumbled state to routinization and stability). Meanwhile, there is a number of recovery pathways that the system may choose to undertake. Figure 7 outlines four different recovery pathways, all of which start from Phase I and end in Phase IV. The first recovery network (Paths I; II; III; IV) represents the longest recovery pathway, whilst the last recovery network (Paths I; IV) represent the shortest rehabilitative pathway. In addition, the system may either move towards Phases II or III before finally reaching Phase IV.

The recovery network followed by the system is determined by: First, the system's capacity to clearly determine an optimal reconstructive strategy, and be able to actually realize it with the available resources. Secondly, the appropriateness of the governance patterns being practiced by the political regime in charge.

Figure 7: Reconstruction Paths



Leadership Path Networking

The current research reveals new methodological synergies, not just in terms of contingent stages of evolution and reconstruction, but also in terms of the formulation of developmental leadership path analysis. The four evolutionary/incremental rehabilitative phases previously identified are based on the actual practice of suitable governance patterns by the political regime in control. An integral part of the Reconstruction Governance Contingency Path Analysis is the development and evaluation of contingent leadership pathways, geared towards the formulation of reconstructive, transferable policy implications for a non-linear social system's recovery after turbulence.

At each and every recovery phase, the new government in control may meet a number of challenges to reconstruction and development. The ability to embark on a recovery mode whilst eventually overcoming emerging reconstruction barriers is conditioned by the governance patterns practiced by the new government. The literature search undertaken in the area of leadership under crisis, shows that little is known about leadership strategies in chaotic situations. There is definitely a need for state-craft breakthroughs (Dror, 1993). Before embarking on a reconstructive mode, it is important to develop an understanding of such specialized requisites of government.

The new post-crisis regime may have to undertake shifts in their leadership strategies as a means of gaining public approval and increasing the intensity of their problematic legitimacy. In her book, titled *The Spellbinders: Charismatic Political Leadership*, Willner (1984) advocates the use of some form of charismatic leadership, especially in the short-run, as an effective conflict-resolving strategy. Nevertheless, given chaotic situations the official bureaucrats in charge may regard the newly emerging charismatic leader as a threat to their official authority (Jarman. and Kouzmin, 1994b). This, in itself, can create various types of conflicts with the system's social and bureau-political setting.

With respect to charismatic leadership, religious identification may be quite relevant (Wriggins, 1969). The general public may identify with a newly emerging leader due to purely religious inclinations. "Confessional" politics can play a critical role in an entity's political system, whilst, at times, posing significant constitutional difficulties. Besides religions affiliations, personal leaders may be accepted due to family connections; common regional origins or a past-sense of indebtedness (Wriggins, 1969). In such cases, a good deal of political resources are used to maintain the loyalty and perceived legitimacy of the followers.

Although charismatic leadership has been clearly cited by some as an effective leadership strategy under chaotic situations, various studies recommend other governance patterns. Linz (1978) states that there is no accepted measure of the degree of democracy, but the main distinction between putative democracies is based on majority rule. Under chaotic situations, Linz (1978) clearly states that leaders, especially in the short-run, should value the persistence of democratic institutions. Given turbulence and instability, democratic leadership should prove its capabilities (Hirschman, 1965). Since most governments operate under varying degrees of populism and mass electoral conditions, accountability makes it extremely crucial for political leaders to demonstrate goals acceptable to the majority of the population (Apter, 1965; Linz, 1978).

Dror (1988) refers to nearly all decision-making as fuzzy gambling. Accordingly, every decision to be taken under conditions of risk, uncertainty, surprise propensities and ignorance constitute a gamble. Just as surprises can be quite disruptive to decision-makers, crisis situations can also be considered positive incidences in terms of providing windows of opportunity. To be prepared to act as quickly as needed, Dror (1988) states that it is not just crucial to make predictions of surprise possibilities, but it is essential to update, continuously, the standard list of possible. surprise events. Nevertheless, regardless of how well prepared the political system is, significant surprises do emerge. This necessitates crisis management upgrading. Dror (1988) stresses two main issues regarding crisis management decision-making. First, previously prepared surprise lists become extremely significant for upgrading crisis decision-making. Secondly, pre-testing decisions relevant to possible surprise situations may prove to be quite useful.

History has been greatly influenced by the governance rules of different rulers. Various additional leadership patterns have been practiced by famous, and less famous, leaders. In their book entitled, *The Middle East:*

Politics and Power, Bill and Leiden (1974) discuss a classification of three leadership strategies, based upon general patterns of power and politics; namely, traditional; reforming; and transformational leadership.

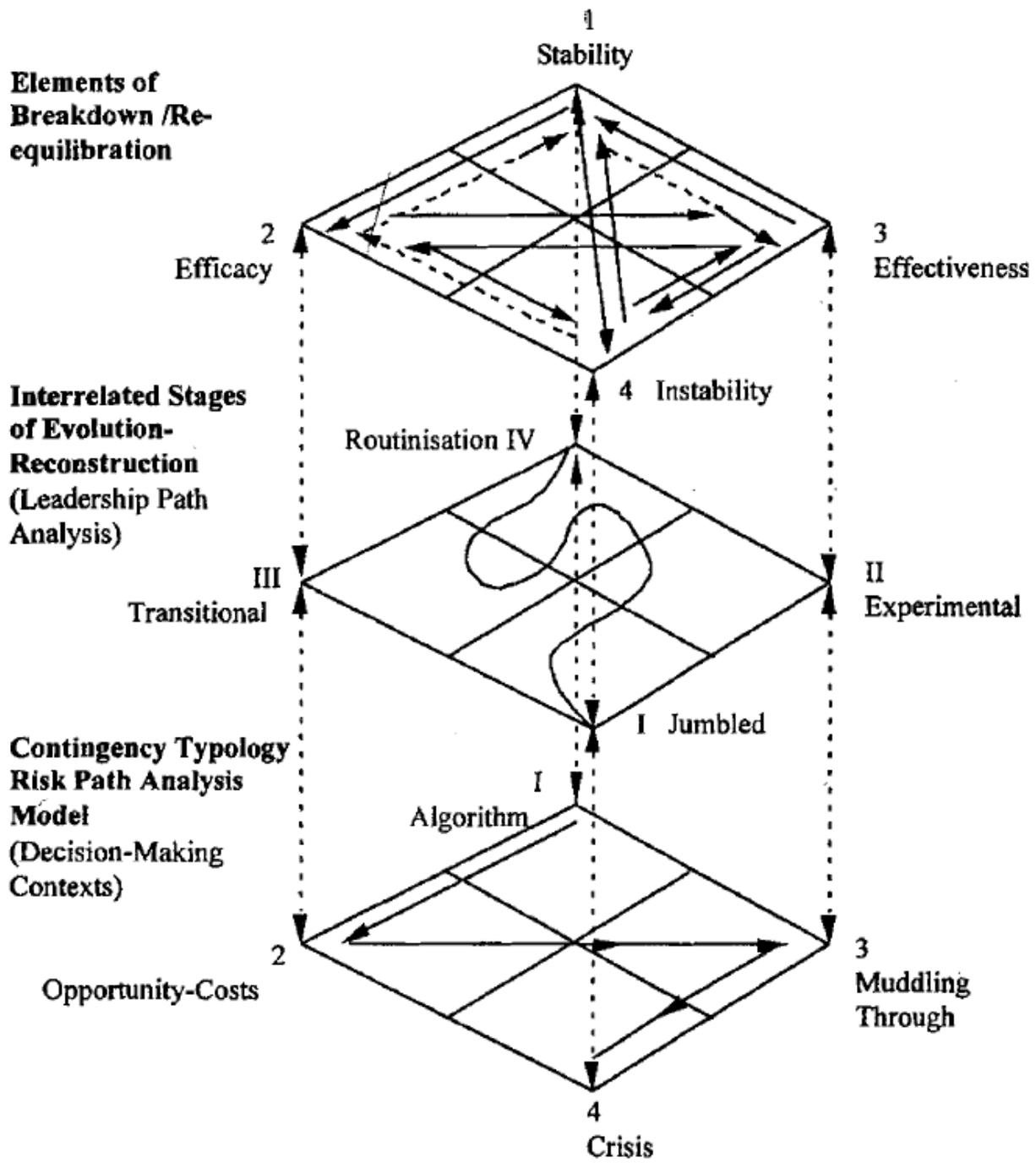
Patrimonial leadership reflects a basic type of traditional ruler-ship. Traditional rulers tend to demand full acceptance and respect of their people. Even their expert advisors would not express their opinions without first ascertaining the ruler's views of their suggestions. The leader's family relies at the heart of such patrimonial systems. With most traditional patterns of rule, family ties, including marriages, become exceptionally political. Marital relations play extremely important political roles in expanding the ruler's power. Issues of dedication and loyalty are the essence of patrimonial leadership. Personal face-to-face politics and superior military ability are extremely crucial for patrimonial rulers. Although some economic changes may result, patrimonial ruler-ship hardly leads to significant degrees of social, economic and political administration and development (Bill and Leiden, 1974). Actual political decision-making continues to lie entirely in the person of the ruler himself.

Reforming leaders may also perceive themselves as playing an essential patrimonial role for their countries. Although they might be highly dedicated to preserving the traditional political order, they tend to introduce various types of reforms in the administrative; educational; industrial; social; and political structures. Through implementing major developmental reforms, reforming leaders preserve their patrimonial role and their power-base.

Transforming leaders tend to radically revolutionize various traditional sociopolitical patterns dominating in their societies. Radical transformational leadership is widely practiced in political environments characterized by nepotism; demoralization and personal and administrative corruption. With the use of transformational leadership, the ultimate goal is to transform personal charisma; authoritarian rule and patrimonial leadership into a self-sustaining transformational programme (Bill and Leiden, 1974).

When considering the previously discussed leadership strategies, one can identify post-crisis potential, situational leadership pathways along which rulers may choose to follow whilst guiding the system's passage throughout the recovery and reconstructive phases, starting with Phase J and ending with Phase IV. The proposed RGPA argues for a temporal developmental and adaptive leadership paradigm, which allows reconstruction leaders to shift among alternative leadership strategies as needed during the post-crisis recovery phases (Figure 8). A main limitation of the RGPA is that it does not prescribe common governance patterns to similar post-crisis recovery phases. It is the view, here, that temporal governance response strategies tend to be situation-specific. Nevertheless, developing an understanding of governance patterns practiced during past recovery situations would help to better shape future post-crisis recovery governance response strategies. The problem arises if the system fails to develop active, adaptive leadership strategies, as needed. In such cases, the system may find itself being fixated with a rather long-term crisis phase. In addition, at such a deteriorated state, recovery and development may be unfeasible or, even, undesirable.

Figure 8: Reconstruction -Leadership Path Networking



Conclusions and Directions for Future Research

You give but little when you give of your possessions.
 It is when you give of yourself that you truly give.

(Gibran, 2007)

The Reconstruction - Governance Contingency Path Analysis represents a crucial temporal, rehabilitative planning tool for a system's recovery after turbulence applicable to both nations and corporations. . In summary, it represents an analytical, but heuristic, mode used to identify internal reform forces and reconstructive institutional devices, significant to the formulation and implementation of satisficing reconstruction strategies, given a system's limited resources, In addition to its temporal dimension, the RGPA presents a social; holistic orientation to recovery and reconstruction. It incorporates both non-market, as well as market, economic internal reform mechanisms simultaneously used to help a system embark on a recovery mode.

Furthermore, the RGPA constitutes a crucial situation-specific reconstruction model. It applies to various types of crisis situations at different levels of analysis. The RGPA could be adapted to apply at the national; organizational and corporate levels of analysis.

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A global Comparison of Culture Trade Development in World Cities

Li Xiaomu

*Beijing International studies University,
Beijing, China*

Yang Pinqiu

*Beijing International studies University,
Beijing, China*

Abstract

Cultural economy is one of the global trends of economic development, thus improving "soft strength" by means of culture industry and its international trade has become a common choice of the developed countries and regions. In the negotiations and agreements amongst the WTO members, culture-exporting and importing, an important and special component of international trade, has been brought into the foreign trade development strategies in many countries. In the mean time, as an important part of international trade in service, international culture trade has become one of the key competitive areas in the global trade. On the other hand, World Cities are commonly considered as those with dominant and influential power on the global politics, economies and cultures. International culture trade refers to integrating and configuring global resources and factors, while world cities can lead and change thinking patterns and value orientations.

This article focuses on three points. The first one is the analysis of how the World Cities such as New York, London and Tokyo crack the problems their cultural industries have encountered in the development of international trade; second, sort out modes and countermeasures that suit for domestic and international culture trade development of the world cities; third, eventually promoting cities aiming at building world cities to step towards the goalpragmatically with actionable policy recommendations through the promotion of international cultural trade development that effectively enhance the city's control and influence.

Key words: International Culture Trade World City Development Pattern

The current conditions of cultural trade development of world cities

The development of the world city's cultural trade is embracing a trend of diversity, specialization and agglomeration. Nearly every world city has an internationally competitive cultural trade industry, for example the New York City has performances and film and television industry, and Tokyo has animation industry, etc. Here, we choose to portray representative cultural industries for each of the world cities.

New York

The performing industry in New York enjoys a worldwide reputation; the most famous representative is the Broadway Theater. Today, Broadway not only has created a unique urban culture of New York, but also has become one of the pillar industries of New York's economic development. Broadway is the city's most attractive scene for tourists. Every year millions of visitors flock to New York (table 1).

Unit: million

The number of visitors New York received, 2000-2009										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total tourists	36.2	35.2	35.3	37.8	39.9	42.7	43.8	46	47	45.6
International tourists	6.8	5.7	5.1	4.8	6.2	6.8	7.3	8.8	9.5	8.6

Source: NYC, the official guide

Over 50% of these tourists are on an exclusive trip to see the Broadway show. It is reported that the number of visitors still increases at a proportion of 3% per year, of which 60% are from outside New York. The annual box office revenue reaches approximately 1.2 billion U.S. dollars in the whole Broadway Area, a huge income for New York City. At the same time the development of New York's performing industry also helps the economic growth and employment of related industries, such as restaurants, bars, gifts industry and so on.

The following features characterize the development of Tokyo's cartoon industry:

Matured Production Mode

Broadway's performance involves many aspects: orderly and highly responsible work amongst performing theater, performance managers, theater managers, producers, marketing teams, and partners, coordination and support between various departments and careful preparation and plan are all needed. Be he producers or media, partners, every party can fulfill their respective responsibilities and commitments as scheduled, cooperate and joint plan, mutually trust and support each other to achieve a multi-winning fruit of producers, promoters and venues.

Marketing strategies

Broadway often has ingenuity in marketing. It bonds the interests of advertising companies with that of the theater producers, establishing good incentives, and rendering full-work of advertising companies. Advertising companies can seize the curiosity of potential audiences, and attract them to come. In addition, a Broadway ticket is also very flexible and can be discounted, often seven or eight tickets can be treated as group ones, which provides sources of audience adding to the box.

Various derivatives

The income source of Broadway lies with its plethora derivatives. In addition to the works and touring of Broadway which are entirely owned and controlled by the parent company of Broadway, the producers also publish CD-ROMs, DVD, theater products, cartoon films, school performances, and international tour and apply for international certifications. All these different incomes will pay royalties to the parent company of Broadway, a mature business model to ensure a variety of income back to the original, investors and producers. It not only effectively reduces the business risk, but also broadens income sources, and increases the performance income.

Tokyo

Japan has long been recognized as the Kingdom of Cartoons. According to the statics of Japanese Economic Intelligence Report in January 2004, the Japanese cartoon industry accounts for 60% of the world cartoon market. And Tokyo, engulfing 81.5% of Japan's cartoon companies, is acclaimed as the Capital of Cartoons. In year 2004, 359 of a total 440 domestic companies managing cartoons teemed in Tokyo; most of the 50 major domestic cartoon corporations had their headquarters in Tokyo. In 2003, approximately 200 to 300 of the 4000 publishers in Tokyo were major cartoon presses, and the city generated about 277 kinds of cartoon magazines. (CHU Jinfeng 2009)

The following features characterize the development of Tokyo's cartoon industry:

Clear Intra-industry Division of Labor

The cartoon industry as a whole functions like uninterrupted chains, one clinching to another. Miscellaneous units coalesce into a proper and complete industry chain. The four steps of original cartoon works, paper publications, cartoon series and relevant films, and the cartoon derivatives and brand authorization and service coexist harmoniously. Under the premises of basing on product images, centering in copyright management and seeking momentum in lucre, every unit of the industry chain is dedicated to a clear division of labor. The boundaries between every unit, such as caricature studios, animation studios, copyright agent offices, printing enterprises, publication enterprises, television stations, newspaper offices, and production and sales of cartoon derivatives etc., are distinct. Each has its own objectives and the whole chain fully-fledged cooperative mechanism.

Matured Market Division

The Japanese cartoon products can be roughly divided into two categories. The one is adolescent-oriented and the other adult. The former can be then subdivided into different themes as science fictions, Krimis, fairy tales,

campus, aspiration, sporting, humor, adventure and maiden, etc. The latter deals with themes of humor, wits, thrills and household, etc.

Unobstructed Sales Channel

Aside from the cartoon stores and exclusive agencies for cartoon derivatives in the city, department stores and supermarkets tout comic books, animation game disks, toys, models and the like as well. It is worth mentioning that the sales channels are all law-abiding, either exclusive or bond-selling with franchise and chain enterprises. Regulating the market, it is also propitious for brand nurturing and intellectual property protecting. The Tokyo International Animation Fair, the most influential one around the world, meanwhile helps to provide a normalized platform for exhibitions, communications and business negotiations.

London

Due to a possession of nearly every creative industry, and each in London has considerable international influence, London may be the most special one of the three world cities. It is one of the three world advertising industry centers, of the three busiest film-producing centers, an international renowned city of design, and home to over 2/3 international advertising enterprises headquarters...London is genuinely worthy of the name Capital of Cultural Creativity.

The annual production of London's cultural creativity industry passes 21 billion pounds, with half a million Londoners employed. One in five newly created work position is from cultural creativity industry. According to an optimistic estimate from London First Center, by the time London hosts the Olympic Games in 2012 the creativity industry in London will reach a production of 30 billion pounds, surpassing finance industry as the first industry there.

The cultural creativity industry has become one of the biggest industries in London, its production and employment only below commerce service industry of 32 billion pounds. In the 5 years from 1995 to 2000, the annual growth rate of creativity industry soared to 8.5%, exceeding all other industries. Besides, with its high diversity, the creativity industry prides in a 4% annual production rate growth, and a 5% employment growth. In year 2001, the total production of creativity industry arrived at 21 billion pounds, assuming 1/4 of the total domestic production of creativity industry in the UK. The city's production per capita was 2500 pounds, while that of the whole country was merely 1280 pounds. In year 2000, with 0.525 million employees, it ranked the third of all industries in London on an employment basis.

The Promoting Causes of Cultural Trade in World Cities

The development of cultural trade in world cities has been vibrant. Analysing the development of those representative cultural industries in three world cities, those promoting causes can be divided into two points.

Natural Endowments and Combined Effect

"Natural endowments" are the essential factors to promote industrial development and strengthen its competitiveness, including talent, capital, technology, information, infrastructure, etc. (Chen Haiyan, Zhang Chunhu 2008) "Combined effect" refers to the economic effects and the centripetal force attracting economic activities to a certain area which stemming from the concentration of a variety of industries and economic activities in space. It is true that when "combined effect" works certain industry as a whole will benefit from circulation of commodities, labor training, technological innovation, upgrading and competition and other aspects of centralized operation.

Natural endowments and combined effect are not opposed to exist, but there is a logical progression on the relationship between them: natural endowments will inevitably lead to the combined effect. This is evident from the cultural industries in London and New York.

London

As a world city, London has a natural endowment, the combined effect of the cultural industry is also very clear. London has more than 85% of the country's fashion designers; 1/3 of the design agencies based in London, and their output accounts for 50% of the total; London has more than 50% of Britain's radio and television employees; London is also the UK game industry center, nearly 1/3 of the UK game industry development alliances based in London; among the 1100 British independent television production companies, nearly 700 of them based in London. (Wang Qi 2007)

It is the presence of these talents, institutions that makes significant combined effect of cultural industries in London.

It is estimated that London's art infrastructure accounts for 40% that of the UK. About 90% of the country's music business and 70% of the film and television activities are concentrated in London. The output of London's music industry reaches to more than 1.5 billion pounds, accounting for 50% that of the UK. Publishing industry in London gets an annual output up to 34 million pounds, accounting for almost 36% of British total output.

Now York

Although New York is not the capital of the United States, it has an obvious advantage in natural endowments and therefore combined effect in cultural industries as an internationally influential finance center and business center.

New York has a large number of personnel required for the development of cultural industries. On one hand unique New York attract worldwide talents, on the other hand New York has a group of world-renowned educational institutions continuously injecting fresh blood into the development of cultural industries, such as The Julliard School, Tisch School of the Arts at NYU, School of American Ballet etc.

Concerning capital, New York brings together a large number of investment banks, venture capital firms and other financiers in support of the development of cultural industry that other cities can not compared with. Financial institutions like Rockefeller Foundation, Ford Foundation, the U.S. Headquarter of Deutsche Bank, JP Morgan Chase and many other financial corporates are located in New York, all of these agencies are willing to invest to the cultural industries. In addition, company's charitable donations and individual donations to cultural industries in New York are another major source of supporting capital..

The natural endowments of talents, institutions and financial supports also make New York's creative cluster world-famous, including diverse art exhibition gallery in Soho, Berwick Street in Greenwich Village, Williamsburg and Madison Avenue. The operation of these clusters are not independent, because the nature of the culture industries demand individuals, businesses and industries in related fields to keep in touch, and these clusters in New York is essential to complete both inside and outside contacts.

Government Support

Cultural industries, as the most promising industry, are supported by governments.

London

As the world's first to propose the concept of creative ideas, Britain is the first nation use public policies to promote the development of cultural and creative industries. Back in the period when former British Prime Minister Margaret Thatcher in power , she once said there can be no government, but the country can not do without industrial design. In 1997, Tony Blair was elected British Prime Minister, who clearly suggested the cultural and creative industries to be a focal point of the British economic recovery and therefore set up a "Creative Industries Task Group".

In this context, the City of London decided to take creative industries as a core industry to operate, "Creative London"concept came into being. In 2003, London set up a committee dedicated to assess London's creative industries. It has brought together the leaders from fields of arts, business, higher education and other creative related industries to research and investigate the obstacles to the development of creative industries. In 2004, the London Development Agency created the "Creative London " coordination group, which is co-operated by the Government and civil society aiming at stimulating the vitality of the creative industries in London, helping resolve the investment, financing, real estate, human resources Development, and many other issues in this industry.

Tokyo

Tokyo's cultural industry also benefited greatly from the strong support of government. In the 1990s, with the collapse of the bubble economy, the Japanese government fully aware that cultural industries will help them transform into the most competitive cultural exporter in East Asia. Subsequently, the Japanese government adopted a large number of laws to promote the development of cultural industries, including "Revitalization of Arts and Culture Basic Law" (2001), "Copyright Management Act" (new edition of 2001), "Basic Law on Intellectual Property" (2002), "E-Japan priority plan" (2003), "Content industry promotion policy" (2004), etc.

Although these laws are not tailored specifically for Tokyo, Tokyo as Japan's capital and the political, economic and cultural center at the same time, naturally influenced by these effects. These laws and regulations help promote the cultural market in Tokyo to be systematic and standardized to maintain Tokyo's international competitiveness in cultural industries. Under the guidance of the national cultural strategy, Tokyo's cultural strategy is: to take culture as the source of city charm and vitality, to build an organic structure that combines the cultural resources with creative activities in Tokyo, to build Tokyo as a city full of creativeness.

Tokyo not only strengthens the laws concerning the construction of cultural facilities, but also develops construction standards of cultural facilities at different levels, provides basic cultural facilities according to population density, uses legal means to set basic standards for cultural facilities etc.

Experience for the cities aiming at building World Cities

For London, New York and Tokyo, the factors that boost the development of cultural industries can be summarized into two aspects-- the government and enterprises. Therefore, efforts to build a system that is led by government and business take initiative to actively participate in developing and supporting the system of cultural industries are key to the great development of cultural industries

The Government Leading the Development of the Cultural Industries

The government is the helmsman of economic activity and should play a leading role, starting from the big issues, and provide the direction and create the environment from the macro aspect for the development of cultural industries. This paper believes that government should take measures in the following aspects in order to boost the development of cultural industries:

Strengthening targeted policies and legislation

Government can support the development of cultural industries through a series of favorable and protective policies to eliminate administrative obstacles and barriers. Government can also provide a good policy environment through a series of incentives in credit, taxation, subsidies and other financial and administrative support.

Establishing specialized guiding agencies

Authoritative and specialized guiding agencies can help promote the implementation of policies and regulations, and can also undertake the work of planning, consultation, coordination, evaluation and other concrete work, so that the cultural system can play an integral function.

Broadening the financing channels for cultural industries

Financial support is an important source to enhance industrial competitiveness and government can directly inject funds for the enterprise through financial means; through monetary policies, government can create favorable conditions for the corporate finance; through the establishment of special funds for subsidies, government can support the industry in order to reduce the cost of corporate finance etc.; improving the financial system and broadening the sources of funds for industrial development.

Enterprises Supporting the Development of Cultural Industries

Culture-related enterprises are the main body in the cultural industries, which is an active factor, and their unique economic perspective and keen insight into the market of cultural industries is the key to healthy and rapid development of cultural industries. Therefore, from the enterprises' level, they should do the following work:

Building trade associations at all levels of the system, enterprises being the main participants, and improving the services and coordination of trade associations

The rights associations, industry organizations and other service organizations of cultural industries are playing an increasingly important role in promoting the development of cultural industries, protecting the rights of authors and propagators of works, safeguarding market order and develop creative team.

Sharing of resources

Streamlining and rationalizing the use of cultural industry resources is not easy, so the power of companies should be mobilized to support and coordinate the development of cultural industry in order to break the blockade between sectors and industries, to encourage and promote various forms of horizontal linkages. In this way, the cultural industries can be boosted as a whole instead of "everyone dealing with/caring about his own business".

Focusing on cultivating core competitiveness

Core competitiveness is the key to the survival of an enterprise. Therefore, the enterprises should strive to enhance creativity and to remain competitive; enterprises should design good marketing program to fully mobilize all forces to raise revenue and to cultivate and retain talent.

World Cities cannot be established overnight, and needs efforts from all aspects. Boosting the development of cultural industries in order to promote the natural formation of the great world cities is a feasible way that is worth learning.

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¿How are small retail businesses managed in Argentina and how can they compete effectively in the market?

Research paper
Alfredo E. Blousson
Instituto ESEADe, Buenos Aires, Argentina

1. Introduction

Analyze the scope and requirements for the management of the small traditional retail business so as to be compared and be able to compete with the modern chains of retail business.

Analyze management strategies and tools which can be adapted so as to be used by the small retail business to be more competitive.

Hypothesis

In the consumer goods business world, the retailer is generally defined as one of the 4”P”s of marketing: the “P” of place. In line with this, in Argentina, the owner of the traditional small retail sees its business much more as an intermediary channel in the goods distribution (a marketing tool), rather than as a business company that provides certain and defined services to customers. To be able to compete in the market, this small retail business requires the use and the adequacy of modern retail management tools and new retailing techniques for a better functioning and development of its competitive capacity.

Proposal

The main objective of this document is to **understand how the small retail business is managed in Argentina. A second objective is to analyze if some tools can be used to improve its competitiveness versus the modern national and international retail chains.** This document will analyze the situation of the small retail business and its possible adequacy to the new competitive environments. It will also analyze some tools used by the modern channels that can be adapted and then adopted by the small retailer so as to sustain the business in the market

Data and Research

- Interviews with owners of small traditional retail companies
- Chamber, Associations and specialized retail Consultants Publications
- Journals focused on retail and small business
- Text books

General Research Objectives

- Retail distribution channels and retail business evolution in Argentina
- Understand the small retail business within new competitive environment
- Revise some common management techniques used and adopted by modern retail companies
- Analyze management techniques used by small traditional retail business.

Topic's background

While world is changing rapidly and the managers of the companies are evolving and being trained to incorporate new management technologies, retailers are also evolving but perhaps not as fast. Global business is changing and so are distribution channels. Three of many factors can support this idea:

- Many retail companies have achieved income levels which often outweigh the values for most of its suppliers (international retailers such as Wal-Mart, Carrefour, Home Depot, and Argentine retailers such as Vital, The Limited, Musimundo, Farmacity⁴¹) (Deloitte, 2009).
- Some companies have integrated the business vertically combining manufacturing capacities and distribution activities (IKEA, Zara) (HBS, 2006) focusing the key strategy for the business in the ability to develop a distinctive retail business proposal.
- In USA 50% of retail and service revenue comes from franchised businesses reinforcing the need of some level of management expertise (Franchise statistics, 2009)

Based on the above mentioned development and considering all the information provided by specific researches and publications in international journals, it is clear that retailers need to integrate new management techniques to improve their competitive capacity. There are certain international publications (*The journal of retailing*, **The international journal of retail and Distribution management**, **International Review of Retail, Distribution and Consumer Research** and **The Journal of Retail and Consumer Services**) that mention the important evolution in terms of management techniques that big supermarket chains, big boxes, hypermarkets, international franchising companies have had in the recent years. But at the same time it is constantly mentioned the difficulties the small retailers face when trying to adopt all these new techniques to their business.

