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MARKETING THE HOTEL SECTOR IN ECONOMIC CRISIS EVIDENCE FROM MAURITIUS

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ABSTRACT

The rapid spread of the economic crisis has affected the number of international tourist arrivals and the hotel industry in many regions of the world with dwindling occupancy rates. Tourists are more likely to be price sensitive and change their buying patterns during periods of economic hardship. The economic crisis affected different regions of the world including the small island developing destination of Mauritius where uncertainty and doubts in the markets caused a decrease in tourist arrivals which resulted in a reduction in occupancy rates for its hotels. This study attempts to investigate the marketing mix strategies of product, price, place and promotion used by the hotel industry in these turbulent times to reduce decreasing occupancy rates. A survey was undertaken among 75 Marketing Managers of the hotel industry in Mauritius. As this is an exploratory study, the survey enabled the researcher to probe into the marketing mix strategies used by hotels during the economic crisis. The information gathered was analyzed using descriptive statistics and recommendations were suggested.

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KEYWORDS: Economic Crisis, Hotel Sector, Marketing Mix, Mauritius, International Tourism

INTRODUCTION

Research investigating the impacts of the global economic crisis on the tourism industry indicated that it would have only regional and sectoral repercussions (Smeral, 2009). However, the economic crisis which started in the second half of 2007 has had a profound impact on the economies and industries of several developed and developing countries. Tourism demand has been most affected by adverse economic conditions (Song and Lin, 2010). A period of economic slowdown can be particularly harmful to the tourism industry and previous studies have shown that an economic crisis negatively affects the number of international tourist arrivals in countries affected by the crisis or causes a decrease when the generating markets are affected by the crisis. An economic downturn brings changes in consumer behavior, increased unemployment and loss of income (Smeral, 2009). A study conducted by Okumus, Altiney and Arasli (2005:102) demonstrated that the economic crisis in Turkey reduced the tourist demand from Turkey which forced hotels in Northern Cyprus to work with fewer people and to postpone their future investment because of higher costs and lower revenue. Consumers are likely to change their buying patterns during economic hardship and stress (Ang, 2001). Prideaux (2000) explains that uncertainty regarding job security and apprehensions to meet future financial obligations may be the primary reasons for reduced tourism activity. Tourists as consumers restrict their financial spending as they become more insecure about their jobs and reduced purchasing power. A study carried out by Shama (1981) has shown that during periods of economic slowdown, consumers bought less and searched for cheaper products. Tourists tend to reduce their holiday expenditure by booking cheaper accommodation, taking fewer visits to restaurants, having shorter stays and visiting nearer destinations (Smeral, 2009). During economic hardship, consumers engage in more price substitution, more deferment of purchase of expensive products, increase in do-it-yourself activities, and greater emphasis on products which offer greater value for money (Ang, 2001).

Mauritius is a small island developing state where tourism is one of the main pillars of its economy. While the history of tourism in Mauritius dates back to some four decades, it is only recently that the Government has put tourism in the forefront to become one of the main industries of the economy to replace the fading textile and sugar sector. Mauritius has achieved a remarkable success in its tourism sector for the last two decades. This achievement can be seen through the increase in international tourist arrivals to 930,456 in 2008 as opposed to 718,861 in 2004 for a population of 1.2 million inhabitants. The year 2008 started well for the Mauritian tourism sector during the first 3 months; however, by the end of the year, the country experienced a decrease in the number of international tourist arrivals and in tourism receipts for the month of November and December (Ministry of Tourism, 2009). According to the Central Statistical Office (CSO, 2009), the number of international tourist arrivals fell by 2.4% and 6% for the month of November and December 2008 as compared to the previous year. Moreover, the first 6 months of 2009 encountered an average fall of 9.3% in international tourist arrivals leading to a decrease of 14% in tourism receipts (CSO, 2009) for the same period in 2008.