As a consequence it may be considered that:

- Management of consumer goods companies and retailers has many elements in common. They use technologies and management tools which in many cases may be very similar.
- There are specific retail strategies and defined support materials for training retail managers and this is mostly used by modern international supermarket chains and other international retail businesses.
- The small retail business has many difficulties to access to all this information and usually has limited finance resources and management capabilities. It is mostly using a limited number of tools and finds it difficult in order to compete with modern retailers.

This document is focused on the small traditional retail business in Argentina and although there has also been a very important level of change in the market, this local business can be characterized in the following terms:⁴²

- There are around 1.400.000 stores (INDEC, 2004) which include all type of retail activities.
- Most are family businesses.
- The business is run by owners who are immigrants of first, second or third generation.
- The management of the company is strongly focused on and aligned with the figure of the owner.
- This small retail business competes with Local, International and Big retail chains, Supermarket chains and International franchises, which are in general defined as the modern channel.
- The evolution of the big retail chains in Argentina is in many ways similar to that of the rest of the world (mainly in the case of international retailers which have stores in the Argentine market)

So as to have a frame for some of the concepts developed in this document it may necessary to review some of the terms and its definitions:

⁴¹ Most of the retailers mentioned in this research paper are exclusively national companies or LATAM companies.

⁴² Secondary research information

- Retail as a verb means “*to sell in small quantities directly to the ultimate consumer*” (Merriam Webster dictionary, 2009).
- Retail as a noun means “*where goods are sold to ultimate consumers, usually in small quantities (opposed to wholesale)*” (Dictionary.reference, 2010).
- A retailer is “*a distributor that sells goods and services to consumers, Business whose sales come primarily from the "retailing"* (Backer, 1998).
- Retail: retail market. The “retail” is an industry that includes companies which are specialized in the marketing of mass products or services to a large uniform number of customers. The English word retail is universally accepted. However the use of the term has evolved to include activities related to the wholesale trade, which in some way invalidates the definition of retail at the end of the supply chain. The reason for involving wholesalers and retailers in the same sector has been the great quantity of common problems and solutions to both sectors given the massive and diverse nature both their products and customers (Wikipedia, 2008).
- Retail store: a store for a retail transactions
- Retailer: business whose sales come primarily from retail transactions.
- Retailer: A business that sells goods and services to consumers. (Oxford Dictionary of Business).
- Retailing: Business that includes all activities involved in selling products or services to final consumers for personal use. Retailing may include subordinated services, such as delivery. Purchasers may be individuals or businesses. In commerce, a retailer buys goods or products in large quantities from manufacturers or importers, either directly or through wholesalers, and sells smaller quantities to the end-user. Manufacturing marketers see the process of retailing as a necessary part of their overall distribution strategy.
- Nonstore retailing: retail sales that takes place outside of retail. This includes sales to final consumers through direct mail, telephone, Internet, TV, door to door, vending machines, and other direct selling schemes. The nonstore retailing due to the evolution of communications, logistics distribution and the advance of Internet has developed perhaps even faster than marketing through traditional channels.
- Brick and mortar retail, retail business through retail "bricks"
- Click retail: retail business that develops virtual channels

Many international management analysts and academics consider the retail place as one of the 4 P's of Marketing. Kotler refers to retail as one of the marketing variables; place (Kotler and Keller, 2006). Other Spanish academics such as Santesmases also mention retail as the distribution marketing variable (Santesmases Mestre, 1999) Mass consumption general managers also refer to the retail simply as the “distribution channels”, as a way or a channel to reach consumers, as an intermediary.

Most retail companies, generally managed as a family business, have evolved and increased their volume turnover, and in most cases, have done so without incorporating many modern management techniques (D'Andrea et al, 2007).

The analysis about the evolution of the retail business management is an issue present in current managing literature (Business world Journal, 2007). There are at least two clearly defined levels of management:

- The large international corporations which are in a very advanced stage and have developed a good professional level.
- The traditional retail which tends to ignore or waive the vast majority of modern management principles and simply operate on its own learning curve and through day to day activities.

While it might seem that almost all the retail business takes place in retail outlets, as it was previously mentioned, an important and increasing part of the business transactions are made outside these outlets through what has been defined as the non store retailing.

This paper focuses exclusively on the business developed through the traditional “brick” retail or store retail. This does not invalidate or exclude the fact that many local retailers have websites and are also developing many additional sales through them.

For the purpose of this research we will take into account a classification for the retail channels that is widely accepted among companies:

- the modern channel, which includes large retail groups, big international and national retailers chains, corporations and international franchises
- the traditional channel: which includes the rest of the retail business generally defined as stores from neighborhood, local or proximity stores, mom and pops, small retail business, traditional retail stores?

There is a constant and gradual conversion of the distribution formats from counter sale to self-service. If we analyze LATAM data it may be interesting to consider the case of Chile which is the country with higher penetration of the self-service format. The food, cleaning products and cosmetics business has increased its importance from 49% of the ACV (All Commodity Value) to 67% in the period from 1994 to 2008 (ACNielsen, 2008). Still, more than 30% of the business is held by small traditional stores. There is a clear tendency to self-service which relies on the search for improved business productivity (Peris et al, 2006). Anyhow the audit data for LATAM can confirm that globally, and particularly in Argentina, there is certain stability in the number of traditional retail stores.

2. The context of change

We face a troubled world, a world in which yesterday rules may not be the rules for tomorrow, where the business definitions are constantly changing. Although we all accept that change is a constant, it is sometimes difficult to predict it in terms of speed and depth. By the end of the twentieth century a management specialist, David Nadler, in his book *Discontinuous Change* (1999) stated that "*Companies that will survive in the coming decades will be those able to respond quickly and effectively to changing environmental conditions. This highlights some skills, adaptability, resilience and responsibility. Successful companies will learn and act faster than their competitors and their leaders will be effective in how to anticipate and manage changes in large scales.*"

Within this context we see that trade patterns vary steadily creating the need to constantly review and adapt the business:

- Elimination of market entry barriers. Competition has become more intense and reached global standards in products and services.

Consequence: The local and imported products compete equally at the point of sale. Today it can be seen in the UK supermarket shelves one can see traditional French wines competing with new world wines from Chile, South Africa, Argentina and Australia. In Argentina the shelves of many retail stores are shared by national and imported whiskey brands.

- Global communications have increased. Through internet access customers are better informed, have more purchase options and seem to be more sophisticated

Consequence: the customer often knows more about the products than retail sellers themselves. Vendors of electronic products often have less information and technical details about the new products they sell than their own customers.

- The life cycles of products are shorter. Moreover, in many cases, there is a strong tendency to perceive certain products and services as very similar (they become commodities). Thus it becomes increasingly more difficult to achieve differentiation at the point of sale.

Consequence: the battle for shelf space and display placement increases on a daily basis. The constant introduction of new products becomes a real problem for the retailer. Many companies' product strategy tends to be: "me too", copying colors and sizes. There is a trend to standardize, a proliferation of commodities in all businesses where products, color codes and packages are becoming similar. The new product introduction presses the small traditional retailer for shelf space (Candy companies renew between 5 and 10% of its portfolio annually through the introduction of new products.)

Consequences: Finally this trend leads to an increased pressure on margins and prices where all members of the value chain are being affected

- Consumers are changing. In some cases brand infidelity is increasing. In others consumers seem to be more informed, better educated, more demanding, more selective. In general we see an increase in the consumer expectations.

Consequence: there are major changes in the shopping experience definition and retailers must understand how to "follow" these trends to "meet" the customer at the point of sale. The retailer must ask itself who is its customer today and who will be his customer tomorrow.

The small retailer business has to articulate the few mechanisms it has to keep the competitive capacity. Some reconvert themselves, others simply remain as they are and eventually some end up closing the business.

3. The retail world

The concept of retail business begins in the late eighteenth century with the opening of the first structured retailers: Matsuzakaya (Japan - 1768), Mappin & Web (UK - 1774), Lord & Taylor (USA - 1826).

Then for a long period that extends for more than a century countless retailers have started business, many of which have greatly developed up to now:

C & A (Netherlands - 1861), Woolworth (USA - 1879), El Corte Ingles (Spain - 1890), Galerie Lafayette (France - 1893), Nordstrom (USA - 1901), H & M (Sweden - 1947), Aldi (Germany - 1950), Carrefour (France - 1957), IKEA (Sweden - 1958), Target (USA - 1961), Walmart (USA - 1962), Gigante (Mexico - 1962), Metro (Germany - 1964), Toys R us (USA - 1968), The Gap (USA 1969), Barnes & Noble (USA - 1971), Circuit City (USA - 1971), Zara (Spain - 1975), Kmart (USA - 1977), Home Depot (USA - 1978), Starbucks (USA - 1984), Staples (USA - 1985)

If we analyze the total turnover of retail business we see that over the years it has been increasing its percentage related to GDP in most first world countries and also in developing countries. As an example it can be mentioned that the commercial distribution in Spain in 2003 accounted for 11.45% of GVA (Gross Value Added) (Peris et al, 2006, p38).

The new century shows the significant changes operated in retail business and the important development of global retailers. Proof of this is that out of the 100 worldwide companies with the highest turnover, at least 7 are retailers. Walmart with revenues of \$378.799 million dollars in 2007 became the company with highest income worldwide. There are a large group of retailers focused on different items that also exhibit significant income levels: Home Depot \$84,740 million dollars, Sears USD 50,703 million, Woolworths USD 34,443 million, Macy's USD 26,340 million, Mc Donald's USD 23,231 million, Staples USD 19,373 million, IKEA USD 14,000 million, The Gap (2004) USD 16,627 million, Starbucks (2004) USD 15,004 million. (CNNMoney, Fortune, 2008). Some of these retailers have reached and in many cases surpassed the annual income of many of their suppliers.

When analyzing the worldwide retail business we see that it not only consists of large food retailers. There is an enormous range of different type of retail stores focused on different specialties and with important business sizes. In USA's the top 100 retailers by sales exceed \$ 3 trillion annually.

The importance of retailing in today's world is undisputed because of:

- its role in the general business development
- the number of industrial sectors and different services involved
- the level of turnover and
- the amount of labor it employs.

But the need to adapt to the changing market is not new for retail. In *The Journal of Retailing* (1977, vol. 53, N°3), Berry and Wilson raised the issue of the need to refocus the retail business so as to adapt it to the changes that were taking place in the consumption at that time. Some of their conclusions are valid nearly four decades later:

1. The group of factors that have rise to this new context were related to:
 - demographic issues (family size, shoppers age)
 - economic issues (per capita consumption, relative values of different products and services)
 - value issues (quality of life versus quantity of life),
 - technological issues (electronic development) and
 - political issues (the new global maps).
2. New consumer-related concepts were derived from the above, which are worthwhile noting:
 - orientation to shopping "experience"
 - higher quality service requirement,

- emphasis on individuality,
 - focus on the total cost of the product or goods purchased.
3. Finally, a study, based on a research done by General Electric, posed a list of clear retail trends:
- a retail business more focused on a self-service scheme,
 - in some cases, the need for smaller stores and in others for larger ones,
 - increased automation and better warehouse management,
 - increased use of merchandising
 - relocation of common space to retail spaces,
 - improved product mix
 - emphasis on higher-margin lines,
 - more attention to secondary markets
 - more emphasis on positioning the business
 - refinement of the image
 - more targeted geographic markets

The concern about the significant change that was brewing in the consumer environment and that required an adjustment in retail was already present thirty years ago. By that time retailers had to face the challenge of adapting to meet the new competitive environment: "...and some would be the new winners, some would survive, some would disappear and this would finally lead to new developments." It is interesting to consider that although time has passed many of the issues are still valid and perhaps not solved yet.

4. *Keys to modern retail*

When analyzing the retail features it is necessary to stress what has been mentioned at the beginning of this work in the sense that although many years have passed since the stage of emergence of large retailer chains in the mid-60's there is a still wide gap between the modern channel management and the traditional small retail management

For modern retail business operation it is necessary to consider a number of features that are key to the business management. Consumers are changing their purchase requirements and have various demands and preferences as to what they require as "service" for each product they buy. There are many different management variables that can be considered and analyzed. One of them is assortment. The quantity and variety of assortment is essential when defining the retail strategy and it clearly differs from one business to another. Some retail outlets have a "focused" strategy with defined product lines (the product line is broad but there are limited number of lines) and are directed to a specific target. This type of business has shown a developing trend in response to new needs arising from the consumer, superstores being its counterpart, which offer an increasingly diverse line of products and which continues to expand and change over time (from food to hardware products).

The modern big retailer's chains have been constantly working in new marketing strategies to attract potential customers and retain current customers. Some have focused the strategy on providing a unique and distinctive assortment. Toy R Us, Staples, Circuit City, Office Depot, have been defined as "big boxes" and "category killers" focused specifically on the items being marketed.

Competition has been very intense in this context of modern big retailers' development. As an example it can be analyzed what happened to Toy "R" Us, a retail business focused on toys. The company, since its inception, quickly achieved leadership and surpassed in sales all medium and small local competitors that did not have the breadth of assortment, or the amount of merchandise, and competitive pricing offered by the new category killer. Years later, the development of new players and the progress of the discounters changed the competitive environment. At the beginning of this new century Walmart (a mass merchandiser) has beaten Toy "R" Us in its leadership position in the toy business in the United States and forced the company to review and redefine its business strategy to remain competitive in the market (Business Week, 4/17/2004). IKEA is another interesting example. In order to consolidate its position as a US furniture retailer, it had to add child care areas, restaurants and other services within their store area. The result was so good that its restaurant reached the # 15 position in the USA ranking (IKEA web page, 2008).

Part of this retail development can be summed up in one of the following trends (New Zealand Retail Organization, 2009):

Format, layout and structure of business

- hyper-competition among national and international chains
- Increased concentration of retail businesses. The largest are becoming even larger. As retail concentration is common to international and local retailers those large tend to be larger (Walmart, Cencosud)
- Business sector Internationalization. A strong global expansion of the big retailers who are settling a major presence in a greater number of countries (Carrefour, Tesco, IKEA, Home Depot)
- Some retailers have an important regional expansion through franchising (Hertz, Mc Donald's, Pizza Hut).
- Emergence of new formats, some already existing in other countries such as hard discounters (Aldi, Lidl, Dia)
- Accelerated life cycle of retail formats, which are quickly copied and no longer a novelty (Dr, Ahorro Pharmacies, Cafe Martinez, Café Havanna).
- Many formats as drugstores, pharmacies and supermarkets are expanding their assortment revamping their offer (Farmacity, Musimundo) and producing an overlap of formats.
- Decline of the conventional distribution formats and progressive conversion to self-service
- Polarity of retail sales: Specialized versus Massive. (Formats targeted at specific segments such as Pupilent Vos, Valente)
- Many businesses are adding new services such as cafeterias to improve the "atmosphere" and purchase "experience" (car dealers, supermarkets)
- New forms of retailing appear every day (Santander home banking, Mercado libre)
- The internet, a selling channel, a new distribution channel, used to inform, to sell, and to compete either as a supplement to the real business (virtual Disco) or an entirely virtual business (Amazon). Retail sales outside the store (sale online) are growing day by day.

Suppliers and brands portfolio

- Growing need for further cooperation between supplier - distributor so as to develop joint business.
- Constant switching the brand portfolio between premium, B-brands, priced brands and private labels.

Consumer changes

- Rising consumer infidelity.
- Slower consumption growth in some items.
- Supply exceeds demand in other items.
- Increased consumer expectations.
- Consumers are more educated, more demanding, more selective and better informed.
- Consumers have places to choose where to buy.

Technology incorporation

- Fast and deep changes in technology. There is an important technology development for retailing (laser reading, EDI, ECR). However, these rapid and profound changes are not easy to be incorporated throughout the retail so this creates strong competitive differences.

Some definitions required for the management of the retail

- Development of own brands, private labels.
- More sophisticated business positioning.
- Improved service – attention.
- Management professionalization. The new retail formats and the business globalization is requiring more professional management.
- Finding new products and items to offset decline in sales.

- Offset increased confusion about the role of each channel (channel blurring).
- Strategies to increase competition between retail business types.
- Retail sales outside the store (sale online).
- Respond to changes in the shopping experience definition for the target.
- Additional services such as cafeterias.

In addition to what was mentioned above it is necessary to note that within this framework of change, the head, owner or manager of the retail business, lives a different set of obsessions in the daily operation management that are related to the type and size of business and retail sector he competes in. They usually have to do with:

- daily cash flow and its relation to the sales level
- perishables and non perishables and expiration dates
- basic products stock levels so as to improve rotation
- assortment and how it is adapted to customers and seasonality
- merchandising management, signage and space optimization
- introduction of new products, which yes and which no
- mark-up policy, margins and profitability
- personal service, customer care and service quality
- ensure customer loyalty
- optimization of lay out
- negotiation of payment terms
- in store safety and theft or losses

Modern retailers have to constantly analyze context changes, the market in which they compete, the characteristics and performance of their competitors, who are the customers and prospects (Pearce, 2005). Modern retailers must analyze a number of business variables such as:

- The assortment, which can be varied (from food to clothing or appliances), large (the whole possible range of appliances) or deep (never out of stock) (Pearce, 2006)
- The service, which runs from pre-sale support to the presence in the aftermarket. Including advice and support during the sale offline, online and through the Internet. The service is in many cases (is) related to shopping experience (Pearce, 2004)
- The store, its layout, location, experiences the customer can experience during the purchase (Morrison, 2006).
- The price which cannot and must not be only a consequence of mark-up (considered as a result of the cost of goods purchased plus a required gross profit) but rather the consequence of a strategy of marketing mix variables. Turnover, profitability, margin contribution and competitive context are issues to consider for a pricing strategy (Pearce, 2005).
- Promotions, now a part of the integrated communications of any business must be carefully selected to suit the strategy and positioning of retail.

Many modern retailers face a very competitive reality affected by a global trend towards a much more varied assortment business. Food can be bought at a pharmacy; electronics at a video rental store, a coffee may be taken at a bookstore. This is the so-called “channel blurring” (ACNielsen, 2005). For some retailers this might seem an advantage in terms of an increase in sales offering a wider range of choices (extend the offer for the customer). Anyhow, there is a risk with this strategy as it may disposition the business in the medium term. The retail, like any other business, needs to develop a competitive advantage that distinguishes it clearly within the market and that can be sustained in time. The modern retail should achieve a distinctive competitive advantage based on a particular position which at the same time must be sufficiently dynamic to be sustained over time. The retail business should be perceived as unique and exclusive in its target segment

5. *The traditional retail business in Argentina*

The national and international retail business covers a huge range of companies of different sizes, structures, origins, manufacturing and service items. There are different ways to classify it. So as to have a clearer understanding of the framework for the traditional retail business, three segmentation alternatives have been considered:

1. Store size and variety of the assortment offered (Morrison, 2006):
 - Large distribution businesses called "superstores" that include: big supermarket chains and discount stores (with origin in USA as Walmart), hypermarkets (originally from France as Carrefour), the so-called "category killers", especially in a category such as sports, electronics, books, toys, household products (many local and some international as Staples and Home). Many of these stores could be defined as "big boxes" in reference to its size and format.
 - Specialty shops that focus on a particular line of products (Zara)
 - Department stores that contain different lines of product (Falabella)
 - Supermarkets specifically focused on a limited category of sectors such as food, cosmetics and cleaning (Disco)
 - Convenience stores, which have a limited range of products but all focused on impulse buying and open 7X24 (Gas Stations, Open25store)
 - Discount stores that offer lower-priced standard products such as hard discounters (EKI, Dia)
 - Franchising, covering a wide variety of all kinds of items of goods and services (McDonalds, Starbucks, Noble Repulgue)
 - Traditional retail business focused on a specialty and usually offer a "closeness" as a differential advantage (food stores, dry cleaners, paint stores, bars, dry goods)
 - Factory Outlets or factory seconds
2. Relationship between business and stores:
 - International retail chains (Walmart, Cencosud, Casino)
 - National Retail Chains (Coto, La Anónima)
 - Vertically integrated corporate business (car dealers, Nike shops, Arcor kiosks)
 - Voluntary association chains focused on the common purchase. Horizontal marketing systems that may become vertical to subordinate to (the) wholesalers or suppliers (Cordiez, Almacor)
 - Independent small business
3. Type of business organization:
 - Public with a professional management
 - Familiar but with an outsourced management
 - Familiar with operational involvement of the owner or close relatives

For this work the analysis is circumscribed to the traditional retail business defined as:

- Independent small retail business (it may include a small chain of 5 to 7 stores)
- Generally a specialty business (food, confectionary, clothing, paint store, hardware)
- Familiar organization with direct operational involvement of the owner or family member

So as to compare the traditional retail stores with the modern retail chains it may be convenient to consider a second segmentation level:

1. Retail stores belonging to national and international companies that are in a process of globalization and in most cases fall within the following groups mentioned above:
 - a. varied assortment discounters (similar to Walmart),
 - b. big boxes (similar to Sodimac)
 - c. focused retailers (similar to Zara)

These companies usually have experienced managers and usually have an internationally defined strategy focus and positioning. Their organizational structures are dynamic and there is a constant introduction of new professional positions to improve (the) competitiveness (**Peru Retail, 10/12/2008**). These retail businesses are framed as the modern trade channel and include:

- International chains, such as the case of Walmart, Carrefour, Casino, Office Net (Staples), Sodimac.

- National chains such as La Anónima, Coto, Musimundo, Farmacity, Megatone.
- Vertical integration Businesses as Zara

2. Retail stores belonging to national firms focused on specific sectors such as:

- food and drink (Winery, Frappe, Valenti)
- sports (Dexter Shop, Mega Sport)
- appliances (Frávega, Rodo, Megatone, Garbarino)
- bazaars (OKKO, Luvick, Beck and Martin).

These companies, in some cases have managers with good retail management experience. Although most have a position of leadership they have not achieved a sustained growth as in the case of international groups.

3. Retail stores belonging to a franchise:

- National companies (Legacy, Kevingston, Cheeky, Paint Center)
- International companies (Dia, Hertz, Kodak Express, McDonald's, Avis Rent a Car, Best, Futurekids, Wall Street Institute, Microtel Inn and Days Inn, 5 à Sec, Localiza Rent a Car)

This group of companies covers a very broad list of products and services. Its management has a professional background when it is an international franchise but has less support in the case of local franchises (85% of total franchise business in Argentina). This retail business concept is developing on an ongoing basis. In the 2000-2006 period, franchise turnover grew by more than +150% and 1.5% of GDP (AAF, 2006).

4. National independent retailers and small local groups belonging to a sole owner. These companies cover all existing retail items.

This group of companies makes up the traditional retail channel in comparison with most of the previously mentioned groups which integrate the modern retail channel. In these companies there is a minimum level of professionalism in the management areas. They are family businesses with very high presence of the owner in the daily business management. The persistence of the traditional channel is not a purely local phenomenon. A huge number of traditional retailers exist all over the world. In Spain there are more than 550,000 small retail businesses with less than 10 employees each. About 303,000 belong to self-employed owners (INE, 2005).

It is important to consider that when we talk about traditional retail business we refer, among others, to a varied and very extensive list of businesses: , food stores, drugstores, pharmacies, hardware stores, car dealerships, stands, paint stores, boutiques, fashion shops, flower shops, grocery stores, houses of lingerie, linen, household goods, office supplies, electronics stores, electricity, bars, restaurants.

This category of retailers defined as “traditional” has been characterized since its inception as neighborhood businesses, with low levels of professional management skills and an average ticket substantially lower than the chains. (Goldman 1974). Nowadays it is very present throughout the world and much more in developing countries. This presence is related to the development of the major retailers in each region and country.

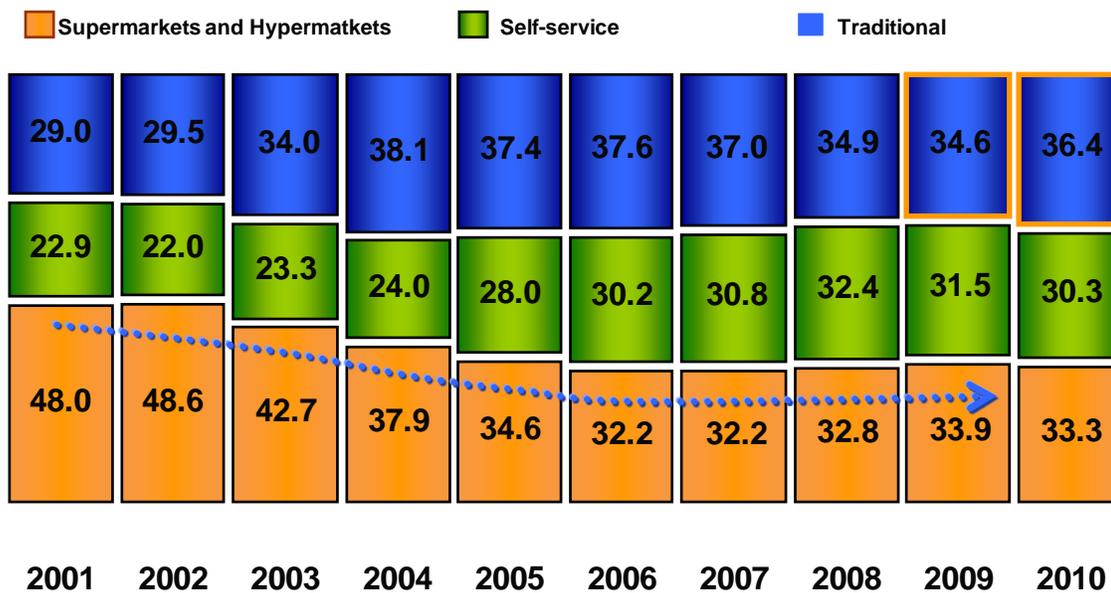
In Argentina, the traditional retail channel is large in size. In the food, beverage, cleaning and cosmetic sector the total number of retail stores is over 274,000. This includes kiosks, food stores, self-services, supermarkets, hypermarkets, pharmacies, drugstores, grocers and butchers. Only 2,348 (less than 1%) of these belong to national and international retailer chains (supermarkets and hypermarkets), the rest are small and medium stores that fall within the traditional retail concept. Hypermarkets and supermarkets chains accounted for about 11% of food sales in the 80s´, reaching more than 35% by the end of the 90s´. The rest of the retail stores - small supermarkets and traditional food stores- still account for 60% of nationwide sales (ACNielsen, 2006). This level of concentration in large retailers occurs in the food category, but not in other business sectors where the sales dispersion in different stores is greater as there are no large retail chains that dominate these areas.

UNIVERSE 2009 - TOTAL STORES - Source ACNielsen 2008					
Self Service Chains	Self Service Independent	Traditional	Kioscos	Miminarkets	Drugstores
2348	20065	127423	100997	3832	20080

UNIVERSE 2009 -%ACV - source ACNielsen 2008					
Self Service Chains	Self Service Independent	Traditional	Kioscos	Miminarkets	Drugstores
35	22	16	12	4	9

Although the modern distribution channel has increased its presence the traditional retail still means more than 30% ACV

Total food, cleaning and cosmetic consumption



source: Nielsen Retail Index - 81 categories July 2010
- Total Argentina

6. Research information

As a basis for the analysis, 30 in-depth interviews have been conducted with owners or managers of traditional retail stores located in the Buenos Aires Capital and in some cities of the interior and embrace the following areas: food and cleaning, textiles, sports, pharmacies, hardware stores, paint stores, bed and bath.

It is necessary to keep in mind that all the retail businesses selected had a very small personnel and general administration structure allocated to each store.

The findings here were most commonly expressed by all respondents.

Major findings common to all interviews

Company management

- All companies, being family-type, have a high participation of the owner in all decisions and in managing the day to day business. (We should bear in mind that with the exception of big international groups that have become public companies establishing a significant gap between current management and its original owners, the vast majority of retail companies are managed through a family structure).
- The management decisions of company are heavily concentrated in the figure of the owner (whether sole proprietorships or with a minimum number of employees).
- The vast majority of owners are immigrants of first or second generation.
- Owners who currently run the business, do it largely in an intuitive fashion and can be categorized as "entrepreneurs" or "self-made managers" i.e.: their knowledge comes from their own practice and experience based on a "do it right or do it wrong and re-do" approach. This is supported by the fact that almost none had previous experience with large retailers and academic training (undergraduate or graduate level)
- They all agree that mostly, the decision and startup of the business sector in which they operate, does not respond to a strategic and planned process but rather to a temporary situation or circumstance (tradition, heritage, forced by an external fortuitous situation).

Daily concern

- In all cases retailers deal with issues that are important for them in terms of the business management: daily cash flow, purchasing and vendors relationships, payments terms and costs control.
- One of the main concerns of all interviewed retailers, but that also is the obsession of most of them, is "the daily cash flow." Income and expenses are strongly related to customer credit, payment terms (cash, credit cards, credit) and vendor frequency payments who often are weekly scheduled and sometimes not scheduled at all. The typical payment schedule is on a daily basis during the whole week with no other criterion than the available funds and cash flow.

Organizational structure

- The inclusion of other direct or indirect members of the family in the day to day stores managing is closely related to the concerns mentioned in the previous point (cash flow), the operating hours (24 hours kiosks, pharmacies opened during the weekend) and the number of stores (one to around seven).
- Where there is no other member of the family that may be included in the management the situation appears to be much more complex. This becomes critical when the operating time is extended or there are several stores to be managed.
- Except in the case of employees or supervisors with many years of relationship and great confidence, there is a very low level of management delegation.
- Medium and small structures lack middle and high management. Usually there are not more than 1 or 2 levels of supervision between the owner and employees.
- The middle management has low education level (most have not even started undergraduate) and (has) little management training. They have been trained in the company or have had previous experience in other companies of similar size and structure.
- Most respondents expressed that it is very difficult to incorporate professionals with important management experience due to the expensive compensations required. Yet, the question remains unanswered as to whether the problem focuses on the managers' salaries values or the owners' resistance to include professionals with another culture that may cause many changes or internal strife.
- Some have had experiences incorporating consultants in various fields (accounting, systems, marketing). However, the process of transference and incorporation of knowledge is limited, slow and tends to disappear once coaching/training is discontinued. Usually there is only a minimum residual effect but in most cases it is not enough to produce cultural changes or changes in the management of the business.

The retail business, brands and marketing

- The vast majority of retail business respondents described themselves as intermediaries between the vendor products they sell and the end user or consumer.
- Every retail business has a name as identification, but when talking about brands they generally refer to those of the products they sell. While the store has a name (which may even be the surname of the owner) it is not generally developed as a brand. Very few have in mind the concept of the importance of their own brand and rarely mention the fact that they do something for the construction of the image and brand identity.
- They tend to see traditional retail as strongly focused in the marketing activities developed by their suppliers. Highly aligned with the marketing of the brands they just sell and are not focused on their own brand and retail marketing.

The assortment

- When analyzing the product mix it can be seen that the initial approach is to try to have the widest and most varied assortment possible so as to satisfy all the needs of every customer who enters the store.
- The variety, breadth and depth of assortment are issues that are handled informally, and in many cases even in an intuitive fashion. Usually they have no clear idea about the role and importance of the variety, breadth or depth of assortment within the business. The assortment strategy definition is not a planned process. Generally, it is the result of years of personal experience combined with the attempt to adapt it to what customers ask and always based on their own perceptions about what is "appropriate" for their business.
- The assortment tends to be very broad when it comes to items such as hardware, paint shop, sports, bed and bath, food and cleaning products. The trend is to have as many brands, sizes and displays as possible for each item.
- The assortment is naturally limited for exclusive textile retailers who simply offer the available supply of the exclusive brands they sell.
- In retail businesses as drugstores and pharmacies that in recent years have included food and basic impulse products to increase turnover, the assortment tends to be more varied. This seems to be a reaction to competitive context, rather than a strategic redefinition of the business.

Service

- When talking about service, they seem to try to be as "helpful" as possible. Anyhow this does not mean giving or having the level of service required by the customer. Once again the "quality of service" delivered is what they perceive is needed without any research support.
- In the personal treat there tends to be overabundant service delivery without having clear what they get in return. In general, interviewed retailers do not question themselves about the quality or quantity of service they provide.
- Although they believe that their service is good, respondents fail to perceive the nature of the service as a competitive differentiator except for the specific and timely personalized attention they do in some cases.
- They find it very difficult to analyze a cost-benefit equation in terms of new services incorporation as they cannot and do not know how to dimension it.

Localization and lay out

- Localization, in most cases, is "where they are physically located today" or "where they were always located" and not necessarily "to be located in the most convenient location."
- None of the interviewees was considering the chance of moving the store to a better location although they feel they need to do so.
- Some respondents don't seem to question the need for store layout redesign. In general, these retailers don't understand clearly how to evaluate the issue of internal store circulation. Everyone wants to have more space merely to expose more things and have a more comfortable store circulation.

- Some respondents are concerned about redesigning the store internally for logistics purposes so as to achieve a more adequate and modern layout. But usually do not have the tools to consider and discuss the redesign.
- On the other hand they have a clear idea that more square meters and better localization mean(s) more rental fees or higher investment and have no way to quantify the cost / benefit of this spending.
- None of the interviewees is concerned about making (has the concern about the how to create) concrete changes in the internal design of the store in order to create a space that allows them to deliver a "better purchase experience".

Prices and costs

- The relationship between the price at which they purchase - i.e., the cost of goods - and the retail price they sell it for, in some cases is defined by the mark-up they apply and in others as a sales margin.
- The final sale price in most cases is aligned with the value suggested by the manufacturer. However, when defining the retail price, all the interviewees mention that they take into account a mark-up level or a minimum margin as their profit for each item sold. (that it is what they aim to earn for each item they sell.)
- Within every business there are different levels of mark-up or margins for each product line. In minor cases they apply different mark-up and margins between brands of the same product line.
- The level of mark-up or margin is related to the type of product considering whether it is perishable or nonperishable, of low or high turnover, premium or price brands, etc. and the relationship with the vendor.
- The turnover level for some products versus others is important and is discussed in the interviews when talking about business. However, in general, it does not seem to have a high correlation with the margins that are determined for the different products.
- In some cases, competitors' retailer publications are considered as a reference for the retail price. This allows them to have a dimension of the value range within which they can move prices. In some cases prices are simply compared with neighborhood stores but no actions are taken.

Promotions and communications

- It is rare to talk about promotional activities specifically developed by the retailer to generate traffic or ticket in his store. In some cases they have no tools to do so and others simply cannot think of such activities because of high costs. In most cases they do not perceive the difference between specific promotional activities for generating traffic and those that enhance the ticket.
- The only promotions considered are those of suppliers that in some cases include retailers.
- Communication is limited to the placement of merchandising materials in the store, sign posts in windows or in the street. There is no criterion to analyze or assess the relationship between investment and return in relation to communication.

Information systems, stocks, control

- Those who incorporated digital technology have done so mainly to count on automated billing. In many cases they have a basic electronically accounting support.
- In general there is not track on inventories status in an orderly manner, digitalized or computerized. Stocks are estimated in relation to what they "see" in the store and in the warehouse (few traditional retailers have a separate warehouse and they generally stock merchandise inside the store). Stock management in warehouses is still poorer.
- The use of Internet technology is now limited to having a web site (passive) at some time.

The strategic framework. Management, strategy and structure

When deepening on how business was managed and strategy was developed some concepts are reaffirmed by all:

- In all cases sales are almost tracked daily and analyzed and compared versus a monthly sales objective.

- The sales objective is determined in order to cover the monthly fixed operating costs and obtain a fixed minimum profit. The retail price is based on the application of a mark-up or an average margin for all products or services.
- Stock levels, income statement situation and cash flow are the three main issues that seem to be present, "in mind", but are not generally formalized in any spreadsheet. From this point of view they seem to use internal and personal codes that allow them to get an insight on the stock situation (high, normal or low), the advance of the monthly sales (this is a good, bad or normal month) and the evolution of (the) cash (sufficient or very adjusted).
- When attempting to discuss further issues such as who is the target customer, how many different profiles exist, they recognize with effort one or two segments but no more. Either way there is little or nothing they do to address each group in a differentiated way.
- They do not conduct any type of research related to clients and prospects. They know them personally and they tend to treat everyone equally or the best they can.
- The appearance of new channels, the conversion of others and the expansion in the assortment through the introduction of a greater variety of products and services even those never marketed before is also blurring the boundaries and role definition of traditional distribution channels. This results in a feeling the sense that all retailers move within a Round Robin format. When analyzing who the main competence is, all retailers in the same category and neighborhood seem to be potential competitors. It is impossible to determine the maximum/minimum distance with another retailer of the same type of business so as to consider it a direct competitor.
- As mentioned above, there is no clear distinction against who they compete and why. Everyone is a competitor and the same competitive tools are applied for everyone. There is no strategic analysis on how to deal with each of the competitors.
- When the concepts of competitive advantage and business positioning mentioned, there is no formal response. In most cases they do not think they have chance to build a competitive advantage with the tools they have currently in place. They simply accept that they "exist" in the market, competing as they can and with what they can without any strategic planning process whatsoever.
- Very few exceptions can be mentioned in terms of the existence of a business strategy applied to daily retail activities.
- Anyway, in a deeper insight on how they conduct their business, it is possible to perceive an underlying strategic reasoning in their actions. A strategic action, possibly intuitive, results of experience but in many cases that seems to make sense and be consistent. While they are using many of the techniques and retail marketing variables in a rudimentary way they don't seem to be very confused in terms of how to continue in the future.
- Finally, all the interviewers agree on the need to incorporate modern concepts of retail management to enable them to be more competitive in their business and to develop a sustained process of growth and development. They have the need, although they do not clearly see the opportunity or do not know how to do it.

In short we may say that:

- Managers or owners of these retail businesses generally tend to visualize themselves as middlemen in the distribution chain rather than as owners of a company that applies the same management tools used by large manufacturing or mass consumption firms.
- In many cases, all the modern techniques of retail management are not taken into account, mainly because they lack the knowledge, and in all cases because they feel they lack the resources.
- Without any doubt it is necessary that the traditional retailers begin to adapt and implement modern retail management tools in order to upgrade their performance and achieve the maximum development of their full competitive capacity.
- Many of these retail companies have experienced a significant growth in recent years, thus creating an opportunity for a greater business development starting from a major advance in their professionalization. This

implies the need to work in different areas such as administration, technology, human resources management and business management.

7. Opportunities for the traditional retail business

The immediate consequence of the changes mentioned in paragraphs 2 and 4 is a further increase in competitiveness between retailers and at the same time the establishment of a new contextual framework between them. Today, an electric appliances retailer competes with Jumbo supermarket chain, a kiosk competes with Farmacity, and a linen shop competes with large retailers like Easy. It is worth noting that:

- Environment is changing at an unprecedented pace forcing us to rethink the marketing channels in order to be efficient and effective.
- Pressure on higher income is in turn, exerting pressure on business and product mix and also on the different marketing variables for each retailer.
- Shelf productivity should be the first in importance among all store activities.
- Consumers make an election in each purchase and therefore the framework for the competitive activities must be revised.
- Consumers are becoming less and less faithful, they look for an alternative that maximizes the perceived value. So the retailer needs to understand the factors that are relevant for success
- It is necessary to make alliances between vendor / distributor in order to improve the exchange level.
- The retailer's brand represents its values and must fight to maintain its competitive advantage.
- In an increasingly complex world it is necessary to constantly rethink the format of the distribution channel in order to be efficient and effective.
- It is necessary to understand the relevant factors for retailer's success as differences between distribution channels tend to disappear
- The design of distribution channels is based on sales and marketing tools but still requires a large percentage of experience, intuition and common sense.

In view of the above, some retailers are changing and therefore the following questions could be asked:

- What can small traditional retailers do to maintain their competitiveness?
- What are the most suitable commercial tools? Which are useful for generating traffic in the business? and
- What can be done to increase the value of the ticket into the business?

There is no doubt that the traditional retail business is capable of attempting a process of change by incorporating new management experiences and techniques similar to those used by larger retailers and relevant to their business model. To this end retailer must:

- understand the skills and competencies necessary for the proper management of its retail business,
- incorporate knowledge and implement strategies to improve the performance of retail business,
- increase productivity and efficiency in the use of the available resources (human and material),
- use tools to maximize the economic performance of a store.

8. Retail business guidelines that management has to take into account

Every traditional retail business is able to start and develop different commercial activities using the four marketing variables which - although basic - are still very current and those are the 4p's (Kotler and Keller, 2006). To be successful retail should aim to achieve a differentiated dynamic and recognized positioning that allows it to build a sustainable competitive advantage over time. This strategic focus can be achieved using the business resources and applying different retail management models. For the purpose of this working paper the model used is the "The eight ways to win at retail" model developed by Douglas Tigert (1995).

Retail management implies the need to define a business strategy, to adapt the structure and set the general minimum guidelines necessary for the proper functioning of each of the areas that are defined as key to retail

development. Usually these requirements are very similar and do not vary greatly from those used by the manufacturing and service companies and cover the following areas: administration, systems, finance, logistics, human resources, purchasing, sales.

From the business management standpoint it also seems very necessary to at least incorporate information systems that allow administration, accounting, financial flows, inventory control monitoring.

Logistics is also a central theme in retail management because of the importance of inventories in business management, procurement, replenishment, shortages and obsolete products.

The human resource management is perhaps the most important issue to consider, based on the premise that retailing is "sales service" and sale is primarily "service." Philip Kotler defined the 4 P's of services' marketing including and stressing the importance of the P of "people". People play an important role in retail services.

Considering the retail model approach mentioned in order to achieve competitive advantage the retail must consider:

- the four marketing variables (store and location, product selection, price and value, promotion and communication),
- the "P" of service (people),
- information systems (the incorporation of technology),
- logistics (movement of goods and inventory management) and
- relationship with vendors. (D'Andrea et al, 2004).

Once the positioning and the strategic factors for sustaining the competitive advantage are defined, there are two main concepts in the retail operation that involve different techniques and tactical marketing actions to mobilize the business:

- generate traffic towards the business
- increase ticket value within the business

Other considerations necessary for the management of the business arise such as:

- stock management so as to avoid "out of stocks" or the existence of large surpluses that are usually a costly burden on many businesses,
- logistics resupply closely linked to what was mentioned above. Yet, also in the case of local chains it can mean a significant management cost
- developing a clear competitive advantage in the area, zone or neighborhood where located or for the target segment addressed in order to achieve a differential factor that maximizes the equation "Value = Benefit - Cost"
- good brand management, making a distinction between the role of the retailer's brand (store or chain), the vendors' brand policy they handle and the own private labels policy if any
- pricing, discounts, price promotions, and offers both in expansive and recessive contexts
- the product selection, variety, breadth and depth of supply
- related services and how customer perceives its value
- external store design and interior lay out, lighting, spaces, signage
- people, staff, the moments of contact and customer relationship
- use of technology and in particular the role of the Internet as a communication factor.

The list of topics is very broad and extensive, but the important thing to be considered by the small traditional retailer is the opportunity to improve the business by incorporating modern management tools. The issues seem to be many and perhaps too complex to initiate and put them up all together at the same time. For this reason it is necessary in the first place to accept the need and opportunity to initiate a structural and cultural **change (adapt the mental model to run a business in a more modern approach)**. Start by adopting some of the issues mentioned and incorporating some of the tools.

Finally it must be considered that an effective change may bring about a greater competitiveness in this new context and in the future.

9. Recommendations for the traditional channel

Some key points for development and management of traditional retail business:

- a) Develop a strategic road
- b) Resolve strategic dilemmas
- c) Business Units for the Strategy
- d) Marketing mix
- e) Human Resources and Communications
- f) Supply and distribution logistics
- g) Management and administrative and financial control

a) Develop a strategic road.

Retail companies compete through their products and/or services to provide the best possible value to the consumers they choose to attend (key target segments). The strategy is the process that retailers must address to build or strengthen capabilities so as to deliver better value to their customers than competition. The question is: ¿How to develop strategies, create significant advantages and offer better value to customers in a global, recessive? or hypercompetitive environment? Building a competitive advantage is a process that relies on the correct variables' formulation and organizational structure adjustment. Involves the entire organization (no matter how small it is). It must be linked to the retailer's culture and must be a procedure to generate organization's consensus on the vision of the future, its goals and processes needed for improvement. It should be an inclusive process of the various functional strategy components. It starts by finding the set of values to be delivered to market that should be superior than competitor's. It requires a realistic understanding of the company and the market, the customer needs, to know the competitors activities and the context in which the business is developed. This definition of the retail value generated for the market rests on the understanding of all its components. The higher the knowledge, the easier it is for the trade to define a leading edge and, consequently, receive and convey within the business the necessary adjustments to remain effective against market changes. It requires a realistic environment. In this changing environment we must not forget that the strategy should be an evolutionary process and must be redefined and adapted on an ongoing basis in order to meet the objectives (in a changing environment)

b) Solve the dilemmas of the strategic retail positioning.

1. Have effective strategy implementation versus growth, given that the higher the headcount, the harder it is to keep the vision and corporate culture, and quality standards. Key factors are good selection, training, guidance and education of employees and mostly good and efficient internal communication. When mentioned the keys in service marketing it was stressed the importance of people. The growth of retail business is often tied to expansion through increasing the number of stores. Stores require human resources and good human resources are not something that is easy to replicate as would be the simple case of expanding production through the addition of a new manufacturing line.
2. Provide good service rather than applying a low price policy, given that price and value are not the same. Value is the experience of using the service while the price is the cost. Costs are lowered by improving service, not cutting it down. Savings should take in consideration customer experience and not giving up quality. Service productivity is key in retail. This stresses the need and the importance of another variable of the service marketing that is the P of "processes". Adjustment of all processes is critical to improve retail productivity.
3. Keep the entrepreneurial spirit that was core to mobilize the retail project. Consider the problems of growth: size, complexity, communication. It is necessary to maintain the initial inspiration constantly adjusting (whenever necessary) the business course. The retail company, all of the familiar businesses regards the growth process as a sometimes difficult dilemma to solve.

c) The business as whole or as integrated units with specific targets.

It may be a bit premature to incorporate terms as Category Management for this type of traditional retailers, but the concepts underlying the issue are valid in all types of business. Category Management is a totally different way of managing a retail business. Instead of handling it in a comprehensive manner, it is analyzed in groups of products (categories) that are reviewed as if they were strategic business units. A food store can split the business between fresh and non perishable products, dry products and drinks. A pharmacy may divide its business between prescription products, OTC and cosmetics. A hardware store can separate plumbing, electrical and masonry. This

requires a constant review of clients, assortment, business layout and promotional offers to optimize the management of the business.

d) Marketing mix

Marketers use a variety of tools to achieve the goals they have set through a combination or mixture (mix) of them. McCarthy in the mid-twentieth century introduced the theme and named it "the theory of the Four Ps", as it uses four variables, whose initials in English start with "p". These variables are critical for the retail business strategy:

- Product → Assortment strategy, style, fashion, service
- Place → Localization, layout, store size
- Promotion → Advertising, merchandising
- Price → Value, quality level

There are also other marketing variables such as: segmentation, differentiation, research and positioning that must be taken in consideration for the retail business management. The success of a retail business is given by the knowledge and analysis of the various marketing elements that influence the activity, and through the implementation of the marketing plan so as to achieve the objectives (Muñoz, 2008). The retail business must combine the marketing variables so as to attain a differentiated positioning, a competitive advantage either by way of delivering greater value or lower price.

e) Human Resources and Communications

People (human resource) are a key factor for the retailer. People become crucial and can make the difference in the case of retail business (a service). In services there are also 4p's:

- Physical environment → The environment, location, signage around service delivery
- Process → The process, activities flow, standardization mechanisms
- Presentation → Presentation, sale and production as a whole
- People → People, human resources, employees and customers

People, employees, are no doubt a key to the success of a retail business. Some considerations should be pointed out in this case:

1. Develop a culture focused on creating superior customer value and to guide the strategy and daily execution. All employees should understand and share the customer experience. Managing decisions should take into account this information.
2. Be innovative, but based on customer's feedback and by capturing their unfulfilled desires.
3. Having a small scale concept so as to handle each interaction with the customer as unique. Trying to manage and solve issues immediately.
4. Include all the people (internal customers) in the company, allowing them to suggest, agreeing on standards and encouraging and rewarding participation.

If people are considered important in the retail business, the internal communication becomes a critical factor. In a retail business the main route for growth comes from opening new stores. This brings the need for more employees and to ensure optimal communication about culture and processes. During these periods communication processes play a crucial role, since major growth crisis are a result of flaws in these processes. A company can buy a machine and double the production level but cannot be sure about adding headcount (people) and maintaining the same service quality level.

f) Logistics

Strongly affects the outcome of any business. To be competitive a retail business must have a very good control of the logistics process. Supply chain management can review and analyze the whole process of provision of any retail business, from the goods' entry to its replacement on the shelf. The competitiveness of the retail business is not a result of does not happen because) of having a great stock level in the warehouse but by having the just and necessary amount of merchandise. A surplus implies additional costs and a shortage means lost sales. Loading and unloading of goods, shelves' replacement, use of space in warehouses, are issues of great importance. Inventory control, goods' rotation, frozen stocks strongly affect the outcome of the retail business.

g) Management control

Daily management control beyond financial results and cash-flow status becomes a key factor for the health of the retail business. Traditional sales, margins and expenses indicators can be replaced by other more sophisticated but this does not mean a better reading of results. Performance can be analyzed with different indicators according to the type of business. On the basis of a more elaborated information that can be compared across different businesses and standard indicators, the retail can review the contribution per square meter, per inventory levels, per headcount, (the) turnover, return on assets and the contribution margin, operating margin and final contribution.

Steps to develop a retail strategy:

- Create a distinctive concept and if possible a challenging retail business, using the marketing variables and the concepts described in the previous paragraphs in order to ensure a proposal that allows a clear differentiation from competition.
- Develop a proposal that one way or another includes the customer. Here it is necessary to identify, classify and have a good understanding of the client needs to satisfy them and gain their trust.
- In the customer management it must be taken into account its' life cycle, experiences and shopping time.
- Manage the appropriate assortment for the business in terms of variety, breadth and depth. Select, frame and handle it with business unit concepts.
- Have internal and external communication management to suit each client. Consolidate the culture internally and generate the traffic and ticket required for business.
- Professionalize management. Have speed but at the same time the direction, to reinvent the business every day, to identify the critical and strategic solutions to plan and implement a competitive intelligence.
- **Design and implement an effective loyalty scheme**

10. Conclusion

The traditional small retail business can move forward in a process of professionalization so as to achieve a more competitive situation. Suitability and proper application of retail management and retail marketing tools may facilitate the creation of an action plan. Not only to successfully manage different customer experiences with the right mix for the business and segment, but also to achieve a position and a differentiation that can be perceived by customers and determine their loyalty and fidelity.

After defining and implementing the retail management strategy a key question should be present every day: ¿What else can I do every day to improve business management?

As we have seen so far, there is a considerable gap between the features and concepts that revolve around the modern retail management and direction of traditional retailing.

To improve its competitiveness against the advance of modern channel, the traditional retailer will need to go deeper into each of the retail management tools.

It will be necessary to study and analyze the possible paths to be followed in order to facilitate the gradual integration of the concepts of retail management in the traditional small retail business.

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Online FX Simulations for International Business Survey Courses

Research-in-Progress

Jeremy DalleTezze⁴³

Grove City College

Introduction

This article evaluates the appropriateness and construction of online simulations for learning Foreign Exchange (FX) rate material in International Business (IB) survey courses. The need for a teaching improvement is demonstrated by assessing student performance on assignments and perceptions via surveys. We then review the literature on international business simulations, with an emphasis on digital offerings. We propose that short, focused, and user-friendly online simulations are needed but are currently in short supply. We discuss the construction and evaluate the performance of one such simulation.

The paper proceeds as follows. First, we assess the teaching and learning challenges associated with FX rates. For most undergraduate IB survey courses, the time allotted for this topic is between one and two weeks. Furthermore, the quantitative nature of FX rates vastly contrasts the other more qualitative topics of the course. Using student surveys and class performance, we measure the degree of this challenge as well as student sentiment towards the topic. For a variety of anxiety and confidence measures associated with math and FX, at least 87% of our students believe that there is *no* need for concern. Performance on FX problems reveals that this may be a *false sense of confidence*, with only 77% (56%) of students answering simple (intermediate) questions correctly.

Second, we briefly review the literature on the availability and effectiveness of IB simulations. Simulations are used extensively in business and business education. Recent improvements in technology have increased both the quantity and quality of such simulations. We argue that certain simulations have the ability address some of the FX challenges discussed in this paper.

Third, we discuss our proposed simulation for FX material in IB survey courses. By offering short focused simulations in a user-friendly environment, we provide students the opportunity to concentrate on the FX subject matter. We detail how one online model⁴⁴ was constructed from a simple Excel file using Forio.com. We summarize feedback about the model from students and present evidence on its effectiveness. The majority of students indicated that the model needed no improvement regarding content, complexity, user-friendliness, or aesthetics. A lack of clear instructions was cited as a weakness but can easily be remedied. Stronger students understood the topic of the simulation, answering a comprehensive question with a score over 250% higher than the weaker students' average score⁴⁵.

Lastly, we conclude with a brief summary of suggestions for future studies and implications for readers. We predict that this research will have an impact on business professors, potentially influencing them to turn to online simulations more often, and perhaps experiment with creating their own focused simulations.

⁴³ Special thanks are made to students Gregory Bonzo and Leah Vough who helped identify appropriate readings and technologies for this paper.

⁴⁴ The simulation is found here: <http://forio.com/simulate/jjdallezze/fxpassthrough/run/>.

⁴⁵ Faria and Wellington (2005) argue that when strong students outperform weak students in assignments, it validates the exercise. The stronger/weaker classification was made before students completed the simulation.

IB Survey Classes

Many undergraduate business programs offer either an introductory or intermediate level international business course to facilitate the internationalization of their curriculum. These courses survey several important features of the global business environment, such as political economic forces, cultural differences, international and national institutions, and the strategic business implications of such topics. Based on conversations with IB faculty at several international business conferences and FDIB Globalization seminars, a major challenge with such courses is achieving appropriate depth while covering the breadth of these topics.

Based on a sample of 29 international business syllabi from GlobalEdge.MSU.edu, most professors include foreign exchange rate material in such classes. As shown in Table 1, a majority of syllabi include FX topics explicitly in the outline. For the most complete syllabi where both outlines and outcomes are listed, 58% contain FX topics in course outcomes and 100% contain FX topics in the course outline. Most of these syllabi indicate that the basics of FX and monetary systems are covered, while some courses go into considerable depth with international financial management. Even in the courses where FX is covered in only a few days, students are exposed to quantitative calculations and analytical concepts quite different from the rest of the class topics, such as cultural differences.

Description of syllabus	Number of syllabi	Percent containing FX in outcomes**	Percent that contain FX in outline
All syllabi	29	38%	66%
Syllabi with outcomes	26	42%	73%
Syllabi with outlines	21	52%	90%
Syllabi with outcomes and outlines	19	58%	100%

*GlobalEdge.MSU.edu provides resources for international business education. These undergraduate syllabi were downloaded from <http://globoledge.msu.edu/academy/course-syllabi/> on 1/10/2011.

**Any mention of FX or international monetary systems was included in this analysis.

Table 2 offers a quick review of the textbooks commonly used in IB survey courses. Regarding intended audience and rigor, the text books range from introductory undergraduate to advanced undergraduate/graduate courses and from 424 to 793 pages of total content. The longer books offer more applications and chapters focusing on specific business practices. Books offering more in depth in FX topics cover international accounting laws and specific financial management implications and tactics. Every book covers the basics of FX transactions and theoretical concepts such as the Law of One Price, Purchasing Power Parity, and the International Fisher Effect. Lastly, most of the books have less than 13% of content devoted to FX related topics. Since this content covers institutional and historic concepts, the amount of coverage for the quantitative and analytical topics is often less than 7%. Thus, professors must find a way to cover these topics in a short amount of time.

Author (Year)	Title	FX pages* (% of total)	Amazon Rank**
Hill (2011)	Global Business Today, 7/E	68 (12.3%)	1
Wild et al. (2012)	International Business: The Challenges of Globalization, 6/E	52 (12.3%)	3
Hill (2007)	International Business: Competing in the Global Marketplace, 6/E	119 (16.6%)	8
Ball et al. (2008)	International Business: The Challenge of Global Competition, 11/E	42 (7.1%)	9

Cavusgil et al. (2012)	International Business: The New Realities, 2/E	55 (9.7%)	18
Daniels et al. (2011)	International Business: Environments and Operations	149 (18.7%)	36
Griffin et al. (2010)	International Business 6/E	96 (16.4%)	81

*Total content is the number of pages before the end of the final chapter and the FX pages refer to all pages in FX related chapters which include international monetary systems.

**Rankings are given by Amazon.com in the Bestsellers>International Business & Investing category on 1/13/2011 at 12:26pm. The exact ranks change quite often on Amazon.com; however, the ordinal ranking of these 7 texts were identical over a 7 day period in January.

Having articulated the perspective of the professor, we now offer insights from the student's perspective. Two sections of an intermediate undergraduate IB course were surveyed in October, 2010 (the survey is provided in the appendix) from a liberal arts college in Western Pennsylvania. This sample included 54 students, 15% of which were sophomores and the remaining 85% were either juniors or seniors. The course has two prerequisites, an introductory marketing class and an introductory management course.

The anonymous survey was administered at the end of class on the due date of the first FX reading assignment (Desai 2007). Sixty one percent of the students reportedly read the assignment, while the entire sample was present in class for the first FX lecture. The survey gauges students' perceptions about the FX content and their abilities, as well as their actual performance on basic and intermediate FX problems. Table 3 reports summary statistics on the perceptions' data while Table 4 summarizes the performance data.

All of the questions in Table 3 are on a 5 scaled response, ranging from "strongly disagree" (1) to "strongly agree" (5). Some of the questions have been reversed-coded so that a high value always indicates a perceived strength or lack of concern on behalf of the student.⁴⁶ The data is rather convincing and reveals a very confident set of students. The lowest average value is 3.7 and at least 87% of students are either neutral or confident in their skills to perform mathematics and solve FX related problems. But, are these perceptions a result of false confidence?