The behavior of international tourists has impacted on the hotel sector which has witnessed a fall in its occupancy rates. In its monthly survey, the Association of Hoteliers and Restaurateurs Mauritius (AHRIM) stated that among its hotels, there has been a decrease in the occupancy rate of an average of 10% in the middle of 2008 and about 15% by the end of the same year (AHRIM, 2009). The decline was also evident in the first 6 months of 2009 where the hotels experienced a fall of 11% in room bookings. It was observed that tourists from France and Reunion Island preferred to rent self-catering bungalows which were cheaper than hotels. This shift in purchase behavior has been associated with the economic crisis which has compelled tourists to alter their spending patterns as they preferred to substitute large hotels for smaller self-catering accommodation. Therefore, ways must be examined to increase the hotel occupancy rate as it is a major contributor to the economy of Mauritius. Cizmar and Weber (2000: 238) noted that marketing practices are positively contributing to the business performance especially during the crisis situation and the authors have linked some factors of marketing effectiveness to business performance. However, no studies examined the importance of the marketing mix strategies used by hotels in periods of economic crisis. Hence, it is important to determine the marketing strategies that can be adopted by hotels in order to fend the economic crisis and increase their occupancy rates. Additionally, research investigating the impacts of economic crisis on the tourism industry is scant (De Sausmarez, 2003) and such studies have not been conducted in a small island developing economy. Therefore the purpose of the study is to examine the marketing mix strategies used by hoteliers during the period of economic crisis in the small island of Mauritius. The marketing mix variables that would be examined in the study are that of product, price, place and promotion.

The paper is organised as follows: the introductory section identifies the context and presents the purpose of the study. The next section reviews the relevant literature on the marketing mix variables. The research methodology is then presented followed by the results and discussion. The last part of the study concludes the paper.

LITERATURE REVIEW

Establishing effective marketing mix strategies is critical for Marketing Managers. McCarthy's (1960) 4Ps – product, price, promotion, and place can be regarded as the traditional elements of the marketing. The marketing mix is the set of marketing tools a firm uses to pursue its marketing objectives in the target market (Borden, 1984:3). It should be designed to influence consumer decision-making and lead to profitable exchanges. When an organization markets its products, it needs to create a successful mix of the right product, sold at the right price, distributed in the right place and communicated through suitable promotion tools.

Product is explained as anything that is being offered to a market such as physical goods, services, events, organizations, people, and ideas (Kotler and Armstrong, 2004). As such, tourism products offer a combination of services and goods. In the tourism industry, the fundamental concern is to provide the appropriate bundle of benefits [products and services] to consumers which meet the changing needs and demands of the consumer (Kotler and Armstrong, 2004). According to Ferrell and Hartline (2005), the product is the core variable of the marketing mix strategy in which organizations can offer consumers symbolic and experiential attributes to differentiate from competitors. Product is also associated with quality, design, features, brand name and size (Borden, 1984; Zeithaml and Bitner, 2003). A product has also been viewed as having three levels: the core product, the actual product and the augmented product (Zou and Cavusgil, 2002). The core product consists of main benefits that the consumer is looking for such as accommodation and meals in the case of a hotel. The actual product has the characteristics of quality level, features design and packaging. The augmented product enables the organization to differentiate its service offering by deliver more than the expectations of customers.

Price is the only variable of the marketing mix that generates revenues for a firm, whereas all other elements of the mix are associated with costs (Kotler, Bowen, and Makens, 2006; O'Connor, 2003; Shoemaker, Lewis, and Yesawich, 2006). It is the amount of money charged by the organization in exchange of a product or service or sum of values provided to consumers. Docters, Reopel, Sun and Tanny (2003) state that price is a way of communicating and sending the right message to its customers. Organizations have several market segments with multiple price sensitivities and concerns. Kotler and Armstrong (2004) state that by setting a price, it is important to look at its competitors' pricing strategies. Hospitality firms use various methods to set prices for their offerings. Hospitality managers often select different pricing approaches based on a combination of several factors: a firm's cost structure, competitors' prices, and customer value perceptions of hospitality products (Raab, Mayer, Kim and Shoemaker, 2009). For example, Zeithaml, Bitner, and Gremler (2006) argue that, because price reflects quality for customers, it must be determined very carefully and thus marketers should price their products or services based on customers' perceptions of the value of the offered product or service. They also use several price adjustment strategies, such as volume-based, time of purchase discounting, price bundling or discriminatory pricing (Kotler *et al.*, 2006). Shoemaker *et al.* (2006) suggested that pricing is a powerful force in attracting attention and increasing sales and that it can also have a major influence on customer loyalty.