Question	Average**	Standard Deviation	Percent ≥ 3
1. Comfortable with applying mathematics in business	4.09	0.92	91%
2. Confident about my performance in FX section	3.81	1.07	87%
3. My mathematical reasoning is not low	4.00	1.05	91%
4. FX problems in class were simple	4.30	0.63	100%
5. I do not lack confidence with numbers	4.02	1.02	89%
6. appreciation/depreciation is not confusing	3.70	1.00	87%
7. have enjoyed mathematics	3.80	1.11	87%
8. direct/indirect distinction is not confusing	3.70	0.86	87%
9. working with fractions is not difficult	4.11	0.88	93%
10. calculating cross FX rates is not difficult	3.80	0.86	93%

*See Appendix 1 for the full survey questions. This survey was administered to 54 undergraduate students in October, 2010.

**Each question is on a scale of 1 ("strongly disagree") to 5 ("strongly agree").

Table 4 displays the results of three FX problems at the end of the survey. Before interpreting the results, it is important to note how that particular class is taught. The professor reviews the home work questions from the

⁴⁶ Specifically, questions numbered 2, 3, and 5 through 10 have been reverse-coded to display the results in Table 3.

reading, performs similar problems in class, and requires students to actively solve similar problems in class (individually and in small groups). On that particular day, the class reviewed questions that were essentially identical to questions #1 and #2 in Table 4, and performed all of the necessary steps and calculations for question #3. However, students' ability to solve these questions was less than stellar. With the exception of the appreciation/depreciation question, the class performed poorly on these basic/intermediate FX problems.

Question	Percent Correct
1. Consider the foreign exchange table handout. How many dollars can you purchase with 100 British pounds?	64%
2. Assume that you own a company in India. The quote for the US dollar is 44.665INR per USD (INR stands for Indian Rupees). If one year from now the rate changes to 50 INR per USD, you conclude that a. the Rupee appreciated against the dollar b. the Rupee depreciated against the dollar	91%
3. As of today, the exchange rate between the US dollar and Chinese Yuan is 6.6734Yuan per USD. Based on this information, you agree to a salary of 15,000Yuan to teach English in China next summer. If the rate changes to 6.5 Yuan per USD just before the summer, what is the net change in your income in terms of US dollars? Enter in the dollar amount rounded to decimals. Indicate if it is a negative or positive amount.	56%

*These three questions were answered by the same 54 students surveyed in Table 3.

The results presented in Tables 3 and 4 demonstrate that students are challenged by FX material, even though they may be unaware of these challenges. The active learning literature points to a clear solution: provide an environment where students actively attempt such problems, learn their mistakes, and take corrective action with the support of the professor and classmates. However, the active learning techniques employed by the professors in these two sections were clearly not sufficient. Whether it was lack of time or weak incentives for students, there is room for improvement.

IB Simulations

According to Jenkins (1988), simulations were used 5000 years ago, and been used significantly in business education since the 1950s. Proposed benefits include encouragement of thoughtful decision making, integration of functional expertise, appreciation of the international context, a more stimulating pedagogical tool, and an opportunity to manage complexity (Farrell, C. (2005)).

Recently, there has been a shift to multimedia in the class room in general, and the digitization of simulations particularly (Sinkovicsa et al (2009), Gossman et al. (2007)). The evidence on the pedagogical effectiveness is less than perfect (Engle (2007)), but given the rapid adoption and use of digital simulations by businesses (McGowan (2008), Bridgeland and Zahavi (2008)), there are many benefits for today's business students.

Currently, there is an abundant supply of IB simulations (McGuinness (2004), Manuela et al. (2009), Lamont et al. (2005), Association Global View Capstone Course, Interpretive Simulations – Country Manager, Global Supply Chain Management Simulation). While these simulations do offer significant IB learning experiences, most are intended to be used over several weeks if not months. This length is required as the simulations are rather comprehensive. Manuela et al. (2009) offers a focused international finance simulation in Excel, however it is too advanced for business students without significant accounting and finance backgrounds.

Creating a Simple FX Simulation

To provide students a tool to improve understanding of FX implications in IB survey courses, the following conditions need to be met:

- i. Relationship between the geographic organization of a firm and the FX rates needs to be clear
- ii. Be able to assess the impact of a currency's appreciation/depreciation on a business metric
- iii. Be able to experiment with a business strategy to manage the aforementioned impact
- iv. Time spent learning and running the simulation must be minimal (less than 30 minutes)

To meet objectives i through iii, we designed a simple scenario where a firm's production of widgets is in the United States, its sales are in India, and the student has control over the price of widgets in Indian Rupees.

Production is determined by a constant average and marginal cost equation, demand is a time-invariant linear equation, and the stochastic exchange rate is determined by a linear trend, one lagged dependent variable, and a random shock (see Appendix 2 for specific equations). All of these equations were entered into an Excel spreadsheet where each row was a variable and each column represented a time period. We created two spreadsheets entitled "practice" and "real" that contained the same sets of equations.⁴⁷ Lastly, the constant parameters of the equations, for example fixed average cost, were stored in a separate sheet in the same Excel file entitled "parameters" to facilitate future modifications of assumptions.

At this point, we could have added some comments and graphs to the excel file and then just shared the file with the students for them to explore the FX issues. However, we reasoned that in order to meet objective iv, a web-based application with a user-friendly environment would better meet the needs of our students and allow them to focus on objectives i through iii. To this end, we utilized the free modeling software at Forio.com.

There are two basic steps in creating a web-based simulation at Forio.com: create the model and then create the user interface. Having already created the model in an excel file, we merely uploaded the excel file to Forio.com and the software automatically recognized the underlying equations⁴⁸. To verify that the model is uploaded correctly you may use the "explore model" feature which displays the equations in a dynamic diagram (see Figure 1 for a screen shot) or simply inspect the equations in the "Model" tab. The second step is the construction of the user interface. Fortunately, you need zero programming experience as you merely drag and drop features into the browser and enter text directly into text boxes. Features include line plots, bar charts, various input dials such as sliders, and tables. For more information, there is an instructional video here <http://forio.com/simulate.htm>.

⁴⁷ This step is useful for creating a practice scenario for students where they can manipulate the exchange rates and a real scenario where they only have control over the price.

⁴⁸ The only requirements are that the rows contain variables and the columns refer to different time periods. If there are multiple sheets, Forio.com prefixes the name of the sheet to each variable, for example real.profit refers to the profit variable from the "real" sheet.

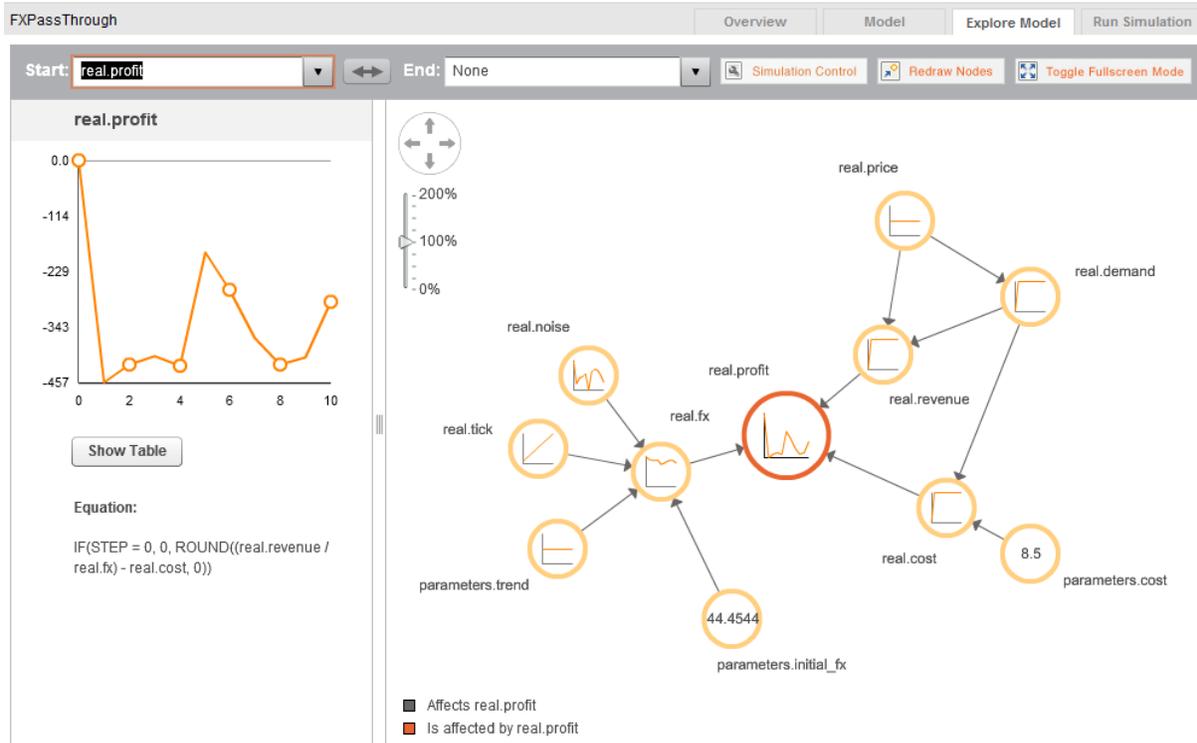


Figure 1: The “Explore Model” Feature at Forio.com

On November 2nd, 2010, one of the surveyed sections from the aforementioned IB class accessed this simulation during class from each individual’s laptop computer. To provide incentives for participation, those students that emailed the professor a screen shot of their performance would earn extra credit towards their course grade. After about 20 minutes and several questions, every student had completed the simulation several times and submitted at least one screen shot. The survey in Appendix 3 was then administered to gain feedback from the 27 students. Tables 5 and 6 summarize this data.

Proposed Changes	Average	Standard Deviation	Percent ≤ 3
1. Use real products instead of widgets	3.11	0.58	78%
2. Increase the complexity of the problems	2.48	0.85	85%
3. Use actual companies	3.33	0.62	67%
4. Provide more clear instructions	4	0.68	15%
5. Make the user-interface more intuitive	3.44	0.58	59%
6. Improve the aesthetics of the layout	3.22	0.51	74%

*Twenty seven students were asked how the proposed changes would affect the FX simulation on a scale of 1 (“make much worse”) to 5 (“greatly improve”).

Table 5 displays the students’ feedback on the simulation. A higher score indicates that the simulation would improve if the change was made. Surprisingly, students did not see a great potential for improvement by using real products and companies. One student submitted that “I liked the fact that we used generic widgets because it kept it simple and easy to understand while learning the basics of the simulation.” This evidence reinforces the need for simulations and exercises that focus on FX issues. The largest weakness of the simulation was the lack of clear instructions. Part of the confusion was how their performance would correlate into extra credit points. Given

that the exchange rates differ across simulation runs, a consistent method for assessing performance is currently lacking.

Before discussing Table 6, we first offer more details about the simulation. During the practice round of the simulation, students are able to choose various values of FX rates and are then encouraged to find the price in Rupees that maximizes profits (Appendix 4 contains various screenshots of the simulation). As students then proceed through the simulation, they must adjust the price of their widgets based on past and anticipated FX rates. After 10 rounds of decision making, students receive feedback on the simulation and learn about the concept of pass-through pricing in the context of FX exposure. Students should be able to learn that pass-through pricing can mitigate the amount of FX exposure; however, its effectiveness is limited by the ability of a company to predict future FX rates.

Table 6 reports the results from students' answers to "What are the advantages and limitations of "pass through" pricing?" after completing the simulation. The weak (strong) students are defined as those that answered question #3 from Table 4 in-correctly (correctly). According to Faria et al (2005), when strong students outperform weak students in simulations, it validates the exercise. Clearly, the stronger students are better able to grasp how their decisions in this simulation manage FX fluctuations.

Score	Percent for Weak Students	Percent for Strong Students
0	67%	12%
1	11%	24%
2	22%	64%

Conclusion

Teaching International Business survey courses will always demand a delicate balance between the breadth and depth of covered topics. Foreign exchange rate material is a particularly difficult topic in these courses as its quantitative and analytical nature is quite different from the rest of the course, and often catches students "off guard." Short and focused simulations offer promise in aiding students through this learning context. However, there is currently a lack of such simulations on the market.

In this paper we discussed the nature and construction of one web-based FX simulation using Excel spread sheets and software at Forio.com. Advantages of this approach from the faculty's perspective include relatively short production time, control of specifications, and zero required programming skills. Faculty can use this approach to share spread sheet models that are simple or very complex. For students, the end product is accessible on the web, easy to navigate, and fun.

Future research in this area can provide more empirical evidence on the impact of simulations. With a continuing focus on outcomes in academics, faculty should be able to tie simulations to specific course outcomes to identify the impact.

Appendix 1: 1st Survey

1. Do you disagree or agree with the following statements?

	Strongly disagree	Disagree	Neither disagree or agree	Agree	Strongly agree
I am comfortable with applying mathematics in business problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am worried about my performance in the foreign exchange rate section of this class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I understand the importance of foreign exchange rates in business	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My mathematical reasoning is low	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The foreign exchange rate problems in today's class were simple	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I lack confidence with numbers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The appreciation/depreciation concept was confusing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've never enjoyed working with mathematics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am confused with the direct/indirect distinction for FX quotes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have a difficult time working with fractions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calculating cross exchange rates are difficult	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

2. Your academic year (multiple choice)
3. Your primary major (multiple choice)
4. Have you taken a finance class in a previous semester?
5. Are you currently taking a finance class?
6. Did you read the assigned reading for today?
7. Consider the foreign exchange table handout. How many dollars can you purchase with 100 British pounds? (text box)
8. Assume that you own a company in India. The quote for the US dollar is 44.665INR per USD (INR stands for Indian Rupees). If one year from now the rate changes to 50 INR per USD, you conclude that (multiple choice)
9. As of today, the exchange rate between the US dollar and Chinese Yuan is 6.6734Yuan per USD. Based on this information, you agree to a salary of 15,000Yuan to teach English in China next summer. If the rate changes to 6.5 Yuan per USD just before the summer, what is the net change in your income in terms of US dollars? *Enter in the dollar amount rounded to decimals. Indicate if it is a negative or positive amount. (text box)

Appendix 2: Model Equations

$Cost_t = AC * Q_t$; where AC equals average cost and Q_t equals quantity sold
$Q_t = \begin{cases} 0, & \text{if } Pr_t > 649 \\ 300 - .45 * Pr_t, & \text{if } Pr_t \leq 649 \end{cases}$; where Pr_t equals the price in Rupees
$FX_t = \begin{cases} 5.52 + .878 * FX_{t-1} + trend * t + \varepsilon_t, & \text{if } t > 0 \\ initial\ FX + \varepsilon_t, & \text{if } t = 0 \end{cases}$; where FX_t equals the exchange rate in period t, trend is the trend coefficient which is randomly determined at the beginning of each simulation, ε_t is white noise in period t, and initial FX is a constant.
$Profit_t = \frac{Q_t * Pr_t}{FX_t} - Cost_t$

Appendix 3: 2nd Survey

1. What is "pass through" pricing? (text box)
2. What are the advantages and limitations of "pass through" pricing? (text box)
3. How will the following changes affect the FX simulation?

	make much worse	make slightly worse	no impact	slightly improve	greatly improve
use real products instead of widgets	<input type="radio"/>				
increase the complexity of the problems	<input type="radio"/>				
use actual companies	<input type="radio"/>				
provide more clear instructions	<input type="radio"/>				
make the user-interface more intuitive	<input type="radio"/>				
improve the aesthetics of the layout	<input type="radio"/>				

4. Do you have any suggestions for improving the simulation? (text box)

Appendix 4: Simulation Screen Shots

Pricing Model:

Scenario
Practice
Decision

You currently sell widgets in India. Competitively priced widgets range from 300 Rupees to 550 Rupees. You produce your widgets in the US and state your corporate profits in US dollars.

In this simulation, you must set the price of widgets in Rupees. If you set a high price your margins increase, but your total revenue may decrease. If you set a low price, you increase quantity sold, but may decrease overall profits. Headquarters only cares about profit in US dollars. Unfortunately, you cannot control the exchange rate between the US dollar and Indian Rupee.

On the Practice tab, you may experiment with different combinations of prices and exchange rates at current demand conditions. Is there a price that guarantees positive profits regardless of the exchange rate?

After practicing, it's time to set the real prices. Under the Decision tab, you enter a price and click submit. You may change your prices as the simulation proceeds (there are 10 rounds). After round 10, please take a screen shot of your results and email them to me with your 3 digit ID #.




This is the opening screen of the simulation. Instructions and an overview of the simulation are provided.

Figure 2: Scenario Screen Shot

Scenario
Practice
Decision

Instructions

Experiment with different prices using the slider on the right. Notice how the orders, revenue, and profits change.

Now, experiment with different exchange rates. For any given price, how does the exchange rate affect orders, revenue, and profits?

Price in Rupees (INR)
₹

250 350 450 550 650

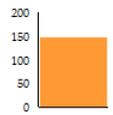
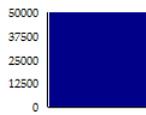


FX Rate (INR per USD)

30 40 50 60



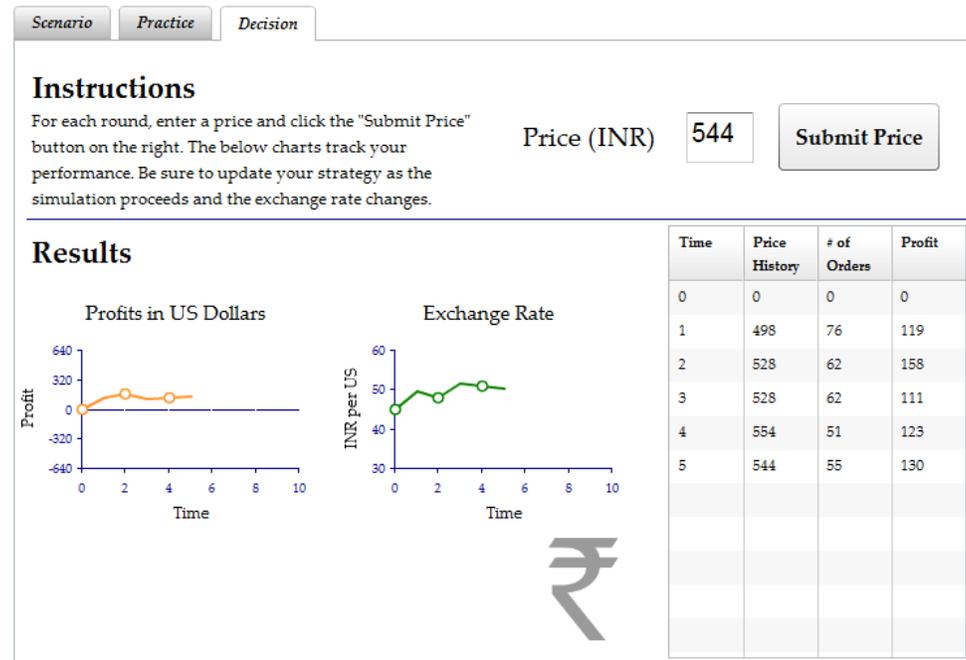
Results

# of Orders	Revenue in Rupees	Profit in US Dollars	
			

Under the practice tab, students can adjust the price and FX rate using the sliders in the top right hand corner of the page. The impact of these changes on various business metrics are shown in bar charts on the bottom.

Figure 3: Practice Screen Shot

Pricing Model:



Students enter the price in the top of the page each round. The charts and table update after every price submission.

Figure 4: Decision Screen Shot

Pricing Model:

Optimal Price

The price that maximizes profit in this simulation depends on the exchange rate. On Graph 1, there are two profit curves for two different exchange rates. Notice that the curves have different maximum points and corresponding optimal prices.

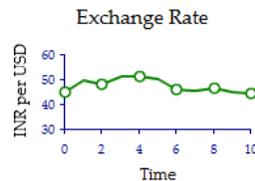
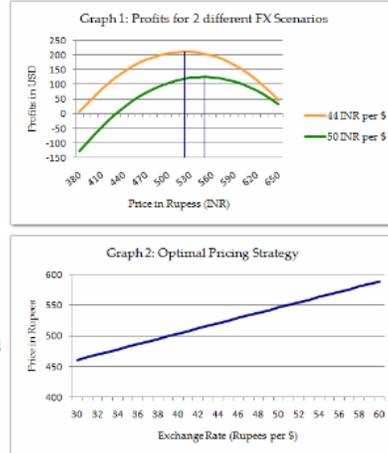
The orange curve represents a rate of 44 INR per \$. Setting a price near 530 INR maximizes profits. If the FX rate changes to 50 INR per \$, your earned Rupee revenues now translate into less US dollars (blue curve is lower than the green curve). To compensate, you can increase the price towards 560 INR to increase profits. This process is referred to as "pass through" - you pass the exchange rate change through the price to the consumer.

We can solve for the optimal price for every possible exchange rate (you tried to do this in the practice). Graph 2 plots these prices against the exchange rates. Even though you know the optimal price, you still do not know what the exchange rate will be in the next round. Thus, a pricing strategy is NOT sufficient to hedge against foreign exchange rate risk.

Exchange Rate Forecasts

Without any hedging tool available in this simulation, your only strategy is to predict next round's exchange rate and set the optimal price for that rate. This is risky here and in real life as exchange rates fluctuate often and unexpectedly. However, in the this simulation, you may be able to pick up on a trend and cycles as each simulation unfolds. Be careful, these may change each time you restart the simulation.

Play Again



After all decisions are submitted, students learn about the pass-through pricing is defined in this context.

Figure 5: Feedback Screen Shot

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The European Union's Approach to the European Debt Crisis and the Sustainability of the Euro Area

Research-in-Progress

Axel Gerloff

Baden-Wuerttemberg Cooperative State University, Campus Bad Mergentheim

Introduction

It has been repeatedly argued that the European Union (EU), or more specifically the European Monetary Union (EMU) that comprises member states using the euro as their common currency, faced a currency crisis in late 2009 and early 2010. However, the exchange rate movements hardly indicate a euro crisis during that period. Until the end of November 2009, the US dollar/euro exchange rate had increased to 1.50 USD/EUR. The euro considerably weakened during the first half of 2010 and reached a low of 1.20 US dollar per euro in June 2010 albeit from a high level (see figure 1). From 2004 onwards, the US dollar/euro rate has been fluctuating at levels well above the average exchange rate of 1.19 USD/EUR since the introduction of the euro. Moreover, the paper argues that the existence of the euro area has not been at risk. Most member states had weathered the financial crisis reasonably well. Fiscal deficits widened and public debt ratios worsened as a consequence of both, lower collection of state revenues and higher expenses caused by fiscal stimuli. However, with the exception of Greece and possibly Ireland, the euro area countries have not had problems servicing their debts. Therefore, it seems appropriate to identify the situation as a fiscal crisis of some euro area countries, namely Greece and Ireland, which embarked on unsustainable fiscal paths. Although the euro area members are closely intertwined economically and financially, it is argued that the fiscal problems of one or another country would not have risked the break-up of the euro area. This paper also demonstrates that the debt crisis was triggered by the most severe economic downturn since the Great Depression. However, the adverse change in global environment is not the primary cause of the crisis but only surfaced problems of the euro area that have been inherent in its design for more than 12 years.

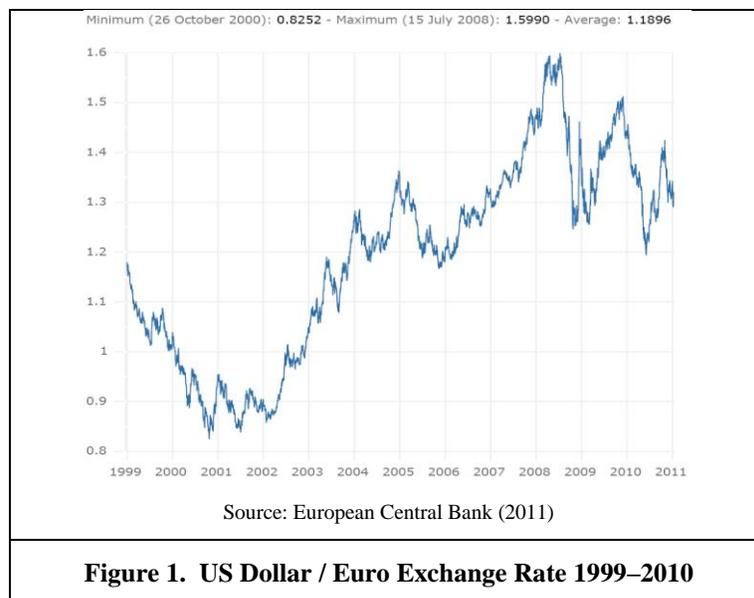


Figure 1. US Dollar / Euro Exchange Rate 1999–2010

The European Union and the euro area are at the crossroads. Will the EU authorities draw the right conclusions from the dramatic events in 2010? To avoid future debt crises, or at least, to reduce the probability of their recurrence, rules have to be established that create adequate incentives to conduct national fiscal and structural policies which are sustainable and compatible with a single European monetary policy. As past experience has shown it will not be sufficient to rely on positive intentions and increased coordination at the EU level. If politicians shun away from real reforms and the proposed institutional changes lead to a euro area in which financially sound countries have to support members with lax fiscal discipline, the path towards a transfer union will be paved. Eventually, this might lead to fading support for the euro area in the former countries especially when – due to the creation of wrong incentives – an increasing number of member states take recourse to a safety net that is being funded by the financially strong countries. Instead, a system is needed that establishes a credible sanction mechanism for non-complying countries. This is the only way to ensure the conduct of appropriate national policy stances. If this materializes, the EMU will come out of the crisis stronger than it went in.

The paper is structured as follows. The first section looks at the design of the euro area and argues that the Stability and Growth Pact (SGP) has been unable to avoid the combination of a successful monetary policy and unsustainable fiscal policy during the past twelve years of the euro area. This unfortunate nexus has led to the outbreak of the debt crisis. The following section gives an overview of the public financial data within the EU and briefly describes the events that resulted into the near insolvency of Greece in spring 2010. The policy response of the EU is presented in the third section. The first two subsections look at the emergency measures of the EU and the role of the European Central Bank (ECB). However, these measures are only of temporary nature and have to be replaced by a permanent arrangement by the year 2013. Therefore, the third subsection critically evaluates the proposals of the European Commission and the European Council for a permanent crisis prevention mechanism prior to the fourth section's presentation of an alternative approach that stresses the need for hard budget constraints through market forces. The analysis shows that government failure is the greater problem than market failure. The last section concludes.

Design of EMU: Single Monetary Policy and National Fiscal Policies

Many economists have been arguing that the EU – or a subgroup of EU member states – does not represent an optimum currency area. There is scientific consensus that several criteria, e.g. labor mobility within a region and openness of the economy, influence the smooth functioning of a monetary union. Critics state that many of these factors are not fulfilled in Europe and, therefore, a European Monetary Union cannot work. It is beyond the scope of this paper to review the literature on optimum currency areas and discuss the pros and cons of a common currency within Europe. See Mundell (1961), McKinnon (1963) for classical contributions, and Mongelli (2002) for a survey of the literature on the optimum currency area and a cost benefit analysis with reference to EMU.

The EMU is taken as a historical fact albeit one that could potentially be at risk and is challenged by the recent developments. The use of a single currency is one stage of the European integration. Politically, this integration process has unquestionably led to a peaceful period in Europe of more than five decades. From an economic perspective, theoretical and empirical studies have also demonstrated the benefits of the common currency. For example, Baldwin et al. (2008) show that the euro has significantly promoted intra-eurozone trade and has had a positive effect on trade with countries outside the EMU. Moreover, their study confirms an advantageous impact of euro area membership on foreign direct investment. The purpose of this section is to look at the institutional setup of the euro area and how the economic policy mix is designed within the eurozone.

The Treaty on the EU stipulates that EU countries have to fulfill so-called convergence criteria to become a member of the euro area. The same process that was executed at the start of EMU is also applied to potential new member states. They have to meet two monetary (inflation and long-term interest rate), one exchange rate, and two fiscal criteria (budget deficit and government debt in percent of gross domestic product (GDP)). This procedure should prove the convergence of the candidate country's economy towards the euro area level prior to accession.

While monetary and exchange rate policies are harmonized within the European Monetary Union, the national governments continue to assume responsibility for each country's fiscal policy. Since the introduction of the euro, the European Central Bank has successfully conducted the single monetary policy for the euro area. The policy has led to a prolonged period of price stability with an average annual inflation rate in the euro area of 1.97 % during the first twelve years of EMU (Trichet 2010). By definition, exchange rate policy was eliminated within the eurozone. Therefore, nominal exchange rate adjustment is a policy instrument not available to euro area governments. While monetary and exchange rate policy have been elevated to a harmonized European level, fiscal and structural policies

are still conducted by the member states' governments. National policy-makers have to focus on price and wage flexibility, i.e. structural policy, and fiscal policy to achieve necessary adjustments in their countries.

Initially, the Stability and Growth Pact was approved in 1997 to avoid excessive public deficits and to ensure sustainable fiscal policies among eurozone countries. Sound public finances are viewed as an important requirement for the eurozone to function properly. Therefore, a country has to meet the two fiscal criteria, a maximum annual general budget deficit of 3 % of GDP and a gross government debt to GDP ratio of no more than 60 % not only when entering the eurozone. Moreover, both thresholds apply to all members of the euro area. While the institutional design of the euro area harmonizes monetary and exchange rate policy, the SGP's intention is to coordinate fiscal policies among EMU member states and safeguard sound public finances at national levels. The rationale of the SGP is supported by a recent study of Reinhart and Rogoff (2010). They find a positive correlation between high debt ratios and low growth rates for the developed and developing economies. For advanced economies, countries exceeding the threshold of 90 % of gross government debt as percent of GDP experience growth rates that are several percent lower than the peer group.

The Stability and Growth Pact consists of a preventive and a dissuasive arm (European Central Bank 1999; Deutsche Bundesbank 2004, 2005). According to the preventive arm, all member states of the euro area have to submit stability programs to the European Commission. The countries are obliged to adhere to a medium-term objective for their budgetary positions of close to balance or in surplus. This budgetary objective should contain a safety margin to the deficit ceiling of 3 % of GDP to allow automatic stabilizers to work during a recession. The programs have to be updated on an annual basis. The Commission assesses the programs and the European Council gives its opinion on them. Following a recommendation by the Commission, the Council can issue an "early warning" to a member state before an excessive deficit – i.e. a breaching the 3 % threshold – has occurred. Moreover, the Council can make policy recommendations with regard to the member state's fiscal policy if it recognizes the need for adjustment. The dissuasive arm governs the so-called "excessive deficit procedure", when the country's budget deficit exceeds the 3 % threshold. The Council issues recommendations to the member state to correct the excessive deficit and prescribes a timeframe for doing so. Non compliance with the recommendations triggers further steps including the possibility of sanctions for euro area countries.

An excessive deficit procedure will not be launched if the excess of the government deficit over the 3% of GDP threshold is considered temporary and exceptional and the deficit remains close to the threshold. Moreover, with regard to the implementation of structural reforms, in particular pension scheme reforms in the light of ageing populations that increase public expenditures, the SGP allows temporary deviations from the medium-term objective or the adjustment path to reach it. These provisions increasing policy makers' flexibility complicate the assessment of national budgetary policies and have regularly led to discussions on the adequacy of policy measures.

During the early years of EMU the budgetary positions of several EMU member states deteriorated despite the SGP due to the implementation of temporary measures and statistical revisions. In November 2003, the Ecofin Council did not approve the European Commission's recommendations on the budgetary situation in Germany and France – both countries' budget deficits exceeded 3 % of GDP – which led to a deadlock in the decision-making process. In March 2005, a reform of the SGP entered into force that changed and softened some of the SGP's regulations. The following year government budget balances showed improvement. However, the amelioration was not primarily a result of fiscal consolidation but was caused by more favorable economic conditions that led to higher tax revenues. The member states did not follow the provisions of the SGP which stipulates that the countries should do more in economically "good times". As a result, the first half of the decade was characterized by an upward trend in government debt ratios (European Commission 2007). These developments demonstrate that the objectives of the SGP were not achieved during a period of relatively favorable circumstances. The consequences of insufficient budgetary discipline during better times became apparent when the euro area was hit by the global economic crisis in 2008. The next section looks at European data and the development in the two crisis countries Greece and Ireland.

Evolution of the Euro Area Debt Crisis 2009/2010

Fiscal Developments in the European Union since 2003

Table 1 shows the development of public budget balances and gross government debt of EU countries and – as memorandum items – of the U.S. and Japan for the past eight years. The forecasts for 2011 are IMF projections from the World Economic Outlook Database as of October 2010. Two exceptions are Greece and Ireland. The

developments during the last quarter of 2010 rendered the fall estimate obsolete for these two crisis countries by the end of the year. Therefore, revised data are taken from IMF country reports published in December 2010.

Table 1. EU Government Deficits (-) / Surpluses (+) and Government Debt (in % of GDP)										
Country		2003	2004	2005	2006	2007	2008	2009	2010*	2011*
Austria	Budget Balance	-1.4	-4.4	-1.7	-1.5	-0.4	-0.5	-3.5	-4.8	-4.1
	Government Debt	65.5	64.8	63.9	62.1	59.3	62.5	67.5	70.0	72.4
Belgium	Budget Balance	-0.1	-0.3	-2.7	0.2	-0.3	-1.3	-6.0	-4.8	-5.1
	Government Debt	98.5	94.2	92.1	88.1	84.2	89.6	96.2	100.2	103.1
Cyprus	Budget Balance	-6.5	-4.1	-2.4	-1.2	-3.4	0.9	-6.0	-6.0	-5.6
	Government Debt	68.9	70.2	69.1	64.6	58.3	48.3	58.0	60.8	64.1
Finland	Budget Balance	2.4	2.3	2.7	4.0	5.2	4.2	-2.5	-3.4	-1.8
	Government Debt	44.5	44.4	41.7	39.7	35.2	34.1	43.8	50.0	52.2
France	Budget Balance	-4.1	-3.6	-2.9	-2.3	-2.7	-3.3	-7.5	-8.0	-6.0
	Government Debt	62.9	64.9	66.4	63.7	63.8	67.5	78.1	84.2	87.6
Germany	Budget Balance	-4.0	-3.8	-3.3	-1.6	0.3	0.1	-3.0	-4.5	-3.7
	Government Debt	63.9	65.8	68.0	67.6	64.9	66.3	73.4	75.3	76.5
Greece	Budget Balance	-5.6	-7.5	-5.2	-5.7	-6.4	-9.4	-15.4	-9.6	-7.4
	Government Debt	97.4	98.6	100.0	106.1	105.0	110.3	126.8	141.0	152.0
Ireland	Budget Balance	0.4	1.4	1.6	2.9	0.0	-7.3	-14.4	-32.0	-10.5
	Government Debt	31.0	29.7	27.4	24.8	25.0	44.3	65.5	98.9	112.8
Italy	Budget Balance	-3.5	-3.5	-4.3	-3.4	-1.5	-2.7	-5.3	-5.1	-4.3
	Government Debt	104.4	103.8	105.8	106.6	103.6	106.3	116.0	118.4	119.7
Luxembourg	Budget Balance	0.5	-1.1	0.0	1.4	3.7	3.0	-0.7	-3.8	-3.1
	Government Debt	6.1	6.3	6.1	6.7	6.7	13.6	14.5	20.1	22.9
Malta	Budget Balance	-9.8	-4.7	-2.9	-2.7	-2.3	-4.8	-3.8	-3.8	-3.6
	Government Debt	69.3	72.3	70.1	63.4	61.7	63.1	68.6	70.0	70.9
Netherlands	Budget Balance	-3.1	-1.7	-0.3	0.5	0.2	0.6	-5.4	-6.0	-5.1
	Government Debt	52.0	52.4	51.8	47.4	45.3	58.2	60.8	66.0	69.4
Portugal	Budget Balance	-2.9	-3.4	-6.1	-4.1	-2.8	-2.9	-9.3	-7.3	-5.2
	Government Debt	56.9	58.3	63.6	63.9	62.7	65.3	76.1	83.1	87.1
Slovak Rep.	Budget Balance	-2.8	-2.4	-2.8	-3.2	-1.8	-2.1	-7.9	-8.0	-4.7
	Government Debt	42.4	41.5	34.2	30.5	29.6	27.8	35.4	41.8	44.0
Slovenia	Budget Balance	-2.7	-2.2	-1.4	-1.3	0.0	-1.8	-5.8	-5.7	-4.3
	Government Debt	27.5	27.2	27.0	26.7	23.4	22.5	35.4	34.5	37.2
Spain	Budget Balance	-0.2	-0.3	1.0	2.0	1.9	-4.2	-11.1	-9.3	-6.9
	Government Debt	48.7	46.2	43.0	39.6	36.1	39.8	53.2	63.5	70.2
Euro Area	Budget Balance	-3.1	-2.9	-2.5	-1.4	-0.6	-2.0	-6.3	-6.5	-5.1
	Government Debt	69.2	69.6	70.3	68.5	66.2	69.8	79.2	84.1	87.0
Bulgaria	Budget Balance	-0.3	1.6	1.9	1.9	1.1	1.7	-4.7	-4.9	-4.2
	Government Debt	45.9	37.9	29.2	21.6	17.2	13.7	14.7	18.2	21.1
Czech Rep.	Budget Balance	-6.6	-3.0	-3.6	-2.6	-0.7	-2.7	-5.8	-5.4	-5.6
	Government Debt	29.8	30.1	29.7	29.4	29.0	30.0	35.3	40.1	44.4
Denmark	Budget Balance	0.1	2.1	5.2	5.2	4.8	3.4	-2.7	-4.6	-4.4
	Government Debt	47.2	45.1	37.8	32.1	27.4	34.2	41.4	44.2	46.7
Estonia	Budget Balance	1.7	1.6	1.6	2.4	2.5	-2.8	-1.7	-1.1	-1.7
	Government Debt	5.6	5.0	4.6	4.4	3.7	4.6	7.2	8.1	7.8
Latvia	Budget Balance	-1.6	-1.0	-0.4	-0.5	-0.3	-4.2	-10.2	-11.9	-7.6
	Government Debt	14.6	14.9	12.4	10.7	9.0	19.7	36.7	42.2	49.0
Lithuania	Budget Balance	-1.3	-1.5	-0.5	-0.4	-1.0	-3.3	-9.2	-7.7	-7.7
	Government Debt	21.1	19.4	18.4	18.0	16.9	15.6	29.5	39.5	42.3
Hungary	Budget Balance	-7.2	-6.4	-7.9	-9.3	-5.0	-3.7	-4.4	-4.2	-4.5
	Government Debt	58.4	59.1	61.8	65.7	66.1	72.3	78.4	78.4	78.8
Poland	Budget Balance	-6.2	-5.4	-4.1	-3.6	-1.9	-3.7	-7.2	-7.4	-6.7
	Government Debt	47.1	45.7	47.1	47.7	45.0	47.1	50.9	55.2	57.4
Romania	Budget Balance	-1.5	-1.2	-1.2	-2.2	-2.6	-5.7	-8.6	-6.8	-4.4
	Government Debt	21.5	18.7	15.8	12.4	12.6	13.4	23.9	35.5	37.7
Sweden	Budget Balance	-0.9	0.8	2.3	2.3	3.6	2.2	-0.9	-2.2	-1.4
	Government Debt	52.3	51.1	50.8	45.0	40.0	38.2	41.9	41.7	41.3
United Kingdom	Budget Balance	-3.4	-3.4	-3.4	-2.7	-2.7	-5.0	-11.4	-10.2	-8.1
	Government Debt	39.0	40.9	42.5	43.4	44.5	52.1	68.2	76.7	81.9
EU-27	Budget Balance	-3.1	-2.9	-2.5	-1.5	-0.9	-2.3	-6.8	-6.9	-5.5
	Government Debt	61.9	62.2	62.8	61.5	58.8	61.8	74.0	77.5	80.6
USA	Budget Balance	-4.9	-4.4	-3.2	-2.0	-2.7	-6.7	-12.9	-11.1	-9.7
	Government Debt	60.4	61.4	61.6	61.1	62.1	71.1	84.3	92.7	99.3
Japan	Budget Balance	-8.0	-6.2	-4.8	-4.0	-2.4	-4.1	-10.2	-9.6	-8.9

Government Debt	167.2	178.1	191.6	191.3	187.7	194.7	217.6	225.9	234.1
Sources: Eurostat 2011 Database for European nations up to 2009. USA and Japan: IMF 2011 World Economic Outlook Database. * IMF Staff Estimates for 2010 and 2011 from the latter source. IMF 2010a, 2010b for projections on Ireland and Greece, respectively.									

The comprehensive data set shows that all countries within the EU have experienced rising public debt ratios over the past two years. Despite on average declining budget deficits all countries are forecast to show also higher government debt ratios in 2011. Sweden is the only exception with a decline of half a percentage point. The world financial and economic crisis resulted in a significant deterioration of public finances around the globe. This development was also prevalent in the EU. In 2009, which is the year when the economic crisis peaked and for which reported data are available, on average, government deficits of EU-27 widened to -6.8 %. This is an increase of 4.5 percentage points compared to 2008 albeit with quite different national outcomes. Public deficits in 2009 ranged from almost balanced budgets of -0.7 % and -0.9 % in Luxembourg and Sweden, respectively, to -14.4 % in Ireland and -15.4 % in Greece at the other end of the spectrum. With regard to the annual budget deficit the EU-27 and euro area figure do not differ substantially. The slightly higher EU data result from the lower budget discipline in the United Kingdom.

It is worth noting how the European fiscal developments compare to U.S. and Japanese data. Since 2007, the average levels of budget deficits and government debt in percent of GDP have been lower in Europe than in both, the U.S. and Japan. For both countries annual public deficits have been higher than in the euro area or the EU for all years of the period from 2003 to 2011. While the 2007 U.S. government debt figure was still below the euro area level, the situation reversed in the following year with the U.S. number exceeding the eurozone debt in 2008 and 2009. The gap is expected to grow to more than 8.5 and 12 percentage points in 2010 and 2011, respectively. In comparison to the European Union instead of the euro area, the difference is even more pronounced as the EU-27 has a debt ratio that is on average approximately seven percentage points lower than the respective number of the euro area. The U.S. debt ratio is forecast to get close to the 100 percent threshold by the end of this year. Japan's debt ratio stood at 167.2 % of GDP in 2003 and has steadily grown to more than 200 % in 2009. It is estimated to reach more than 230 % by the end of 2011. On the one hand, the inter-regional comparison confirms that high absolute levels of public deficit or debt do not necessarily indicate a crisis situation. On the other hand, the data suggest that the U.S. and Japan might be vulnerable to financial stress situations and changing investor sentiment in the years to come. Need for fiscal consolidation and movement to a path of sustainable state finances.

Focusing on the two crisis countries Greece and Ireland, table 1 shows a distinct difference in fiscal developments between the two countries. Greece has never fulfilled the fiscal criteria since it joined the euro area in 2001. For 2001 and 2002, the two years of Greece's EMU membership not covered by the table, the annual budget deficits amounted to -4.5 % and -4.8 %, respectively, whereas the government debt ratio stood at 103.7 % and 101.7 % (Eurostat 2011). On the contrary, with the exception of a small budget deficit of -0.3 % of GDP in 2002, Ireland ran budget surpluses in all years from 1999 to 2007. The favorable economic conditions and the fiscal surplus situation allowed Ireland to halve its government debt ratio from almost 50 % of GDP in 1999 to 25 % of GDP in 2007. However, the ailing banking sector and its bail-out led to a massive deterioration of Irish public finances which eventually culminated in taking recourse to European financial aid. While the Greek data clearly represent an unsustainable fiscal position, Ireland's financial problems result from the banking sector crisis that emerged from the world financial crisis and from the Irish government's approach to bail-out all banks.

The Case of Greece

In October 2009, after general elections in Greece and the formation of a new government it was announced by the new administration that the fiscal deficit would be 12.7 % rather than the previously reported 6 % and the 3.7 % promised at the beginning of the year by the previous government (Buiter and Rahbari 2010; Wissenschaftlicher Beirat 2010). This mis-reporting comes on top of the incorrectly reported data on which Greece was admitted to the euro area at the beginning of 2001. However, as no immediate measures to correct the situation were taken concerns rose about the sustainability of public finances in Greece. In February 2010, the European Council prompted Greece to implement immediate and drastic measures to correct the excessive deficit. Among others, this included a cut in public payroll, reducing the number of public employees, an increase of the value added tax rate, and reform of the public pension system. In March, the Greek government announced additional budget cuts amounting to 2 % of GDP. Against the backdrop of these developments, the European Council agreed on € 30 bn financial support that should be disbursed over the next three years and supplemented by IMF funds of € 15 bn. However, as the country's 2009 budget data turned out to be worse than expected and the Greek economy slowed down more than forecast sovereign bond spreads widened drastically. Mid of April, the 3-year financial aid package was increased to € 80 bn

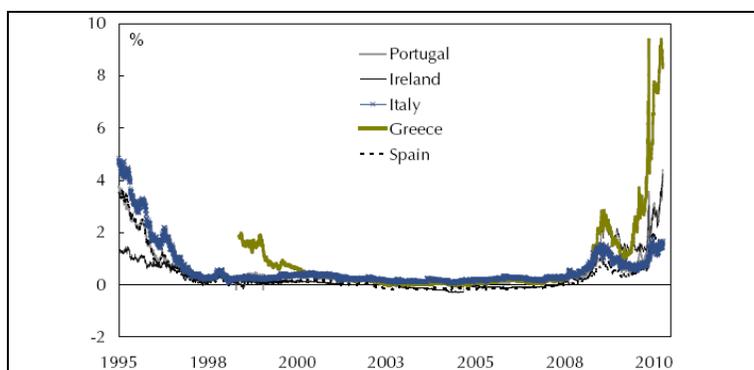
from EU sources and € 30 bn from the IMF. Moreover, the ambitious budget targets were eased and the objective to reach the 3 % deficit target was postponed until 2014.

The Case of Ireland

As documented by the Irish data in table 1, Ireland’s fiscal position was much more favorable than the Greek situation in previous years. Since the mid-1990s, the Irish real estate sector experienced a boom in which housing prices quadrupled. At the end of 2006, a drastic reversal started with the downward trend continuing into 2010. (Wissenschaftlicher Beirat 2010). During 2008–09 the economy shrank by 11 % in real terms. Housing prices have fallen 36 % since their peak and continue to decline albeit at a slower rate (IMF 2010a). This has piled up non-performing loans in the banking sector. To support the financial industry, the Irish government established the state-owned National Asset Management Agency (NAMA) at the beginning of 2010 which has bought loans from banks with a book value of € 73 bn at a price of € 31 bn. In turn, the banks receive so-called Senior Notes that are state-guaranteed. These notes are accepted by the ECB as collateral for refinancing transactions. The fiscal burden, reflected by the deficit of 32 % of GDP in 2010, is mainly due to financial sector bail-out. Bank recapitalization accounts for approx. 20 % of GDP. The government’s support of the banking sector pushed sovereign spreads to historic highs and significantly hampered bond market access for the Irish government (IMF 2010a). At the end of November, as the first country, Ireland officially applied for funds provided by the newly established EU financial safety net. The total amount of the rescue package comprises € 85bn of which € 17.5 bn come from Ireland’s own cash reserves and other liquid assets. € 45 bn are provided by the European safety net (explained in the next section of this paper) and bilateral loans from the United Kingdom, Sweden and Denmark. € 22.5 bn are a 3-year loan from the IMF. The reform package includes continued reform of the banking system, a fiscal adjustment program to correct the excessive deficit by 2015, and structural reforms, e.g. on the labor market (Eurogroup 2010).

The Comeback of Sovereign Bond Spread Differentials

Before the euro area was created, the spreads reflected market expectations of inflation, exchange rate variations, and sovereign risk. However, during the second half of the 1990s the spreads began to narrow and by 1998, the last year prior to the formation of the eurozone, the spreads had almost converged towards the Bunds (10-year government bonds) level. For the about a decade the spreads remained close together. Exchange rate variations were eliminated by the introduction of the euro. Moreover, although the ECB’s single monetary policy within EMU does not imply that the change of the price level in individual member states are equalized, inflation differentials were brought down. The ECB’s medium-term objective of inflation rates below, but close to 2 % for the entire euro area helped to anchor inflation expectations. Obviously, as indicated by figure 2, sovereign risk was also perceived to have decreased to very low levels. The sovereign spreads between of countries like Greece and Italy over Bunds decreased to well below 50 basis points (Buitert and Sibert 2006). The chart indicates that this situation changed in 2008 when risk premia widened the sovereign spreads. The trend became even more pronounced in 2009 and 2010. After the Greek government’s announcement of fiscal data correction, the sovereign spreads skyrocketed and reached almost 1000 basis points in late 2009 and early 2010.



Source: Buitert and Rahbari (2010).
Figure 2. 10-Year Government Bond Spreads vs. Bunds in

Policy Response of the European Union

In early 2010, the financial distress led to a Euro area debt crisis in which the Greek government almost defaulted on its public debt. As described in the previous section, the EU in cooperation with the IMF put together a financial support package that totaled € 110 bn in April 2010. At the peak of the crisis, the authorities had to respond immediately to solve the problem. In May 2010, the European Union, in cooperation with the European Central Bank and the International Monetary Fund, established short-term emergency measures to provide further financial support to other euro area members in case they run into financial difficulties. Those measures were set up for a period of up to 2013. In the course of the year 2010, the European authorities worked on the design and implementation of a new crisis prevention mechanism. As work is in process, the third subsection describes the proposal as of end-2010 based on the European Council's decisions in Brussels on 16–17 December 2010.

The Immediate Emergency Package

In May 2010, the European Union in cooperation with the ECB and the IMF put together a safety net. The emergency policy rests on four pillars: the European Financial Stabilization Mechanism, a temporary European Financial Stabilization Facility, financial support from the International Monetary Fund, and the ECB's Securities Markets Program. First, the European Financial Stabilization Mechanism (EFSM) consists of funds raised by the European Commission and guaranteed by the EU budget of up to € 60 bn. The Commission borrows the funds on the capital markets or with the financial institutions on behalf of the European Union. The financial assistance is then provided in the form of a loan or a credit line granted to the country with financial difficulty. The EFSM is expected to provide liquidity as long as needed to safeguard financial stability. The European Financial Stabilization Facility (EFSF), as the second pillar, is a special purpose vehicle i.e. a Luxembourg-registered company. It is authorized to raise up to € 440 bn on bond markets guaranteed by the euro area countries. Each eurozone country backs bond issues of the EFSF by guarantees according to its share in the paid-up capital of the ECB. The EFSF is set up as a temporary instrument that will provide assistance until June 2013. The third source of funding is the IMF. European funds are supplemented by up to € 250 bn from the IMF. As the funds available through the IMF amount to € 250 bn, the maximum amount of the rescue package is € 750 bn. Access to these funds is limited to euro area countries and subject to a strict conditionality for those in financial difficulty. The fourth pillar is the European Central Bank's Securities Markets Program under which it may purchase (and has bought) public debt securities. This program in conjunction with other policy measures of the ECB is presented in the following subsection.

The Role of the European Central Bank

In addition to the EU and the IMF, the ECB also plays an active role in the rescue process. It does not only have a consultancy role but has adjusted its policy instruments to support the member states with financial difficulties. Already in October 2008, in addition to its liquidity providing activities, the ECB lowered its standards for the exception of government bonds as collateral in monetary transactions. The list of assets eligible for collateral was expanded and the rating threshold for marketable and non-marketable assets was lowered from "A–" to "BBB–" (ECB 2009, Jarchow 2010). On 3 May 2010, the ECB suspended the application of the minimum credit rating threshold for transactions of the Eurosystem's credit operations for all outstanding and new marketable debt instruments issued or guaranteed by the Greek government. According to the ECB, the decision was justified by the adjustment program that had been negotiated between the Greek authorities, the EU, and the IMF, in liaison with the ECB itself (ECB 2010a). The ECB considered the program to be appropriate and the Greek government to be fully committed to implement the program as planned.

One week later, on 10 May 2010, the ECB announced the Securities Markets Program under which it may purchase (and has bought) public debt securities. The ECB argued that severe tensions in some market segments were hampering the monetary policy transmission mechanism and thereby the effective conduct of monetary policy (ECB 2010b). It wants to ensure depth and liquidity in market segments that are "dysfunctional". These measures are intended to be temporary and should not affect the monetary policy stance for the euro area. Therefore, the ECB has sterilized these interventions on the bond market through specific operations that re-absorb the liquidity injected. Purchasing debt instruments on the secondary market is a crucial step further than the lowering of collateral requirements. Article 123 of the Treaty on the Functioning of the European Union (TFEU) does not permit the

European Central Bank to acquire bonds of EU governments or related institutions on the primary market. It stipulates that the “purchase directly from them by the European Central Bank” is prohibited. The provision intends to secure the ECB’s independence and to avoid central bank financing of government deficits. Therefore, even though the policy might be in line with the letter of the law, it can be doubted that the ECB acts in the spirit of the Treaty.

In two ways, the ECB has given preference to Greek government bonds: First, it accepts these securities as collateral although they do not fulfill the initially set requirements. Second, it introduced the outright purchase of Greek sovereign bonds. As long as the ECB had only lowered the standard for collateral and accepted the lower-rated papers by applying a valuation haircut, it would have acted in line with the market. (Wissenschaftlicher Beirat 2010). However, the complete abolishment of minimum rating standards for Greek bonds favors one-sidedly and represents a market distortion. According to its own rules and guidelines, the ECB should have implemented its risk control measures as outlined in its general documentation on the Eurosystem’s monetary policy instruments and procedures (ECB 2008). In general, for monetary policy operations of the Eurosystem, two assets classes are accepted – marketable and non-marketable assets. If the central bank’s concern was concentrated on the monetary policy transmission mechanism, it could have continued to accept Greek sovereign paper and apply the measures of valuation haircuts, variation margins, initial margins, and others (ECB 2008, Box 7).

The Securities Markets program represents a preferred treatment of Greek debt – and any other debt that is included into the program. It sends the wrong signal to the markets. Irrespective of whether done on the primary or the secondary market, the purchase of the bonds facilitates the issuance of new debt for the sovereign and tends to lower the interest rate. Therefore, the ECB sends an inappropriate signal. See also Buitert and Sibert (2006) for a critical appraisal of how the European Central Bank’s conduct of open market operations and its collateral policy has contributed to excessively small credit risk differentials by sending wrong signals to the market. Moreover, the ECB might become subject to political pressures from other euro area countries to buy their sovereign papers, too. It might become increasingly difficult to convince the public that such a policy approach will not interfere with the ECB’s price stability oriented monetary policy stance.

From Emergency Measures to Long-Term Crisis Prevention

As mentioned before, the EU’s proposal for a permanent crisis prevention mechanism has not been finalized yet. However, three main areas can already be identified on the basis of the European Commission’s proposal, the Van Rompuy Task Force, and the European Council’s conclusions from December 2010 (European Commission 2010a; 2010b; Task Force 2010; European Council 2010): 1) reform of the Stability and Growth Pact to make it more binding; 2) intensified fiscal policy coordination and surveillance of possible economic imbalances (macroeconomic and competitiveness); and 3) establishing a framework for crisis management.

The SGP will be reformed and amended in two aspects. First, the fiscal field should be strengthened. The initial proposal of the European Commission envisioned a “reverse voting” for both, the preventive and the corrective arm of the Pact. That means the EU Commission’s proposal of sanctions is adopted unless the European Council rejects it with qualified majority (European Commission 2010b). The aim is to make the SGP more rules-based. However, the new voting mechanism to increase the automatism of the sanctions has been rejected by the European Council. However, in addition to the deficit developments, more emphasis will be put on monitoring debt developments. The second reform aspect of the SGP is related to structural imbalances. This adds a new element to the SGP that has so far been focused on the fiscal area: the so-called “excessive imbalance procedure (EIP)”. The Commission’s proposal envisions a stronger focus on economic indicators. If the Commission states that the member state shows a severe imbalance, the European Council can launch an EIP. If a country fails to comply with the Council’s recommendations, a fine can be levied expressed in a percentage of the country’s GDP.

In addition to the new regulations to be incorporated into a reformed SGP, intensified fiscal policy coordination and surveillance of possible economic imbalances is to be reached through a so-called “European Semester”. The process has already been implemented as of 1 January 2011. The aim is to achieve a higher degree of policy coordination among the member states. As the EU governments have to present their budgets to the European Commission prior to budgetary negotiations in the national parliaments. The governments are expected to submit the policy recommendations from the EU level together with the draft budget to the national parliaments.

According to the decisions of the European Council (2010) in Brussels in December 2010, a European Stability Mechanism (ESM) will be established that provides financial assistance to euro area countries under strict

conditionality. The ESM will replace the EFSM and the EFSF which will expire 2013. Similar to the current mechanism, the European Commission and the International Monetary Fund in cooperation with the European Central Bank will analyze the debt sustainability of the respective country and the latter will be required to implement a strict economic and fiscal adjustment program. This will serve as a precondition for assistance under the ESM which requires a unanimous decision of the Eurogroup ministers. “The ESM will complement the new framework of reinforced economic governance, aiming at an effective and rigorous economic surveillance, which will focus on prevention and will substantially reduce the probability of a crisis arising in the future” (European Council 2010).

In order to establish a permanent mechanism Article 136 of the TFEU has to be amended. A third paragraph will be inserted that foresees the establishment of a stability mechanism “to be activated if indispensable to safeguard the stability of the euro area as a whole”. The financial assistance provided under the mechanism will be subject to strict conditionality. Moreover, to enable a case by case participation of private sector creditors, the European Council decided in December 2010 that for sovereign bonds being issued from June 2013 onwards, all euro area governments will have to include standardized and identical collective action clauses (CACs) into the terms and conditions. Table 2 summarizes the features of the emergency mechanism from May 2010 and the proposed permanent mechanism that is expected to become effective as of 2013.