Place also referred to as distribution channels serves mainly to make services accessible and available to consumers (Woodruffe, 1995). Buhalis (2001) explains that the functions of distribution channels are to provide tourists with information and travel arrangement services. He emphasizes that distribution channels should therefore bundle tourism products together; and also establish mechanisms that enable consumers to make, confirm and pay for reservations. Distribution channels also facilitate the search process for consumers (Wynne, Berthon, Pitt, Ewing and Napoli, 2001). The hospitality industry uses a range of distribution channels to distribute their products and services such as travel agents, tour operators, visitor information centers, sales representatives and the Internet. Several channels may be used in conjunction, catering for differences in consumer needs or product requirements (Reinders and Baker, 1998). The internet is known as the modern distribution channel and Martin (2004) believes that it is expected to bring new opportunities for business development and competitive advantage. According to Richer and Carter (1999) the internet provides hotel organizations with a cost-effective channel without the high distribution costs of conventional media. Additionally, consumers are aware that the cost of web distribution is lower than any other channels, and expect cheapest rates via electronic routes (O'Connor, 2003).

Promotion in the marketing mix is also referred to as communications and is aimed at target groups who need to receive information about the products and services in order to purchase (Woodruffe, 1995). According to Kotler *et al.* (2006) the promotion mix of the hospitality industry consists of several elements such as personal selling, sales promotion, public relations, direct mail, trade fairs and exhibitions, advertising and sponsorship. Advertising is one of the most commonly used types of promotion. It is a paid, non-personal presentation of offerings (ideas, goods, or services) by an identified sponsor (Herrera, Lopez and Rodriguez, 2002). Advertisements are designed to inform, convince and trigger purchase regarding products and services. Sales promotion is another major aspect of promotional mix. According to Herrera *et al.* (2002), sales promotion involves a number of techniques designed to stimulate purchase of the product over the short-term. Examples include contests, special offers and rebates. Public Relations (PR) are the practices of managing the flow of information between an organization and its publics (Grunig and Hunt, 1984). Common activities include speaking at conferences, winning industry awards, working with the press, and employee communication. PR can be used to build rapport with employees, customers, investors, voters, or the general public (PRSA, 2009). Direct marketing uses direct mail, electronic mail, and telemarketing to stimulate purchase. The product, price, place and promotion strategies should be used together as a combination of strategies to counter the effect of the financial crisis and for industry survival during this period of uncertainty.

METHODOLOGY

A quantitative approach was chosen for the study. A questionnaire was distributed through electronic mail to the Marketing Manager of 75 hotels in Mauritius. The questionnaire consisted of 6 sections. The first section included questions on characteristics of the hotel establishment. Section 2 to Section 5 consisted of statements regarding the Marketing Mix variables of Product, Price, Place and Promotion used by the hotels during the period of economic crisis. The respondents provided ratings to these statements based on a Likert scale ranging from (1) strongly disagree, (2) disagree, (3) neither disagree nor agree, (4) agree to (5) strongly agree. Section 6 gave an opportunity to the respondents to provide general comments through open-ended questions.

A pilot study was conducted to identify if the electronic mail was a suitable method to distribute the survey instrument and to determine areas of ambiguity in the questionnaire. The questionnaires were emailed to 3 Marketing Managers, a Destination Promotion Officer and the Chief Executive Officer of the AHRIM where the purpose of the study was explained in the email. Following the pilot study, the questionnaire was slightly modified. Two product-related statements: gastronomy and business statements were added as possible features of product strategy. Participants in the pilot study stated that Marketing Managers may be unwilling to disclose information easily and therefore it was important for the researcher to clearly explain through follow-up phone calls that the information would remain confidential.

Convenience sampling was used to identify the 75 Marketing Managers of the hotel sector in Mauritius. All the 75 hotels of the AHRIM were selected to participate in the survey. It was deemed that the sampling size was highly representative of the total number of 100 hotels in Mauritius. Additionally, the up-to-date email addresses of all sampled Marketing Managers were readily available from the contact list of the AHRIM. The revised questionnaire was attached to an explanatory email and sent to the 75 Marketing Managers. They were informed to return the completed questionnaire by email to the researcher and to contact the latter by the same mode of communication or by phone if they needed further information or clarifications. To ensure higher response rate, follow up telephone calls were made after sending the email and in several cases meetings were also arranged with the Marketing Managers.

RESULTS AND DISCUSSION

The results show that only 57 Marketing Managers responded to the survey resulting in a response rate of 76%. Out of the hotels surveyed, 9% was categorized as 2 stars, 26% as 3 stars and the same amount as 5 stars (Table 1). The majority of the hotels (39%) were categorized as 4 stars. 19.4% of the hotels owned between 51 and 100 rooms, 24.5% between 101 and 150 rooms. 22.8% of hotels between 151 and 200 and above 200. Out of the respondents 56% of the hotels were owned by local groups, 27% of the hotels were managed individually and 17% were owned by an international group.

Table 1: Characteristics of Hotels

Category	Items	Percentage (%)
Classification	1 Star	0
	2 Stars	9
	3 Stars	26
	4 Stars	39
	5 Stars	26
Number of Rooms	<50	10.5
	51-100	19.4
	101-150	24.5
	151- 200	22.8
	>200	22.8
Ownership of Hotels	Local group	56
	International Group	27
	Managed Individually	27
Main markets for hotels	France	100
	United Kingdom	62
	Reunion Island	51
	South Africa	42
	Italy	41
	Germany	37
	India	27
	Australia	22
	Switzerland	12
	Local	39

Table 1 reflects the characteristics of hotel establishments based on classification, size, ownership and markets targeted.

The results also reveal that France is the main market targeted by all hotels, followed by the United Kingdom, Reunion Island, South Africa, Italy and Germany. Thus, the main markets targeted by hotels are Europeans and the latter have been affected by the economic. As stated by Chen (2009), the occupancy rate of hotels depends on the development and economic conditions in its own location and in the foreign tourist markets. Hence, economic hardship faced by European customers has resulted in lower occupancy rates of these hotels since it is the main tourist generating market.

The following sections measure the perceptions of hotel managers regarding the marketing mix strategies used during the 2008-2009 economic crisis period. Descriptive statistics were used to find the mean, standard deviations and t-value for each marketing mix variable. Cronbach alpha was also calculated for the 4P's and the results revealed that the internal consistencies of the scales are all quite high. All the four marketing mix strategies have a coefficient of above 0.60, that is, 0.723, 0.635, 0.768 and 0.782 which were obtained for product, pricing, place and promotion. The alpha coefficient for the total scale was 0.625. According to Nunnally and Bernstein (1994) reliability coefficients greater than or equal to 0.50 are considered sufficient for further exploration.

Table 2 shows that during the crisis, 56% of hotels surveyed did not alter their product strategy. Out of the 44% who changed their product strategies, it was seen that the hotels used augmented product offerings in order to differentiate from international and local competitors during the economic crisis. 97% of respondents have included free nautical activities or a wider choice of free sports activities for tourists. The findings also revealed that 70% of respondents have either developed or improved their spa and wellness product. 60% of hotels offered gastronomy cuisine as one of their distinctive product offers. 19% of hotels developed or improved their golf facilities. Ecotourism is also offered as a main augmented product for 5% of hotels located on the hillside which is appropriate for the consumption of such activities. 5% of the respondents improved their business activities due to their location in the city centers.

The rest of the hotels (15%) developed value for money accommodation, wedding facilities and experiencing local culture as part of their augmented product.