Table 2. Synopsis of EU Policy Response to the Debt Crisis		
	Immediate Emergency Rescue Package (May 2010)	Proposal for Crisis Prevention Mechanism (Dec 2010)
Institutional Setup	<ul style="list-style-type: none"> • European Financial Stabilization Mechanism (EFSM): up to € 60 bn • European Financial Stabilization Facility (EFSF): up to € 440 bn • International Monetary Fund (IMF): up to € 250 bn 	<ul style="list-style-type: none"> • European Stabilization Mechanism (ESM) • International Monetary Fund (IMF) (volumes to be determined) • reform of the Stability and Growth Pact • increased cooperation through “European Semester”
Timeframe	<ul style="list-style-type: none"> • temporary • until June 2013 (EFSF only, EFSM does not have an explicit time limit) 	<ul style="list-style-type: none"> • permanent, starting in 2013 • to be evaluated in 2016 by European Commission, in liaison with ECB
Conditionality	<ul style="list-style-type: none"> • strict conditionality • stringent economic and fiscal adjustment program required • debt sustainability analysis by European Commission und IMF, in liaison with ECB 	
Private Sector Involvement	no	<ul style="list-style-type: none"> • case by case participation of private sector creditors • standardized collective action clauses

Some features of the new economic governance concept will focus on preventive measures and might strengthen economic cooperation. However, the basic flaw of the SGP will not be eliminated. The experience of the past twelve years has been unambiguously shown that the preventive arm of the SGP did not function properly to avoid the occurrence of a debt crisis. Will the reformed Pact be able to reduce the probability of a crisis? As the proposed establishment of a permanent European Stability Mechanism will provide financial support in case of unsustainable public finances, the opposite might actually be true. Instead of reducing the probability of debt crises within the euro area, one can expect less fiscal discipline because the national governments know that financial support from the ESM will be available – albeit on based under strict conditionality – if access to the financial markets is hampered. Therefore, the proposed reform might actually increase, not reduce the likelihood of crisis occurrences. The next section argues that instead of reforming the SGP and implementing a financial safety net the creation of hard budget constraints might be the more promising way to discipline national fiscal policy makers.

Long-Term Crisis Prevention – An Opposing View

The view that international confidence in the euro would have plummeted without the rescue package could be turned around in arguing the confidence could have been strengthened by allowing a country to default on its debt, thereby, showing commitment in sticking to the rules instead of honoring misbehavior. Has there really been no alternative to the bail-out of Greece?

During the crisis months in early 2010, some economists proposed the country should either withdraw from the euro area or, alternatively, should be expelled from membership. The latter is not a viable option, because the Treaty does not contain a legal basis for this alternative. However, even the first option – a voluntary withdrawal – might not be promising. From a legal perspective, the treaty (version of Lisbon Treaty) does – for the first time in the history of the EU – explicitly contain a provision in this regard. Article 50 of the Treaty stipulates that a country can withdraw from the EU – but not from EMU only (Athanassiou 2010). However, from a political perspective, the more relevant question to pose is what the benefits of leaving the euro area are. Two perspectives have to be taken into account. On the one hand, the countries staying within EMU might benefit because the weak candidate has left and will not impact negatively on the reputation of the currency area anymore or the development of the euro. However, reputation might be lost because the European Union's objective to achieve a higher level of integration and political harmonization experience a setback.

What does a country win in withdrawing from the euro area from an economic standpoint? The monetary policy has been conducted successfully by the ECB. It can be questioned whether a re-nationalized monetary policy will be more credible. If, however, it is intended to be used for increasing the inflation tax, the costs may be high, and persistently high inflation expectations will complicate the monetary policy stance. With regard to exchange rate policy, a new national currency has to be re-introduced. This will require high one time costs. Moreover, the expected devaluation will lead to a significant increase of debt servicing costs on euro denominated debt. In addition, Barrios et al. (2010) do not find evidence for exchange rate policy to enhance the success of fiscal consolidation. The effect of a depreciated nominal exchange rate appears to be low and insignificant..

While withdrawal from EMU is not a viable option, some economists argued that it would have been the better approach to have Greece default on its debt obligations and allow it to restructure its debt. Buiter and Rahbari (2010) argue that even despite the rescue package Greece will have to restructure its debt obligations sooner or later. The country might have bought time. However, the financial fundamentals are so bad that a restructuring – be it in form of a haircut, maturity extension, or other measures – cannot be prevented.

While the European Commission argues that market discipline is not effective because private markets react with delay and may show excessive reactions (Rehn 2010), this paper takes the opposite view. Inevitably, policy action faces the problem of moral hazard that cannot be overcome. If a member state can expect to receive financial aid as demonstrated by the precedent-setting cases of Greece and Ireland, and as envisioned by the establishment of a permanent crisis mechanism, it will speculate on receiving foreign support instead having to implement harsh economic adjustment programs. One could argue that the financial support is subject to strict conditionality and, therefore, national governments will try to avoid recourse to this “lending of last resort” provided by the European Union. However, as fiscal adjustments always hurt, it could also be seen as an advantage to have a foreign, here: European scapegoat that can be blamed for the implementation of rigorous reforms. “We don't want a system which [...] creates moral hazard and induces countries to embark on loose policies in the expectation that they would be bailed out.” (Smaghi 2010).

As documented in this paper, the Stability and Growth Pact has neither functioned properly during the first calm decade of the euro's existence nor during the recent dramatic crisis years. Although sovereign spreads have been at historically low levels for most of the time during the first twelve years of the euro area and economic developments have been quite favorable for most member states, they did not sufficiently work on fiscal reform. Sanctions have never been imposed. On the contrary, the country that has never fulfilled the fiscal criteria of the SGP was not punished for inappropriate policy stances but will receive financial support over the next three years in a coordinated attempt from the EU and the IMF amounting to approx. 50 % of its GDP (Greek GDP equals ca. € 230 bn).

Instead of trying to refine the Stability and Growth Pact and establishing new rules of financial support to euro area countries in financial turmoil, the European Union should focus on creating a regulatory framework which allows the financial sector to exert its disciplinary pressure. Upon successful implementation, country defaults – at least for the smaller euro area member states – can become a realistic scenario representing a credible incentive for the consolidation of public finances. The effect of incentive creation will actually be two-fold: Not only the

governments will be disciplined because of the credible default risk without bail-out, but private investors will also have to consider the realistic possibility of default. The comeback of sovereign spread differentiation represented in figure 2 should not be viewed as an unfortunate development but as an encouraging trend towards more realistic perception of sovereign default risk by international investors. Market discipline seems to be the only viable sanction mechanism to prevent excessive fiscal deficits.

Does that mean that a strengthening of fiscal policy coordination at the European level is obsolete? The direction in which the EU Commission's proposals for reform of the SGP and the European Semester are pointing are the timing of the procedure and the level of commitment of the member states. Both aspects are certainly welcome attempts to improve the policy coordination within the euro area. Harmonized and coordinated fiscal policy is a goal that should be pursued by the national government. However, the focus should be on implementation of a credible sanction mechanism outside of the political bargaining process.

Conclusion

EMU was established 12 years ago. It has worked reasonably well during this period although, admittedly, a decade is a relatively short episode for a currency regime to be in existence. For two reasons, a robust solution for fiscal policy within the euro area is of utmost importance. First, with debt dynamics shown in table 1 the majority of countries will experience rising debt servicing costs over the next couple of years. A lot will depend on growth outlook. A more favorable economic growth performance in the EU and worldwide might benefit the EU countries. However, if growth remains subdued the situation will aggravate and consolidation will be impeded. Second, in the coming decades, the demographic change will exert a significant budgetary impact on public finances in the EU. It will be an additional challenge for the long-term sustainability of public finances. Structural reform measures, e.g. in healthcare and pension schemes, are required to cope with the challenges of aging populations (European Commission 2007).

The EU proposals basically reflect adjustments of the Stability and Growth Pact and an attempt to strengthen economic governance within the EU. However, recent history has shown that despite the reform of the pact it has not been successful as it lacks an automatic mechanism that sets in early enough to be preventive and avoid a new debt crisis. Politicians will not give up their discretionary power. Moreover, even if there were an automatic mechanism, it could be questioned that politicians refrain from excusing the next country breaching the thresholds because of exceptional circumstances. From a political science perspective it might even be argued that it is not desirable within a democracy for politicians to give up the power of making political decisions.

The countries will only embark on a more financially sound path when there is a credible threat. On the one hand, the government will have to conduct their fiscal policy in a sustainable way when they cannot expect to be bailed out. With the option to be bailed out there will be an incentive to continue lax fiscal policy. On the other hand, if the creditors perceive the insolvency as a realistic possibility they will react by demanding higher risk premia. The creditors will monitor the developments more closely because they face the risk of being confronted with non-payment under this scheme. If instead they can expect the EU – or an EU institution in the form of the ESM – to step in and bail out the member state, the incentive will be lower.

The paper concludes that the Euro area debt crisis in 2010 has put the European Union at the crossroads. It can either continue to overemphasize political governance in coordinating fiscal policy and avoiding excessive deficits although it will not be able to establish enforceable rules because of the moral hazard problem. Or, alternatively, the political authorities can recollect the disciplinary and incentive setting functions of competition within a capitalistic economic system to strengthen the market forces.

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Managing Intellectual Property. The pricing in compulsory License

Research-in-Progress

Pablo Ianello

Instituto ESEADE

Abstract

Intellectual property rights (IPR) are an essential tool to ensure access to medicines in developing countries. The issue has been addressed by the TRIPS Agreement and the Doha Ministerial Declaration, which contain a number of interpretation of complex legal instruments that must be addressed as a whole not to generate an interference of the rights of any of the players involved. One of these instruments is "the compulsory licenses mechanism, contained under Article 31 of TRIPS.

1. Introduction

Continuous innovations regarding the management of companies dedicated to research and development, especially those related to the development of essential medicines for the treatment of chronic diseases, confirm the global need for tools that protect the industrial property systems and that result in harmonization with the different interests at stake.

Intellectual property rights (IPR) are an essential tool to ensure access to medicines in developing countries.⁴⁹ The issue has been addressed by the TRIPS Agreement and the Doha Ministerial Declaration, which both contain a large amount of complex legal instruments that must be interpreted as a whole in order not to generate infringement of the rights of any party involved. Amongst these tools are "compulsory licenses", described under the Article 31 of the TRIPS Agreement⁵⁰.

However, the indiscriminate use of compulsory licensing system may impose future costs on the research level for these types of medication, should the adequate compensation allowed by this legal system not be granted. This paper aims to present a review of compulsory licensing, focusing mainly on the issue of compensation, reviewing some of the existing alternatives.

The paper is organized as follows: in the first section we will review the phenomenon of compulsory licensing in relation to the issue of essential medicines; then we will explain its legal status and the justification of rules on appropriate remuneration; then finally review various mechanisms for determining the compensation on compulsory licensing.

49 Reichman, Jerome, "Procuring Essential Medicines under the Amended Trips Provisions," available at: www.law.fsu.edu/gpc2007/.../PROCURINGESSENTIALMEDICINES.pdf

50 http://www.wto.org/spanish/docs_s/legal_s/27-trips_04c_s.htm # 5

2. Compulsory licensing of essential medicines: Status of the issue

While the patent system raises a lot of arguments, one could admit that there is some kind of consensus that one of its objectives is to create sufficient incentives to ensure an ongoing inventiveness.⁵¹ It was explained that the incentives for innovation are based on: i) the costs of innovation and invention; ii) the risks; iii) the awards granted for the invention and; iv) the rate of imitation.⁵²

The courts have used these criterias to justify the constitutional validity of patents and copyrights.⁵³ To this end, countries have developed systems that aim to secure exclusive rights holder of a patent for a certain period of time, leading to the creation of a legal monopoly on the invention, given the characteristics of public good that the inventive processes.

On a global scale, the system of protection of industrial property rights was receptive to the Agreement on Trade-Related Aspects of Intellectual Property (TRIPS) concluded under the GATT's Uruguay Round. This agreement contains a number of provisions that establish certain standards of protection that are to be adopted by ratifying states, among which include the inventor's exclusive right stated in the Article 27 of the treaty.

However, the treaty provides for certain limitations on property rights through a compulsory licensing mechanism. The same has been used in the last decade by developing countries to limit the property rights of pharmaceutical companies engaged in the production of so-called "essential medicines", with the intention of guaranteeing a right to health of the residents of those countries. Drugs are considered to be essential when they meet the needs of health care priorities of the population. The selection of the drugs is accomplished according to the prevalence of the diseases, their safety, effectiveness and comparative cost-effectiveness.⁵⁴ They are fundamental, essential and necessary for such purposes. These drugs should always be available to the population, in appropriate doses, containing the quality and necessary information.⁵⁵

To understand the different positions of the discussion, one must start with the traditional analysis of compulsory licensing in developed countries and then understand the differences in the debate on technology transfer from north to south. Compulsory licenses between developed countries are challenged to generate both a positive externality for the country imposing it, as the price reduction that occurs involves a reallocation of research costs in other developed nations. In other words, the developed country that imposes a compulsory license does not "pay" its

51 For various economic justifications of the patent system see: William Landes - Richard Posner, *The Economic Structure of Intellectual Property Law* ", Harvard University Press, 2003. You can also find a good justification in Cooter and Ulen "Law and Economics", FCE, 2001, Chapter V. 1) b), and finally a more modern in Shapiro, Carl and Lemley, Mark, "Probabilistics Patents", John Olin Law and Economics Ceter of Stanford Law School, Working Paper No. 288, 2004.

52 Scherer, F. M., "The Economic Effects of compulsory patent licensing 14 (1977), Colleen Chien," *Cheap Drugs at What Price to Innovation: Does hurts compulsory licensing of pharmaceutical innovation* ", *Berkeley Technology Law Journal* Vol 18. 853.

53 The United States' Supreme Court decision in *Mazer v. Stein* said: "TThe economic philosophy behind the clause empowering Congress to grant patents and copyrights is the conviction that encouragement of individual effort by personal gain is the best way to advance public welfare through the talents of authors and inventors" 347 U.S.. 201 (1954).

54 The drugs on the WHO Model List of Essential Medicines are selected taking into account the prevalence of diseases and their safety, effectiveness and comparative cost-effectiveness. As the cost of the drugs change over time, the price of drugs is not a reason to exclude it from the WHO Model List if it meets all other screening criteria. Comparisons of cost-effective alternative drugs are made within the same therapeutic group. Requests for inclusion, change or deletion of drugs from the Model List was presented to the Secretary of the Expert Committee on the Selection and Use of Essential Medicines. This Committee is responsible for examining the data provided in the applications and decides whether to include or suppress a drug. The Expert Committee also identifies knowledge gaps and makes recommendations for future medicines research that may be needed to treat priority health problems. We examine the possibility of removing a product from the WHO Model List when there are questions about its relevance to public health and / or efficacy, safety or cost-effectiveness compared to other medications available to treat the same condition.

Information may be found on: <http://www.who.int/mediacentre/factsheets/fs325/es/index.html>

55 This is the definition referred to by the World Health Organization. Available at [www.who.int / medicines](http://www.who.int/medicines).

shares in the innovation process by generating distortions in international trade, as it creates barriers to IP protection in other members of the innovation process.⁵⁶

However, in the context of developing countries and underdeveloped countries the issue is more complicated: as the amount of technology to protect is generally lower, the incentives are usually focused on on the way to capture technology developed and not at how to protect the existing technology.⁵⁷ Imitation costs are being substantially lower than the costs of research.⁵⁸ The least developed countries are subject to external provision of medicines or to be dependant on donations from developed countries or NGOs. Moreover, compulsory licenses are often considered as the only existing mechanism that deals with emergencies in public health in these countries, given the lack of a health network or other alternative mechanism that could help to address a health crisis.

It is possible that compulsory licensing would have a cost in the rate of global innovation on essential medicines that would affect the entire community, however the likelihood of this decline is generally perceived to be lower in relation to the likelihood of facing the costs of mitigating a health crisis for public policy makers, while the benefits are usually received more immediate. Thus, compulsory licensing ensures a transfer of costs to a future scenario, with a rate of interest (here a the rate of innovation) uncertain and whose cost would be borne by all the players in the international arena.

Add to that that such mechanisms do not ensure proper access to medicines, while ensuring the same should be taken into account factors such as availability, accessibility, acceptability and quality.⁵⁹

However, we may note the increased tendency in the law few years for less developed countries to implement these policies because they generate a rapid decline in prices of drugs, shifting costs to future scenarios.

3. Legal framework for compulsory licensing and the need for adequate remuneration

The TRIPS agreement at the Article 31 b) provides that "*such use may only be permitted if, prior to such use, the proposed user has made efforts to obtain authorization from the right holder on reasonable commercial terms and conditions and that such efforts have not been successful within a reasonable period of time. This requirement may be waived by a Member in the case of a national emergency or other circumstances of extreme urgency or in cases of public non-commercial use.*"⁶⁰

The language of the article is vague it does not establish any mechanism that leads to a concept of national emergency. For this reason the article was subject to interpretation and some regulation in the last ministerial round, known as the Doha Round. The public health statement given in Doha was the result of some previous events and politics of South Africa on drugs or conflict that occurred when Brazil generated a request to the dispute settlement body of the WTO.⁶¹

56 Borowsky, Mark Samuel, "saving today from tomorrow," Preserving Innovation in the face of compulsory licensing ", Florida State University Law Review, 2009, Vol 36, 275.

57 Borowsky, Mark Samuel, op. cit., p. 279.

58 Grabowsky, Henry, "Patents Innovation and Access to New Pharmaceuticals", Journal of International Economic Law (2002), 849 -851.

59 For a description of each of these concepts, see: Smith, Alyna, "Intellectual Property Rights and the Right to Health: Considering the case of Access to medicines, in Lenks - Hope & Andorno," Ethics and Law of Intellectual Property "Ashgate UK, 2009.

60 Available at: http://www.wto.org/spanish/thewto_s/minist_s/min01_s/mindecl_trips_s.htm last visited by 14/06/2010.

61 For an explanation of the background finished the Doha Declaration and the positions represented in the same see: Sun, Haochen, "The Road and Beyond: Some Reflections on the TRIPS Agreement and Public Health" Ejila 15 (2004), pp 123 to 151.

The Doha Declaration recognizes the importance of intellectual property rights. Thus, we read: "We recognize that intellectual property protection is important for the development of new medicines. We also recognize the concerns about its effects on prices." At this meeting, it was also held that: "the TRIPS Agreement does not and should not prevent members from taking measures to protect public health. Accordingly, while reiterating our commitment to the TRIPS Agreement, we affirm that the Agreement can and should be interpreted and implemented in a manner supportive of WTO members' right to protect public health and, in particular, to promote access to medicines for all."⁶²

The proper balance of this statement indicates that intellectual property protection is necessary. This is consistent with the need to maintain incentives in order not to affect the innovation level. On the other hand, concerns about the prices seem to indicate that the problem lies in the distribution of the innovation costs.⁶³

In the area of essential drugs, some authors call the Doha Ministerial Declaration a Health Waiver Flexibility, which should allow the development of a pharmaceutical company which would aim to facilitate access to essential medicines for countries able to achieve that goal.⁶⁴ While it may be true that the Doha Declaration clarified some points of interpretation of compulsory licensing regarding health issues, the implementation mechanisms of the system are still unclear when trying to determine the scope of the flexibilities granted. The discretion resulting from the vagueness of the terms of the Doha Declaration on Public Health has been stressed. On the one hand, under item 5 is read in section b): "Each Member has the right to grant compulsory licences and the freedom to

determine the grounds upon which such licences are granted. Also, point c) states that: "Each Member has the right to determine what constitutes a national emergency or other circumstances of extreme urgency, it being understood that public health crises, including those relating to HIV/AIDS, tuberculosis, malaria and other epidemics, can represent a national emergency or other circumstances of extreme urgency."

It is obvious that the conditions under which compulsory licenses could proceed are unilateral. This vagueness implies a highly uncertain scenario for those involved in pharmaceutical research-intensive projects that will need to discount the probability of occurrence of such events when making their investment plans.⁶⁵

It was also mentioned that the Declaration itself contains some indications that could serve as constraints for compulsory licensing. In relation to the scope of IPRs, it was established that the TRIPS agreement is a solution to public health issues that can only be understood as part of a larger action plan to tackle these problems.⁶⁶

Notwithstanding the vagueness included in the international documents and the interpretive criteria that could be applied to them, we will consider this discussion irrelevant here for the sole purpose of limiting the object of study.

Leaving aside questions about the scope of the rules, it is noteworthy that the imposition of compulsory licenses has frequently been used by the movements of human rights defenders in order to ensure observance of the right to health. Many of the arguments presented in this sense does not distinguish between the analysis of the issue and strategy⁶⁷: while the former refers to the comprehensive study of the phenomenon studied, the second seeks to define the feasibility of public policies necessary to solve the problem. If the phenomenon of compulsory licensing is considered solely from the perspective of the analysis, the risk of falling into utopian solutions that, for the inaccessibility, would create a state of continuous violation of the right to health or property.

To avoid unaffordable proposals, it is crucial to find concrete development criteria that seek the harmonization of property whose legal protection was granted. Thus, any compensation due to those who have invested in research

62 Available at: http://www.wto.org/spanish/thewto_s/minist_s/min01_s/mindecl_trips_s.htm. Last visited 14/6/2010.

63 Vidaureta, William "The Doha agenda on intellectual property rights: a retrospective analysis and pending agenda for Hong Kong 2005, Cuadernos de Derechos Intelectuales, N°2 Ed. Ad Hoc Buenos Aires pp 198.

64 Anderson, Horace, "We can work it out compulsory Licensing Co-Op ..." Draft 15/2/2010. Available at www.ssrn.com

65 http://www.wto.org/spanish/thewto_s/minist_s/min01_s/mindecl_trips_s.htm last visited on July 28, 2010.

66 On this see paragraph 2 of the Doha Declaration: Correa, Carlos, "Impact of the Doha Declaration on TRIPS and Public Health - Series" Health Economics and Drugs No. 12, available at <http://apps.who.int/medicinedocs/en/d/Js4904s/7.html#Js4904s.7> last visited

67 Farmer, Paul, "Pathologies of Power: Rethinking Health and Human Rights", American Journal of Public Health, Oct. 1999, Vol 89, No. 10, p. 1486

would seem to be appropriate and realistic elements to achieve that goal, having designed mechanisms for determining them. It is prudent to note that although the legal texts indicate that the compensation should be determined case by case, which is adequate to prevent agents from adopting strategies sub-optimal from a cooperation point of view⁶⁸, it does not follow the one-sidedness, or arbitrariness in its quantification.

The existence of adequate remuneration can serve as a standard to limit the indiscriminate use of compulsory licensing, which requires predictable procedures for its determination.⁶⁹ Specifically if one takes into account the institutional myopia with which those designing public policies in developing countries often operate.

Combining the TRIPS agreement with the Doha declaration on public health doubtlessly poses a major challenge for all parties involved: while the first one calls for granting adequate compensation in terms of economic value of the authorization, the second seeks to create means to facilitate access to medicines.⁷⁰ Some kind of justification should be attempted on this point, even if only intuitively, in terms of efficiency: The "Kaldor - Hicks' criterion claims that an allocation is efficient when the benefits outweigh the costs and when the one who bears the cost is at least hypothetically compensated.⁷¹ This could be applied to the case study. shows that there is no doubt that the disregard of property rights of a patentee imposes a cost on its production function. This cost, however, seems to generate an improvement in terms of access to medicines to treat diseases, and consequently a clear benefit to companies affected. Adequate compensation to the one who bears the cost would here be the above hypothetical compensation. Although this approach is criticized⁷², especially when considering the existence of external preferences, it can be a guidance to justify the need for compensation.

There was also an attempt to develop tests to determine a case-by-case appropriateness of applying a compulsory license. A first proposal comes from the theory of social choice: there to determine the benefit of the policy, it is assumed that those who bear the cost of a public decision are not able to "bribe" to those who enjoy the benefits. Another attempt coming from the application of the Hand rule to the case study.

4. Compensation granted in some existing cases

Before introducing a very brief description of the compensation paid to existing cases, we should clarify that the analysis necessarily assume that this type of unilateral action exist and is applied. In other words, at this level of discussion, the existence of compulsory licenses is assumed and the advantages or disadvantages of this type of tool isn't discussed.

a. Compensation criteria based on the "eminent domain theory" in American law

In the United States, the section 28, 1498 of the USC states that the federal government does not need not obtain authorization for the use of a patent or copyright, since the owner is automatically entitled to compensation based on the provisions of the Fifth Amendment of the American Constitution. Thus, the use of the patent is seen as an extension of the theory of eminent domain. The guidelines for determining the royalty due as compensation were established in the previous *Georgia-Pacific Corp. v. U.S. Plywood-Champion Papers*, in which 15 points were

68 This is as if the players could deduct before paying for adequate compensation. If the payment of the same was higher than expected in a private negotiation, they would prefer the former to the latter.

69 Borowsky, Mark Samuel, op. cit., p. 300.

70 Love, James "Remuneration Guidelines for Non Voluntary use of patent on medical technologies, World Health Organization, 2005.

71 A good description of the criterion of Kaldor - Hicks and problems posed by Scitovsky consistency can be found in Fellmand, Allan - Serrano, Roberto, *Welfare Economics and Social Choice Theory*, Springer, 2004

72 Might it be considered that the use of cardinal utility functions have problems of aggregation, on the other side (this being an issue of particular importance in the subject matter hereof), there are problems of inconsistency shown by Scitovsky.

established to determine the extent of the compensation due.⁷³ Amongst the guidelines to consider when determining a reasonable royalty, the following may be mentioned: the profit margin attributable to the patented invention, the advantages that the new product shows compared with the previous, the comparison with existing license agreements in similar products. The criteria laid down in *Georgia Pacific* has been transformed over time and in some cases taken away from the original guidelines.⁷⁴

This approach involves implementing a royalty system in two parts: first creating a royalty base, and second creating a royalty rate applying to the former.⁷⁵ Under the TRIPS agreement, under the assumption of a compulsory license, this means taking into account the economic value of the patent. However, in the case of long-term licenses or where there is no assurance that the royalty to the inventors will be adequately compensated for their investment, the issue of valuation of the intangible must necessarily be addressed.

b. The Canadian experience and the non-voluntary licensing of patented inventions

A good summary of the Canadian perspective on compulsory licensing and appropriate compensation for them can be seen in the "*Frank Horner v. Hoffmann - La Roche*" in which was established a system of royalty of 4%, while it expressly mention the duty of the commissioner of patents to ensure access of drugs to the public at the lowest possible price. As for the amount to award compensation, provides that no person should be take into account such factors as the cost of obtaining and maintaining the acceptance of the drug, or return on investment in research and promotion, but instead the compensatory royalty shall be an amount creates incentives for continued research, as well as the importance of the drug.⁷⁶

The Court of Canada, in an appeal by the defendants, said that due compensation is not equivalent to damages for the infringement.⁷⁷ This line of development ruling was set aside by Canada after the signature of the NAFTA. However, this policy was taken as a framework for recommendations generated by international agencies.⁷⁸

73 The aforementioned precedent establishes various points on which to base the royalty in the case of licensing. Available vlex.com/vid/pacific-corporation-s-plywood-champion-papers-37630908

74 For a description Bensen, Eric E. and White, Danielle M., "Using Apportionment to Rein in the Georgia-Pacific Factors" (April 2007). Available at: <http://ssrn.com/abstract=982897>

75 *ITT Corp. v. United States*, 17 Fed Cl 199, 240.

76 The law in Canada differs from that applicable in England under the corresponding section of the Patent Act. The Canadian law does not give the patentee any guarantee that it shall derive a reasonable advantage from its patent rights. In Canada the Commissioner must have regard to the desirability of making medicine available to the public at the lowest possible price consistent with giving the patentee due reward for the research leading to the invention. The Commissioner is not required to take into consideration such elements as the cost of obtaining and maintaining medical acceptance of the drug or a return on the capital employed in research and promotion. The royalty should take into account that it should be commensurate with an amount that will maintain research incentive and will reflect the importance of the medicine. "The full ruling is available at www.cptech.org/.../canada/horner-v-hoffroche.html last visited on July 22, 2010.

77 *Hoffmann-La Roche Ltd. v. Frank W. Horner Ltd.*, Attorney-General Of Canada, Intervenant: "The submission of the appellant as to royalty springs from a misunderstanding of what a patentee is entitled to by way of remuneration on the grant of a license under s. 41(4) of the Act. A patentee, of a patent subject to license under the section, does not have an unassailable complete monopoly right. Being subject to a license in favor of anyone who can comply with the section is not a monopoly upon which a massive commercial enterprise may be built and afforded protection. The area of protection available for an invention falling under the section is considerably less than is obtainable for other inventions. The compensation to be paid to a patentee under the section is a reasonable sum for the value of the use of an invention having some intrinsic value. It is the advantage that the medicine being licensed has over known medicines and a known way of making them, that more than anything else, is the basis for assessing an amount to be paid as royalty. The compensation upon the privilege of competing with the patentee and diversion to the licensee business of which the patentee might otherwise have had a monopoly. The compensation is not equivalent to damages for infringement nor the profits which the licensee may make through the use of the invention. It is not compensation for the interference with the business of the patentee if left with the market to himself. In fixing compensation, the Commissioner must ensure that the royalty will be consistent with the maintenance of research incentive and the importance of both the substance and the process. These are considerations to be borne in mind by the Commissioner when weighing the other facts before him as to the value of the use to be made by the licensee of the invention. The matter cannot be looked upon or calculated arithmetically. The matter or not can be Looked upon Calculated arithmetically. The full ruling is available at <http://www.cptech.org/ip/health/c/canada/horner-appeal.html> last visited on July 22, 2010.

Canada was the first country to reform its patent law to suit the purposes of implementing paragraph 6 of the Doha Declaration on Public Health, known as the "Bill C-9" for the application of Article 31 of the TRIPS agreement. The Canadian government has issued a set of parameters for the establishment of royalties policies in the case of compulsory licensing under the current legislation, the main factors are the following: a) The humanitarian, non-commercial reasons that prompted the license b) the economic value of the invention to the WTO country member. Current regulations propose a scale of royalties ranging from 0.2 to 4%.⁷⁹

c. The Brazilian case

It is worth mentioning the case of compulsory license imposed by the government of Brazil on Merck in relation to their Efavirenz antiretroviral. This compulsory licensing was part of the Brazilian policy to combat HIV, part of its universal treatment plan to combat the disease.⁸⁰ According to the Brazilian government, compulsory licensing was enacted after the failure of a series of negotiations that began in 2007 with Merck.⁸¹ In regard to compensation to the patentee, the document reports that, in light other cases of compulsory licensing, the royalty payments are set at 1.5%.

In Brazil, it should be noted that compulsory licensing was a response to differential pricing policies⁸² proposed by the lab, deemed insufficient by the state authorities.

d. The case of Ecuador and the "tired royalty method"

In April 2010, the government of Ecuador decreed for the first time a compulsory license on the retroviral Ritonavir, patented by Abbott Laboratories, to combat HIV. This emerging from the decree signed in October 2009 which authorized the use of such tools.⁸³

An interesting point, it is that the compensation granted to the laboratory was applied with the method known as "Tired Royalty Method." According to this criterion, the basis to consider while setting the compensation is the selling price in a developed country, which is then adjusted to the income per capita income of the country issuing the compulsory licence, or on the per capita income of people suffering from the disease in that country. This approach shows, according to some literature, the advantage of mitigating the costs to be shared by countries in the process of research and development.⁸⁴

78 To further compulsory licensing system in Canada and their subsequent impact see: Jerome Reichman - Hazensahl Katherine "Non Voluntary licensing of patented invention: the Canadian experience" available at http://www.iprsonline.org/unctadictsd/docs/reichman_hasenzahl_Canada.pdf

79 The Canada Gazette, available in the <http://www.gazette.gc.ca/archives/p1/2004/2004-10-02/html/reg9-eng.html>.

80 The universal scope of treatment was prescribed by law N °. 9313, 13 November 1996.

81 The Brazilian health ministry has issued a document which gives an account of the government's position, including its foundations in failure of the negotiations. The declaration of public interest was made by the decree 886/2007. Merck's position is available on: http://portal.saude.gov.br/portal/arquivos/pdf/anti_retroviral_efavirenz.pdf

82 The differential pricing policy is basically to sell the medicine according to the country taking into account the purchasing power of it, considering their level of economic growth.

83 <http://www.ip-watch.org/weblog/2010/04/22/ecuador-grants-first-compulsory-licence-for-hiv-aids-drug/>

84 Loves, James, op. cit.

*e. Royalty policies in other countries*⁸⁵

e.1. Philippines

The decree of 1977, amended by the Decree 1263, establishing a fast track system for compulsory licensing in the event in a case where the products are to be declared of vital importance to the country on an economic or public health matter. It establishes a ceiling of 5% for royalties on the public retail price.⁸⁶

There are a number of decisions that set the amount of compensation in a 2.5% royalty on net sales. In 1993, the "Agreement Kantor – Navarro" was signed, which established specific guidelines for compulsory licensing.⁸⁷ The Act No. 8293 which took effect in 1998, states in its article one hundred the criteria for the granting of compulsory licenses. Concretely, it states that compulsory licensing should be for a fixed period and that compensation is due to consider the economic value of the patent. It further establishes that the amount should be determined by the administrative authority.⁸⁸

e.2. Singapore

During the 1980, the compensation rate awarded by this country on compulsory licensing was of 5%. After negotiations for a bilateral trade agreement with the United States, some special clauses on compulsory licensing were included.⁸⁹ In regard to the policy of royalties, it has been considered reasonable compensation included in the treaty must be interpreted in the terms of the U.S. Statute 28 USC 1498.⁹⁰

e.3. Thailand

In the case of Thailand, the lack of prior negotiation required by Article 31 b) was discussed, which the authorities of the country considered expendable to be a license for noncommercial use. However, there were criticisms stating that the compulsory licensing system under the WTO rules were applicable only to developing countries, and Thailand proved to be a middle income country.⁹¹ In the case of antiretroviral drugs against HIV, it was settled a

85 The review of legislation of the countries mentioned in this section is an extract of the information contained in Loves, James, op. cit.

86 Love, James, op. cit.

87 Agreement signed between the U.S. and the Department of Commerce of the Philippines in 1963. A review of Philippine legislation on intellectual property is available in <http://www.chanrobles.com/legal7history.htm>

88 The patentee shall be paid adequate remuneration taking into account the economic value of the grant or authorization, except that in cases where the license was granted to remedy a practice which was determined after judicial or administrative process, to be anti-competitive, the need to correct the anti-competitive practice may be taken into account in fixing the amount of remuneration. (Sec. 35-B, R. A. No. 165a) A code version available intellectual property is in <http://www.chanrobles.com/legal7patents.htm> Philippines

89 Specifically, the treaty states that: "The Singapore FTA imposes restrictions on a country's authority to grant compulsory licenses to situations that are needed to remedy anti-trust violations, national emergencies or other circumstances of extreme urgency, and for public non-commercial use. With respect to cases of public non-commercial use or in the case of a national emergency or other circumstances of extreme urgency, the FTA specifies that such unauthorized use is to be limited to use by the government or third parties authorized by the government; that the patent owner is provided with reasonable and entire compensation for such use and manufacture; and that Singapore shall not require the patent owner to transfer undisclosed information or technical "know how" related to the patented invention that had been subjected to the involuntary use authorization". Available in [www.cptech.org / ip / health / c / singapore](http://www.cptech.org/ip/health/c/singapore)

90 James Love, op. cit., p. 32.

91 Brent Savoie, "Thailand Test: Compulsory Licensing in an Era of Epidemiologic Transition", Virginia Journal of International Law, Fall 2007, Vol 48. 211.

royalty of 0.5%. It is worth noting that the government decree ordering the compulsory license provided for a treatment of a maximum of 200,000 patients.⁹²

5. Other economic criterias to determine appropriate compensation

Even though this article does not come to review the existing economic fundamentals to support different types of compensatory mechanisms, it is interesting to make a very brief mention of some of them, and try to outline possible institutions from empirical data. A criterion was proposed by Professor Martin Adelman, who sketches a compensation scheme for lost profits of the patent holder when he maximizes his income. The model assumes the absence of parallel trade and does not apply in countries with too low-income, where the price reduction generated by this type of compensation only allows access to medicines to the population of greater resources. Loves James, op. cit.⁹³

Another focusses of the losses recovery based on the total market value, and establishes appropriate compensation based on losses, taking at least the total market value. To estimate the appropriate compensation under this approach would nullify the possibility of a reduction in price, while meaning an absolute exploitation of the patent holder.⁹⁴

Some studies based on the flexibility of the markets, will implement a compensation system based on a modification of the "Ramsey pricing system", generating a differentiated compensation design based on the elasticities of demand for drugs.⁹⁵ The development of such schemes are very aware of the peculiar structure of the pharmaceutical market in terms of innovation rates.⁹⁶

Also, the model comes from the experiences implemented by the United States and Canada, is constitute a serie of principles called "reasonable royalty approach, which is based on case by case analysis standards."⁹⁷

Without working against the approaches mentioned up to here, we will analyze some data available at the moment: on one hand there are studies showing that average royalty rates still range from 5% in cases of pre-clinical licenses, and 18%, for products already commercialized.⁹⁸ On the other hand, evidence for compulsory licenses granted indicates that the compensation obtained varies between 0% and 5%.

Taking into account that: a) the compulsory license is granted for a drug at the commercialization stage; b) the profit generated by the innovation is "non-rival", as long as the consumption of the discovery by an agent does not affect the level of consumption by another, and c) the price in the commercial-stage charges the opportunity cost of investing in less risky assets, the compensation for compulsory licenses imposes a positive externality for the issuing country, who does not pay the cost of risk in innovation. Added to this is that from the position of the innovator, as a result of the lack of information, the likelihood that the country plays an expropriation strategy is often uncertain. On the other hand, it is difficult to define if the cost is absorbed are being reassigned to more developed countries or simply delayed in time generating the highly increasing interest rate that is required to decide to invest in innovation.

Finally, it is important to note that the ambiguity of legal texts is one of the sources of misleading information problems. A clear example is the lack of definition on the concept of "emergency" contained in the Article 31 of

92 The provision granting the compulsory licensing is available at <http://www.cptech.org/ip/health/c/thailand/thaicl4efavirenz.html>

93 Loves James, op. cit.

94 Frederic Scherer - Jayashree Watal, "Post-TRIPS options to access to patented medicines in Developing Nations" *Journal of International Economic Law* 913, 921 (2002)

95 Danzon, Patricia - Towse, Adrian, "Differential Pricing for Pharmaceuticals: Reconciling Access, R & D and patents", *International Journal of Health Care Finance and Economics*, 3 183-205.2003

96 Emmanuel Combe - Pfster Etienne, "accès aux médicaments et brevets dans les pays en développement", *Revue Française d'Economie*, Vol 19, No. 2, pp. 89-119.

97 Sherry Edward - Tece David, "Royalties, Evolving patent rights, and the value of innovation Research Policy, Volume 33, Issue 2, March 2004, pp. 179-191.

98 <http://www.lesi.org/publicfiles/2008BioPharmaceuticalRoyaltyRateDealTerms.pdf>

TRIPS, which is interpreted unilaterally by the country granting the license. This is type of conduct is a clear sign to investors in research and development, who discount in futures movements of a repeated game the cost of new developments.

6. Conclusion

Innovation and research in the field of essential medicines are key factors to ensure the possibility of a sustained treatment in chronic diseases, this problem cannot be addressed in detriment of attention to those who suffer. However, intellectual property rights are not the only factor taken into account to achieve an effective health policy. It should not be forgotten that a mistaken policy regarding the necessary elements to design adequate access to health can cause in the mean time, much more costs than benefits. From this perspective, it shall be considered that the compulsory licensing implies a lack of ownership of the patent holder, and their availability may generate unwanted costs in the medium term. Adequate compensation under international instruments is an essential tool to lessen the distorting effects of compulsory licensing, especially if one takes into account the effects on levels of innovation by the widespread use of this instrument are still uncertain.⁹⁹ In turn, this would lead to a harmonization between IPR holders and the right to health of the inhabitants of developing countries and underdeveloped countries.

Also, even when there exists a range of royalties to which compulsory licenses have been granted at the time, the justification for granting compensation is not entirely clear, generating a wide margin of discretion to the permitting authority. The development of models that allow to visualize the effects of the royalty provided for, as well as the basis on which these are to be estimated, may be elements that help to justify the amounts granted, thus ensuring compliance with the rule of law. This is why we can't claim that a mechanism that affects not only the right to property, but also the distribution of costs assumed by each of those who benefit from research and development, may results into to great risks for the basic principles of rule of law.

This paper only fills a descriptive function, leaving the question pending regarding regulatory aspects of the topic for future research. These include the harmonization of property rights vis-à-vis the right to health, the legality of the compensation in accordance to the standards of the rule of law, the efficiency analysis of compensation schemes granted, and these being only some of the points to be addressed for a deeper analysis of the issue.

99 Emmanuel Combe - Pfitser Etienne, op. cit

Supply Chain and Logistics: Areas for Carbon Emission Improvements

The State of the Art

Ignacio Sánchez-Chiappe

IEEC, School of Business, Supply Chain Management and Logistics, Buenos Aires, Argentina

Ana Paula Poratelli

IEEC, School of Business, Supply Chain Management and Logistics, Buenos Aires, Argentina

Summary

Increasing pressure is felt towards reducing carbon intensity in supply chains. Major impact will be felt in the areas of logistics and transportation. As a consequence there will be new pressures for more regulation of carbon emissions. Higher and more volatile fuel prices and evolving consumer and customer demand are also part of the problem to have more efficient and less polluting supply chains.

The transportation sector is a key contributor to these emissions with road freight in the first place and followed by ocean freight, air freight, rail freight, and logistics buildings.

Key recommendations exist for logistics and transport providers, for shippers and buyers, and for policy makers.

A tactical approach to de-carbonization has resulted in important but small scale responses to climate change. There is still a need to have a more strategic view that encompasses processes from end to end and all aspects of the product life cycle from raw material to disposal considering the total product life cycle impact of carbon.

Supply Chain De-carbonization. The largest logistics and transportation firms are at the core of the de-carbonization efforts. There is a growing need to develop cost effective and efficient de-carbonization strategies and to move beyond corporate and geographical barriers in addressing carbon emissions. Tactical approaches that only consider solutions of a particular situation will only shift emissions between different parts of the supply chain, rather than boost overall efficiency. A strategic approach, rather, should address efficiencies across the product lifecycle.

There is also a growing concern for Corporate Social Responsibility (CSR) and strategy leads of major logistics and transport firms. An important role is being played by The Carbon Trust and World Business Council for Sustainable Development, OECD, and IPCC. Thirteen opportunities were found to be of the most relevance to the supply chain sector.

The Logistics and Transport Sector with Road Freight is a major element of this footprint. Minerals and food transportation are the largest contributors by product category. In absolute terms, road freight is the greatest part, with ocean freight some way behind. However, this does not imply that road transport is the least efficient mode. Assessed in terms of emissions intensity per ton-km, air freight is considerably more carbon intensive than road. Overall, the most carbon efficient modes are rail and ocean freight. Road freight is the main contributor to freight transport emissions globally. Air freight is a highly carbon intensive mode. Ocean and rail freight are the most carbon efficient modes. Minerals and food products are major sources of transport emissions. The current trend is for freight transport carbon emissions to grow over coming years. In the OECD countries, freight transport ton-km grew by an average of 3% per year from 1990 to 2004. The continuing shift to more globalized supply chains, combined with the underlying economic growth, is likely to continue—an assumption which is confirmed by the available country-level data after 2004.

Logistics and transport emissions are 5 to 15% of product lifecycle emissions. There are a number of approaches which look at carbon emissions across the entire supply chain. Methodologies are not yet sufficiently advanced to draw emissions profiles for the entire industry, but we can gain some initial insights. Using the product-level carbon emissions calculation methodologies developed by the Carbon Trust, firms have been able to build a meaningful picture of the total product lifecycle emissions of individual products. An early application of this approach led to the carbon labels on bags of Walkers Crisps. Later projects have looked at other consumer products, including T-shirts, light bulbs, orange juice and potatoes. The number of detailed studies completed at product level remains small.

Clearly, it is important that the logistics and transport sectors work internally to slow and then reverse the rate of growth in its emissions. There is, however, an equally valuable role for the sector to play, enabling emissions reductions in other parts of the product lifecycle.

Pressures for a shift to de-carbonization. The main commercial determinants of supply chain de-carbonization will be: carbon regulation, fuel price volatility, consumer carbon awareness, etc. De-carbonization pressures from policy makers will not go away during a recession, with the continued development of carbon trading schemes being evidenced. A significant amount of the cost of energy is already tax take for many parts of the supply chain. Further fiscal disincentives to emit carbon—such as limit-based approaches and tariff-based schemes—could introduce markets to address environmental externalities from supply chain activities. The major precedent has been the introduction of EU ETS to heavily polluting industries in the EU. While the first phase of EU ETS was hit by oversupply, it is expected that this will be addressed in future phases. EU ETS will be extended to the aviation sector in 2012 and there are some discussions about extension to ocean freight. There is currently little or no discussion about direct extension into the road transportation sector. This is due to preexisting fuel taxes. However; feed-through effects from changes in manufacturing strategy in energy intensive industries could be expected.

Introduction

Supply chain management (SCM) has a growing importance as part of the business strategy for companies that need to be competitive differentiating its product and service offerings both in price and in value. This pressure is even more evident when companies are doing business internationally, either because they are sourcing from other countries or international suppliers or because they are selling to foreign customers. The globalization of commerce has pushed the growth of transportation, manufacturing and international commerce to levels not known up until now. One of the causes of that growth is the development in information and communication technology (ICT). ICT has shifted the power balance between customers and manufacturers giving more knowledge and, therefore, more power to customers. As a consequence, all customers have become more demanding and put a lot of additional pressure on speed and transportation efficiency. The world has shrunk both in distances and time. Therefore, supply chain management is becoming more and more important and strategic due to all these changes that are accompanying the way companies do business and countries improve the standard of living for their populations.

SCM has to be able to answer customer requests both in value and price. One way SCM intends to fulfill these expectations is by looking for other companies and coordinating processes with them, to provide strength in weaker links of the SCM. Therefore SCM becomes the network of relationships that allows companies to do business while relying on other? link's strength. SCM is therefore defined as "...the integration of key business processes from end user through original suppliers, that provides products, services, and information that add value for customers and other stakeholders."¹

The real need for Supply Chain Management

It seems that SCM will eventually become a competitive entry barrier. For companies it becomes a need for competing and remaining in business in a profitable mode. The companies that can create and sustain competitive SCMs are in a much better competitive position than others that are not so successful in forging a competitive business chain and have to build business relationships with less dependable links.

Competitiveness based on efficient and mature Supply Chains is both a need for companies and for countries. Countries need efficient supply chains as a means to create wealth and improve the standard of living of their populations. Economies that are more closed compared to those of other countries, become less able to compete and lag behind. As a consequence, the standard of living of those countries and their populations is less developed. This is more evident when comparing countries that foster free competition and value creation through the creation of enterprises that risk becoming international and look to satisfy customers in different countries.

This is a checkpoint for companies that need to discover the value of creating, developing and relying on mature supply chains. The need to rely on a network of relationships and coordinate the more fundamental business processes among them becomes evident. It is a point where comparison is done with companies from every part of the world as long as those companies develop businesses in the same area of competition and compete in the same markets. Even more today when it is too easy for customers to find substitute products or services. Information technology in general, and internet in particular, are leveling the landscape of competition. In the future this pressure is going to become even more strong as long as technology continues to bring countries and markets closer and continues to collapse time and space.

The other side of the coin: the cons of globalization and the desperate need for financial resources.

The growth of international commerce shows many good aspects and others that require a closer watch from the international community. It is good to compete, create value, and improve the standard of living of a country's population. This cannot be done without thinking of the consequences that it may bring to future generations or to the natural environment where we currently live and grow.

It is very common in developing countries to feel the pressure to solve the problems created by lack of financial resources quickly. These countries usually use for that purpose the natural resources they have available at hand with a very short perspective. Generally, those resources are the natural resources available and their irrational use leads to forest devastation, mining without control or lack of value-adding policy, depredatory fishing without control, etc. It is very easy and relatively simple for governments to solve those short term problems and the very pressing needs they have, by using the natural resources they have at hand with very little or no control at all.

Usually, it is evident that there is a lack of planning and consideration of the legacy they may be leaving to next generations. Governments in these countries are characterized by at least two aspects: growing need of immediate financial resources for the basic needs of their populations and, secondly, more corruption and quick and not-well-thought solutions. Pressures to solve short-term problems make these governments even weaker. It is also evident how commodities with little added-value have increased in price in the past few years making this situation even more dramatic.

It is generally observed that those same countries have institutions that are very weak and succumb to the whims of their governments. They usually have weak legislative power as well, which make things much easier for them to give in to the volatile decisions, sometimes imposed, by their presidents or prime ministers.

To make things worse, these countries have important institutional weaknesses that are not in the top list of priorities to be addressed and solved by their governments. Not at least in the short run. In this way, these weak economies continue to enjoy a growth in the average annual income per capita. These growths, when seen by the foreign analysts, tend to disguise that the distribution of wealth is not as fair as those same populations would like to feel. Averages are only good to compare the economical and financial performance of countries year after year. But averages are useless when it comes to study the real granularity and discover what is actually happening with the current problems that those societies are facing.

Supply Chain Management: an opportunity that puts weaknesses on the table

If countries and societies need to be more competitive, they will eventually discover they need to form alliances and work inside value adding networks. This is what the global economy is delivering as a message. Products are important, but they become more important when they bring with themselves a sophisticated service that is reliable,

consistent and differentiating. There is a term that is used to depict this situation: order qualifiers and order winners. Order qualifiers are *Those competitive characteristics that a firm must exhibit to be a viable competitor in the marketplace. For example, a firm may seek to compete on characteristics other than price, but in order to “qualify” to compete, its costs and the related price must be within a certain range to be considered by its customers,* and Order winners are *Those competitive characteristics that cause a firm’s customers to choose that firm’s goods and services over those of its competitors. Order winners can be considered to be competitive advantages for the firm. Order winners usually focus on one (rarely more than two) of the following strategic initiatives: price/cost, quality, delivery speed, delivery reliability, product design, flexibility, after-market service, and image.*ⁱⁱ

It seems that companies, countries and societies do not have many options: they need to be order winners to create value and welfare for their societies.

To be an order winner requires a tremendous amount of effort, knowledge, consistency and market winning efforts by the whole of the society of that country. Results of those efforts do not become apparent overnight and consequently they require long term planning and effort. Usually long term planning does not go hand in hand with short term needs and those efforts are often abandoned because of the long term they require.

That is the moment when using natural resources becomes a need and a table of salvation. Unfortunately these weak economies overlook the results that using those resources with no beforehand planning may bring to the coming generations.

Supply Chains that are environmentally conscious

The tasks that need to be undertaken are enormous. While it is necessary that all economies grow and are capable of create wealth for their populations, it is also necessary that this growth does not turn into a threat for coming generations. This is a challenge for both developed and underdeveloped economies. For developed economies, because they may take advantage of their situation of preeminence and strength in comparison with less developed economies, and adopt devastating natural resources policies with these developing countries. For underdeveloped countries because they urgently need the natural resources available and may look at them as a cheap and quick way to get cash.

Developing economies also have a challenge that is to grow their economies while at the same time preserving their natural resources as part of the environment in which they develop their everyday lives.

A lot of pressure has been put in the literature on de-carbonization of the Supply Chain. We think that more initiatives need to be undertaken and that de-carbonization policies are not enough. In the following sections we are going to develop, according to the World Economic Forum, what the opportunities are for de-carbonization of the supply chain. But some of those recipes are tough to reach even in the case that all governments were convinced that it is possible to think in de-carbonization of the Supply Chain. In the short run, there are a lot of factors that turn the supply chain into a polluting threat not only via carbonization but also for polluting internal rivers, seas, drinking waters and destroying forests—these are things that need to be considered in all their dimensions. That is why the definition of supply chain management states very clearly: “.....*that brings value to the customers and all the stakeholders*”.

Why Carbon Emissions are Important

According to the World Economic Forum (WEF)ⁱⁱⁱ, human activity generates annual greenhouse gas emissions of around 50,000 mega-tons CO₂e^{iv}. Of those, approximately 2,900 mega-tons – or 5.5% of the total – are contributed by the logistics and transportation sector. It is key to understand CO₂ emissions across the system.

There is a growing concern about reducing carbon emissions in the supply chain. This concern can be regarded both as a threat and as an opportunity. When planning, reducing carbon emission has to be included among the long term goals, not only considering short term profits for the reasons mentioned above.

The issues that need to be considered are:

1. Regulation of carbon emissions
2. Higher and more volatile fuel prices
3. Evolving consumer and client demand

Direct benefits are obtained through:

1. reduced costs,
2. managed risks and
3. business growth

Corporate-level reporting, guided by the widely-used Greenhouse Gas Protocol, is a spreading reality. Product level foot-printing is an important step towards supply chain carbon rationalization. It has been given a boost by the agreement of the first standards. We think that as these initiatives are worth considering, other initiatives that go in parallel with these ones are important as well:

- a. Increase the planting of trees over wide areas, as a compensation for the deforestations taking place all over the world,
- b. Gain more control on water pollution and country policies that affect the overall environment.
- c. Relate illnesses that populations may acquire in the place they live, with water and production pollutants and with a lack of government control in reinforcing law and environmental regulations.
- d. Make evident on the web which governments do not enforce the law and regulations and allow companies to pollute the environment as a grant, in the very early stages of their organizational development. This makes that allowance work as a kind of hidden subsidy that hides inefficiency and carelessness and is difficult to remove later when companies are already developed.
- e. Take into consideration as an example the regulations existing in the European Union (EU) that do not allow European companies to partner with or buy from companies from other countries that do not care about environment, or that destroy environment in an irreversible manner.

Transportation modes contribute to the carbonization of supply chains.

Corporate-level reporting, guided by the widely-used Greenhouse Gas Protocol, is a spreading reality. Developed by the **World Resources Institute (WRI)** and the **World Business Council for Sustainable Development (WBCSD)**, the two new GHG Protocol standards – the Product Life Cycle Accounting and Reporting Standard and the Scope 3 (Corporate Value Chain) Accounting and Reporting Standard – provide methods to account for emissions associated with individual products across their life-cycles and of corporations across their value chains.

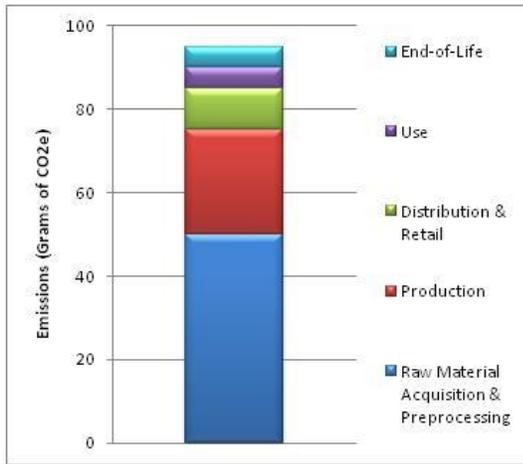


Figure 1. An example of GHG emissions across a product’s life cycle. Source: The Green House Gas Protocol Initiative

Product level foot-printing is an important step towards supply chain carbon rationalization. It has been given a boost by the agreement of the first standards.

Modes of transportation also contribute to the carbonization of the supply chain. The chart below shows how each mode of transportation brings its own rate of emissions.

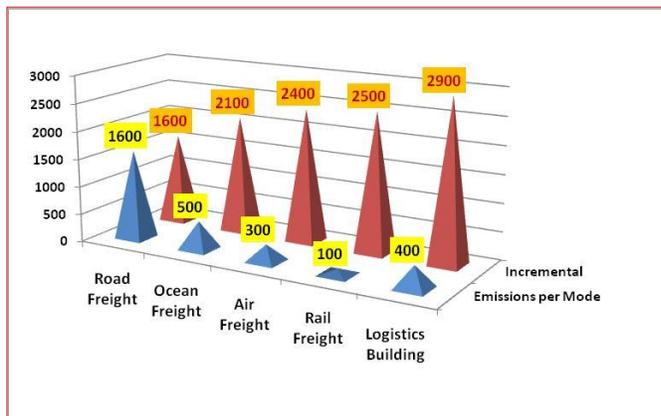


Figure 2. Carbon Emissions by transportation mode and total mobility emissions. Data Source: The World Economic Forum: Supply chain de-carbonization the role of logistics and transportation in reducing supply chain carbon emissions. Geneva 2009. Total emissions are 2,500 Mega Tons of CO₂e

In this chart we see that carbonization is due to different modes of transportation and with different relative importance. This numbers do not indicate efficiency of each mode but the total emission by mode of transportation. It seems to be a trend that carbonization will continue to grow unless there is a wide adoption of a systemic point of view starting to consider the costs created all along the supply chain in all the phases of sourcing, production (transformation), delivery and return.

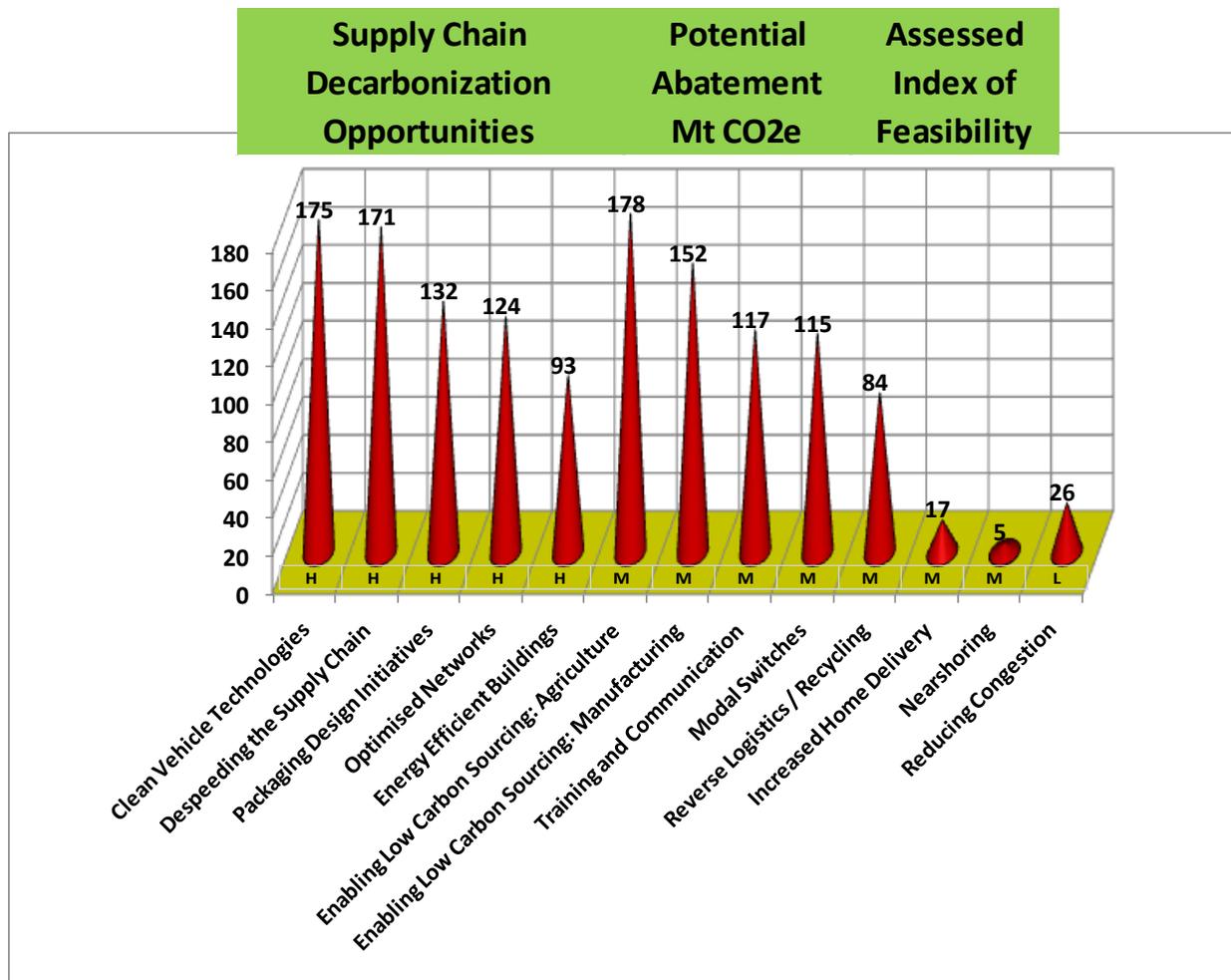


Figure 3. Supply chain de-carbonization opportunities. Potential abatement and Feasibility Index. Data Source: The World Economic Forum: Supply chain de-carbonization the role of logistics and transportation in reducing supply chain carbon emissions. Geneva 2009.

In figure 3 there are thirteen opportunities for de-carbonization of the supply chain. At the foot of the chart there are H, M and L letters indicating the feasibility of each of these opportunities. So these opportunities have been sorted based on the potential for carbon abatement and the likelihood indicated by the feasibility index. Later in the report we are going to show what each of these opportunities means to the supply chain, and what they will require to become effective. According to this chart, the greatest opportunities exist for: Clean Vehicle Technology, Despeding the supply chain, Packaging design initiatives, Optimized Networks, and Energy Efficient Buildings. The thirteen initiatives account for a total of 1389 Mt CO₂e of which a subtotal of 695 Mt CO₂e has high potential for implementation. Initiatives with a medium potential of implementation account for 668 Mt CO₂e, almost for the other 50% of improvement.

Supply chain de-carbonization opportunities along the supply chain

Opportunities abound along the supply chain for de-carbonization. In every stage of the supply chain there exist opportunities for revising how the specific activity developed at every stage of the logistics process contributes or plays against de-carbonization.

One of the tools that deserves a special recognition on how to improve the performance of the supply chain is SCOR (Supply Chain Operations Reference). SCOR has been developed by the Supply Chain Council^v and it is now in its 10th release. SCOR has identified five key processes: Source, Make, Deliver, Return and Planning. SCOR has the capacity of touching every one of the activities in the chart below.

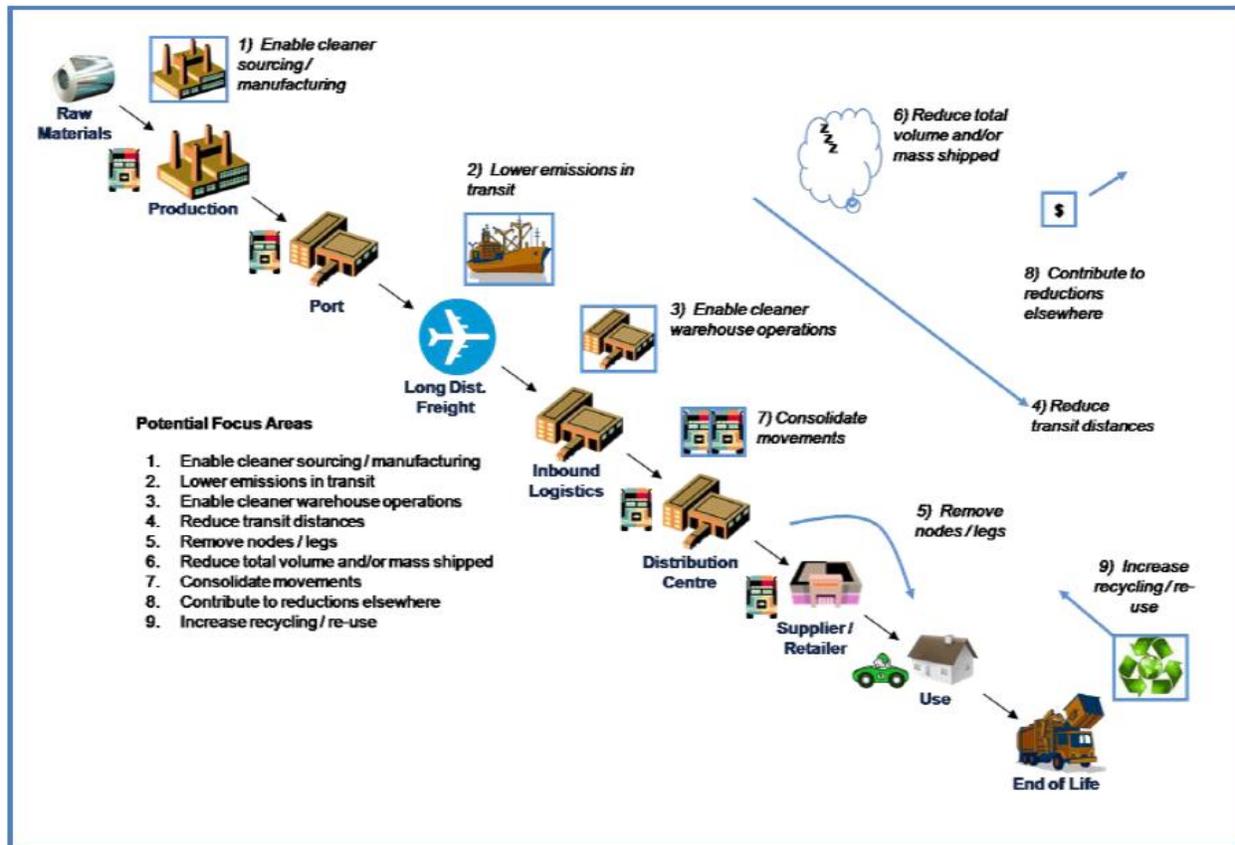


Figure 4. Areas for potential improvement in the Supply Chain.

SCOR has a very well developed metrics system for a comprehensive measurement of the whole supply chain. In its tenth edition there is a whole chapter dedicated to effectively allow the SCOR Model to be used as a framework for environmental accounting. The proposed metrics are listed in the table below.

Metric	Units	Basis
Carbon Emissions	Tons CO ₂ Equivalent	This is the unit of measure currently used for green house gas emissions and is a measure of the climate impact from CO ₂ and other global warming air emissions.
Air Pollutant Emissions	Tons or kg	This would include emissions of major air pollutants (CO _x , NO _x , SO _x , Volatile Organic Compounds (VOC) and Particulate). These are the major emissions that U.S. EPA tracks.
Liquid Waste Generated	Tons or kg	This includes liquid waste that is either disposed of or released to open water or sewer systems (these emissions are generally listed on water emissions permits).
Solid Waste Generated	Tons or kg	The total solid waste generated by the process.
% Recycled waste	Per cent	The per cent of the solid waste that is recycled.

Figure 5. SCOR Model develops level 3 metrics that allow for environmental accounting

Areas of Concern

Supply chain thus turns itself into a key component for companies that would start to do business internationally. Besides, every country should develop policies to encourage national companies to do business internationally and improve the standard of living of its population by bringing home the wealth that can later be used as a source to improve education, research, the standard of living, the competitiveness of companies and universities, the academic level of universities and higher education in general.

But supply chains are not created overnight. Every single minute a company or a country delays the improvement of the supply chains is an opportunity lost that other companies from other countries eventually may take advantage of. The lack of conceptual clarity in formulating long term supply chain policies is the reason why most of the developing economies use their natural resources as a source of short term cash, without clear long term regulations. This is how they compromise their environment.

Deforestation: a real threat that has to be faced^{vi}

Forests are one of the most valuable eco-systems in the world, containing over 60 per cent of the world's biodiversity. This biodiversity has multiple social and economic values, besides its intrinsic value, varying from the important ecological functions of forests in terms of soil and watershed protection to the economic value of the numerous products which can be extracted from the forest. On a global scale, all forests play a crucial role in climate regulation and constitute one of the major carbon sinks on earth, their survival thus preventing an increase in the greenhouse effect.

Forests have already disappeared in many parts of the world and deforestation rates worldwide have been increasing since 1980. There is not a clear definition of forest. The latest given by the UN Food and Agriculture Organization, formally the main body responsible for forests within the UN system, is so broad that most green urban areas can be considered major forest ecosystems. Thus, thereplacement of valuable primary forest ecosystems by monoculture plantations - in many cases with alien species such as eucalyptus or pine trees - or by biologically poor forests is seldom taken into account. Europe, for example, lost most of its forests in the 19th century. But FAO reports state enthusiastically that there is an increase of boreal and temperate forests in this region. A substantial part of these "forests" are biologically-poor production forests, lacking undergrowth, original soil biodiversity, and most original bird, mammal and reptile species. They are in fact more akin to monoculture plantations than to true forests^{vii}.

Direct causes of deforestation

The following are among the most important direct causes of deforestation:

1. Logging: the conversion of forested lands for agriculture and cattle-raising,
2. urbanization,
3. mining and oil exploitation,
4. acid rain and
5. fire.

Changing the use of the soil to agriculture or cattle raising rapidly degrades the soil and starts a spiral of vicious cleaning of forests for new soil, degradation, cleaning for new soil, and so on. Countries that were almost primarily forests a hundred years ago do not have anymore forests now.

The underlying causes of deforestation and forest degradation

Among the causes of deforestation we can include macro-economic strategies, choosing short term profitability against long term sustainability. Overconsumption by consumers in high-income countries and uncontrolled industrialization are at the heart of forest degradation with widespread pollution resulting in acid rain.

The forces behind unsustainable agriculture

According to the FAO, 90 per cent of deforestation is caused by unsustainable agricultural practices, while logging and plantation forestry play a greater role in forest degradation.

The far-reaching consequences of globalization

Developed economies that require vast amounts of cheap raw materials, grains or commodities. Can usually acquire those materials very cheaply from developing economies that have a short term need of cash and don't think long term for sustainable policies that would preserve the environment for generations to come.

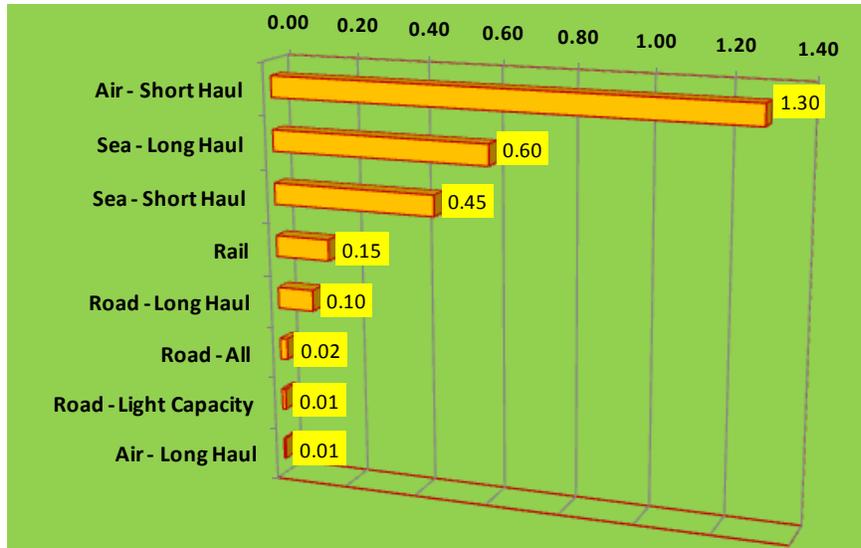
A global problem with many actors

Deforestation and forest degradation occurs both in Northern and Southern countries and its underlying causes also originate in both, although with varying degrees of responsibility. Industrialized countries have not only cut down or degraded their own forests in the past; many are still doing so today. This occurs either through large-scale clear-cutting or through the thinning and therefore degradation of forests reducing them to a few commercially valuable species at the expense of biodiversity. At the same time, problems resulting from industrialization - such as acid rain - are having a strong impact. In the South, some forests are being clear-felled - mostly for unsustainable export-oriented agriculture, tree and oil-palm plantations and cattle - or are being degraded as a result of the selective

logging of the more commercial species - such as mahogany. Another cause has been the increasing incorporation of Southern agricultural exports to markets in Northern countries, usually at the expense of their native forests.

Emission Efficiency per Transport Mode

Not all means of transportation are equally efficient. There is an option to rethink the mix and how to optimize the transportation networks to minimize emissions. In the following chart we see transportation modes sorted by the amount of emissions they produce.



Road freight is the main contributor to freight transport emissions globally.

Air freight is a highly carbon intensive mode.

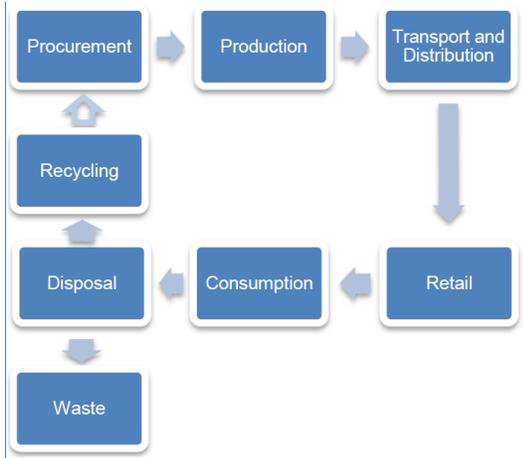
Ocean and rail freight are the most carbon efficient modes.

Minerals and food products are major sources of transport emissions.

Total supply chain carbon footprint

When referring to the total emissions during the lifecycle of a product it turns out that, on average, logistics related emissions account for 5-15% of the total during the lifecycle of the product. The Carnegie Mellon University Green Design Institute model 13 looks at logistics and transport within the lifecycle emissions of products. The Economic Input Output Life Cycle Assessment (EIO-LCA) approach provides an approximate idea of the carbon footprint of more products, with known accuracy limitations. This method estimates the materials and energy resources required for, and the environmental emissions resulting from, activities in our economy.

The EIO-LCA method was theorized and developed by economist Wassily Leontief in the 1970s based on his earlier input-output work from the 1930s for which he received the Nobel Prize in Economics. His model was operationalized at Carnegie Mellon once sufficient computing power was widely available to perform the large-scale matrix manipulations required in real-time. There is a non commercial online version of this tool available for free at the University's webpage.



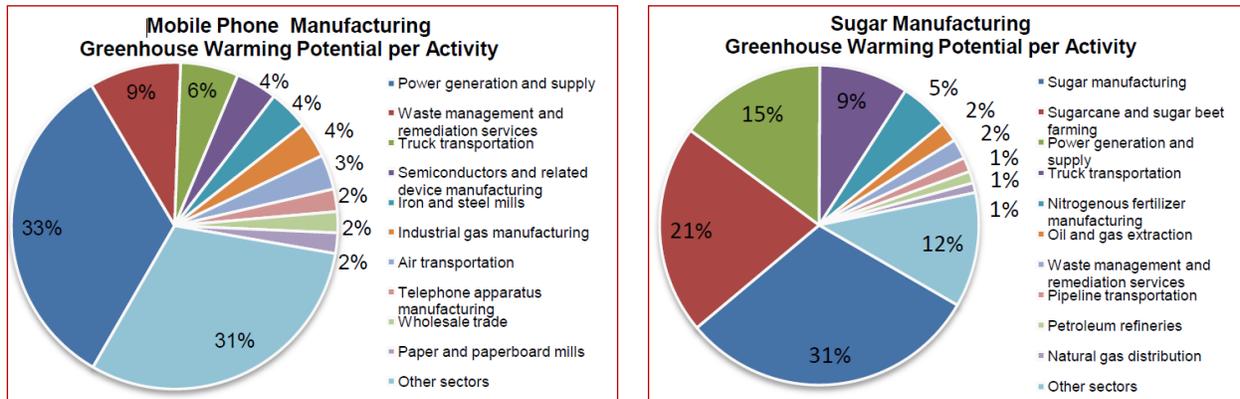
The Economic Input-Output Life Cycle Assessment (EIO-LCA) method is one technique for performing a life cycle assessment, an evaluation of the environmental impacts of a product or process over its entire life cycle. The method uses information about industry transactions - purchases of materials by one industry from other industries, and the information about direct environmental emissions of industries, to estimate the total emissions throughout the supply chain.

Economic Input-Output Life Cycle Assessment (EIO-LCA) is a method—a a mathematically defined procedure using economic

Figure 6. Total Supply Chain Carbon Footprint. Ene to end supply chain process *11th International Business Research Conference, Jacksonville, FL*

and environmental data to determine the effect of changing the output of a single sector. The method can be applied to any economy defined by the transactions between sectors. Each application of the method defines an EIO-LCA model.

One limitation of the EIO-LCA model is that the use and disposal phases of the product lifecycle are out of scope.



Share of Emission per Product Type

Figure 7. Share of emissions for Mobile Phone Manufacturing and Sugar Manufacturing ^{viii}

Wal-mart can be cited as an example with its initiative of adopting a comprehensive approach to sustainability in its supply chain strategy to realize cost and carbon reduction opportunities across logistics, production and innovation. Through internal initiatives and engagement with its suppliers, the world’s largest retailer will make its truck fleet “25 percent more efficient in three years, double in 10 years”. It “plans to share [its] innovations throughout the supply chain, which [it] believes will create a ripple effect and magnify these solutions on a global scale” ^{ix}

De-carbonization Opportunities in the supply chain

Thirteen de-carbonization opportunities in total have been found by the World Economic Forum. As stated before, these are operational and technology related initiatives. They will be useful to achieve the objective, but they will leave a lot of room for other initiatives that could be undertaken as well. Besides, de-carbonization should be a global assignment.

As seen in the previous pages, the paradox is that the countries that need the most to undertake de-carbonization initiatives are those which have the least resources to do it. And as we will see next, the opportunities found by the WEF are not necessarily the best and more efficient initiatives for developing countries.

If we were to wait for these countries to have the resources needed to start working on the problems already mentioned, it would become an endless wait and in the meantime very little would be done. As a result, countries and economies with many more resources would work on initiatives that would not have the most efficient impact worldwide because they do have the resources but not the urgency of solving these problems that are more urgently felt elsewhere.

The following list has been developed based on the feasibility index and the impact of the opportunity.

Opportunity #1 Energy Efficient Buildings

It consists of minimizing emissions from operating activities. The two actions recommended are:

1. Improved specification of new buildings
2. Make incremental improvements to old facilities

While this initiative may create incremental benefits, it will not solve the problems mentioned above. We think that there is an urgent need of reforestation and saving the quality of polluted rivers that affect people's health because they have already become stakeholders of that supply chain.

Opportunity #2 Clean Vehicle technology

Increasing attention has been placed on clean vehicle technology, through:

1. Improving the efficiency of vehicles in their day-to-day operations
2. Switching to alternative or hybrid fuel technology sources

These opportunities may be well suited for developed economies that do have the resources and opportunities for investing in these improvements. But they will take too long to make an impact on countries with many less resources. And they will not solve the real problem that is the need to stop polluting the environment and deforesting third world countries.

Opportunity #3 De-speeding the Supply Chain

The high speed of response needed in many supply chain activities implies that consumer demand is met effectively, but at a price of increased CO₂e emissions. Speed in the supply chain is driven by factors such as lead-times, deadlines and booking windows. This increases emissions—for example through switches to less efficient modes of transportation, increases in the number of expedited orders, and increased vehicle and trip speeds. It is thought that easing lead-times and delivery stipulations could lead to emissions abatements through “de-speeding.”

This opportunity will have a minor impact in countries where speed is not a problem because they are developing economies. Slow supply chains are the norm rather than the exception in those countries. So again the impact is going to be felt the most where it is the least necessary.

Opportunity #4. Network Optimization

In network logistics, optimizing the network's nodal points, hierarchy and inter-related transport flows can bring significant reductions in both cost and carbon emissions. Research has shown that many networks remain at least partially inefficient as a result of both inertia to change and lack of durability in supply chain strategy decisions. Typical studies show that in “As-Is” networks, restructuring the network gave both an 11% cost reduction and a 10% CO₂e emission abatement.

Again, we think that more effective initiatives than this one need to be thought and agreed upon with a broader and global perspective. In developed economies, only companies that see a cash benefit will optimize their networks. In less developed economies this will not be a top priority initiative because they lack the infrastructure that would give them the chance to choose among different network alternatives.

Opportunity #5. Packaging Design Initiatives

Sustainable packaging initiatives can make a substantial contribution to carbon abatement across the supply chain. Packaging initiatives can consider either transit or consumer packaging and should assess the carbon impact of packaging through the entire supply chain. Techniques such as packaging elimination, light-weighting and the selection of alternative materials are already used by leading firms. There is a potential for further deployment of these techniques.

This may turn into a positive worldwide initiative as long as countries become more demanding and rigid regarding the acceptance or rejection of products and packaging that result from manufacturing methods and technology that do not comply with environmental regulations.

Opportunity 6. Training and Communication Programs

Increasing attention is being focused on the behavioral aspects of managing climate change, both for demand side (consumer) activity and supply side (supplier) actions. In the logistics and transportation sector, attention to date has largely focused on the fuel savings achievable through driver training programs, helped in part by the significance of fuel in the transport cost base, and legislative activities such as the introduction in the EU of mandatory driver training. There is a wider potential for emissions abatement from training and communication programs.

This opportunity needs further development to be applicable both in developed and developing economies.

Opportunity 7. Modal Switches

Significant differences exist in CO₂e emissions between different freight transportation modes when expressed in terms of emissions per ton-km shipped. Data suggests that shipping emissions are in the region of 1% to 2% of those of airfreight per ton-km, when comparing long haul air to ocean freight container vessels. Where absolute emissions from the less efficient modes are significant, switching small volumes of freight to another mode may have a significant impact on emissions in percentage terms.

For developing economies there is a greater need of developing the transportation infrastructure and modes that they are lacking today.

Opportunity 8. Nearshoring

The era of cheap transport and wage arbitrage potential resulted in a large swing to low cost country sourcing. With rising volatility in fuel prices—plus other effects such as the growing need for flexibility in supply chains—nearshoring may be both a cost-efficient and carbon- friendly choice in manufacturing location decisions. Discussions across the literature have focused on switches to Mexico for the US and Canadian markets, and to Eastern Europe for high tech manufacturing for the European market.

Another opportunity for developed and developing economies is to create more efficient modes and means of transportation like inland and internal river navigation. Inland river navigation is a source of savings both in expenditure and efficiency in carbon emissions.

Opportunity 9: Enabling Low Carbon Sourcing: Agriculture

A number of studies have shown that significant benefits can come from switching production to more carbon efficient sources. Raw materials represent a large part of the lifecycle carbon footprint of virtually all manufactured products. Key contributors to emissions density are the intensity of agricultural systems and the efficiency of production, driving potential to reduce emissions through changed sourcing location.

Opportunity 10: Enabling Low Carbon Sourcing: Production

In lifecycle assessments, the contribution of manufacturing can be around 25% of total emissions, with energy consumption in the manufacturing phases playing a significant role. Reductions in manufacturing emissions are envisaged to come from two different sources in this analysis:

1. Achieving economies of scale in production

2. Switching to lower carbon energy sources

Opportunity 11: Reverse Logistics. Recycling

There is potential to address CO₂e emissions through increases in the take-up of recycling and reverse logistics activities. These operations divert volume from waste, addressing landfill and incineration carbon emissions. They also reduce the resource requirements—and therefore associated carbon emissions—from raw material extraction and processing activities. For nearly all types of waste, recycling operations are more carbon efficient than virgin material procurement and waste disposal operations.

Opportunity 12: Increased Home Delivery

It is perceived to be more efficient in many cases for retailers to deliver purchases to consumer homes than to have consumers drive to stores to make purchases. Home delivery was boosted in certain segments of the retail market in western economies in recent years by the emergence of the internet retail channel. There remains significant potential in the market for growth, with market volumes growing by around 20% per year in several Western economies.

Opportunity 13: Reduced Congestion

Transport congestion across all modes has grown in most economies, as a result of traffic volume growth outstripping the supply of new infrastructure. The cost and carbon impact is significant in road transport: 6% is added to the EU road transport fuel bill by traffic congestion (Eurostat). In the USA, the 1.5% of fuel purchases which are burnt in traffic jams equates to 2.4m gallons of fuel per year (US Bureau of transportation statistics). Bottlenecks also cause congestion in other modes, including air and rail: 35% of European flights arrive more than fifteen minutes late due to congestion. Up to 20% of freight trains in the USA are delayed arriving at their destination.

Developing countries, most generally, lack the infrastructure necessary for efficient and cost effective means of transportation. Transportation has a tremendous social impact by allowing all regions of a country to participate and integrate in its economic and value adding activities. Lack of infrastructure usually creates economic unbalances between the capital city and the rest of the cities of the country.

As a general rule of thumb, in Latin American Countries, usually the capital city holds about one third of the total population of the country. Buenos Aires and its surroundings, in Argentina, hold approximately 14 million people of a total population of 40 million. Santiago, in Chile, holds approximately five million people of a total of 14 million people. Montevideo, in Uruguay is 1.2 million from a total population of 3.5 million people for the whole country. San Pablo (although not the capital, the largest city in Brazil), has 40 million people from a total of 130 million people for the total of the country. Mexico City has about 20 million people from a total of 100 million for the whole country. And in general, this rule applies for all the countries in Latin America.

These economic unbalances have consequences of unequal opportunities acting as barriers for social, professional and financial improvement. As a reaction people need to move to big cities and a lot of different problems arise : poverty and big social conglomerates that lack the minimum for a decent life. As a consequence poverty extends with little hope for advancement.

The logical solution for these situations would be to build and develop the infrastructure needed for efficient modes of transportation that not only would allow people to stay in their own regions but also to incorporate more productive regions to the economic equation and welfare of the county.

Conclusions

Supply chains, no doubt, have become part of the business strategy both for companies and countries. The economic rivalry among companies and countries today, with a globalized world more and more connected via the information and communication technology, is tougher than it was ten years ago. Many governments do not yet understand the

real impact that Internet is having in the way business is conducted and how the economic landscape is being changed every day in a subtle but unstoppable way. Few of them think ahead and plan consequently how their countries are going to compete in the coming years and which decisions to make today that may affect the natural environment. They need to balance between being competitive and not burning the natural resources that are going to be the heritage for the generations to come.

As stated above “According to the FAO, 90 per cent of deforestation is caused by unsustainable agricultural practices, while logging and plantation forestry play a greater role in forest degradation”. This is a totally new approach and conceptually different from the causes and solutions for carbonization of Supply Chains considered by the WEF.

The opportunities for supply chains de-carbonization mentioned above cannot be considered as “one size fits all” type of solutions. Clearly there is a need to differentiate de-carbonization opportunities that are applicable to developed economies and those that should be applied to developing countries with different problems to solve and different resources to use for solving those problems.

The world is more global than a few years ago and so are the ecological problems it is facing. Any country can create ecological unbalances for itself and for the rest of the global community. If one country decides to wipe out a big natural forest and, eventually replace it with a different ecosystem, this action will be of concern not only inside that country but also for the international community. If the problem is global, so is the solution. The first thing to acknowledge is that there are no unique solutions for problems, even if they look the same, when they have different root causes. The second thing to recognize is that these problems also need the participation of the whole global community so they can be solved in a fair and lasting way.

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ⁱⁱ APICS Dictionary , 12th edition (2008). APICS, The Operations Management Society.

ⁱⁱⁱ The World Economic Forum. Supply chain decarbonization the role of logistics and transport in reducing supply chain carbon emissions. Geneva 2009.

^{iv} CO₂e Equivalent CO₂ (CO₂e) is the concentration of CO₂ that would cause the same level of radiative forcing as a given type and concentration of greenhouse gas. Examples of such greenhouse gases are methane, perfluorocarbons and nitrous oxide. CO₂e is expressed as parts per million by volume, ppmv.

^v SCOR 10 (Supply Chain Operations Reference), by the Supply Chain Council. www.supply-chain.org

^{vi} World Rainforest Movement: What are underlying causes of deforestation? See: <http://www.wrm.org.uy/deforestation/indirect.html>

^{vii} World Rainforest Movement: What are underlying causes of deforestation? See: <http://www.wrm.org.uy/deforestation/indirect.html>

^{viii} The World Economic Forum. Supply chain decarbonization the role of logistics and transport in reducing supply chain carbon emissions. Geneva 2009

^{ix} www.walmartstores.com/sustainability.