Table 2: Marketing Mix of Hotels

Strategies	Items	Percentage (%)
Augmented Product	Golf	19
	Spa and Wellness	70
	Nautical activities	97
	Ecotourism	5
	Gastronomy	60
	Business	5
	Others	15
Price of Rooms	Half Board	60
	Full Board	16
	All Inclusive	12
	Bed and breakfast	12
Distribution Channels	Tour operators (TO)	63
	Travel agents (TA)	5
	Hotel Website	15
	Sales representatives	5
	Selling directly to walk-in-clients	12
Promotion	Advertising	27
	Sales promotion	21
	Direct marketing	2
	Public relations	17
	Exhibitions and trade fairs	29
	Sponsorship	4

Table 2 identifies the product, price, distribution channels and promotion strategies used by hotels during the economic crisis

The findings also revealed that 60% of hotel rooms in Mauritius were sold on half-board basis, that is, breakfast and dinner are included in the costs. It has to be noted that regardless of the crisis, most large hotels in Mauritius sell their rooms on half-board basis. 16% of hotels prices were on full-board basis (breakfast, lunch and dinner included). 12% of hotels offered rates on an all-inclusive basis only. This practice has been increasing as hoteliers believed that it highly increases competitive advantage. Consumers during periods of economic crisis tend to purchase services which they perceive as having greater value for money (Ang, 2001) and are less willing to increase their expenses by dining in restaurants (Smeral, 2009). Therefore, product bundling through all-inclusive packages enables the organization to provide the food and beverage services at a special attractive rate to the consumer. The findings also reveal that 12% of hotels which were with less than 100 rooms applied the bed and breakfast pricing concept. This strategy enables the hotel to provide much lower rates to the consumers as compared to half-board or all-inclusive packages. The results regarding distribution channels reveal that 63% of hotels distribute their products via tour operators. 15% of sales are carried out through the hotel website. 12% of tourists are walk in clients. Sales representatives and travel agents represent about 5% of hotel sales respectively. The findings show that Mauritian hotels are mainly distributed through tour operators and this is a practice carried out even during periods not affected by the economic crisis.

Table 3 presents the results of effective product strategies adopted by the hotels in Mauritius during the economic crisis. It is observed that all the t-values were statistically significant at $p < 1\%$. The most effective measure during the crisis period for all types of hotels was to carry out intensive marketing (mean of 4.6), followed by increasing the visibility of the establishment internationally (mean of 4.2). Increasing the visibility of the hotel locally was considered less effective than internationally as it scored a mean of 3.2. Training of the staff to increase the level of service received a mean of 3.9 and the respondents considered this strategy as effective during the period of crisis. The literature has shown that periods of low demand such as a financial crisis provided a good opportunity to carry out internal structural reforms and apply new concepts where resistance to technological and organizational innovations was easier to overcome (Smeral, 2009). Although this has not completely been the case for the hotel industry in Mauritius, it is seen that management used the opportunity of low demand to improve the level of service by training staff. The upgrading of product packages (mean of 3.2), offering of free nights stays (mean of 3.7) and free leisure activities (mean of 3.3) were considered effective for targeting international tourists. Conversely the less effective product strategy was "complimentary/promotional gifts" (mean of 2.9) as these gifts were given when the client were already in the hotels and thus they were not effective to motivate the client to select the hotel but were rather used to satisfy clients at the hotel and reinforce that they had taken the right decision. This could subsequently motivate customers to select the hotel in future purchase intentions and thus encourage repeat patronage.

Table 3: Effectiveness of Product Strategies Used by the Hotel Sector

Items	Mean	SD	t-value
Training of staff to improve service delivery	3.9	1.05	27.89
Complimentary/Promotional gifts to clients	2.9	1.08	19.93
Upgrading of packages, i.e. half board to Full board or higher room standard	3.2	1.16	20.03
Free nights for long stay	3.7	0.97	28.49
More leisure activities for free	3.3	0.65	37.67
Intensive marketing of the hotel and its products	4.6	0.48	71.86
Increase product visibility locally	3.2	1.26	19.08
Increase visibility internationally	4.2	0.86	36.54
Improve image of the organisation	4.1	0.83	36.64
Improve the quality and variety of the F&B offered	3.6	1.13	23.74
Note: All t-values are significant at $p < 1\%$			

Table 3 shows the mean scores of the product-related strategies developed by hotels to reduce falling occupancy rates.

Price was another marketing strategy considered during the economic crisis by hotels. The results reveal that 69% of the respondents adopted price cuts during the crisis. This concurs with Smeral (2009) who argues that tourist prices for foreign stays are expected to get cheaper in 2009 and 2010. However, it is also noticed that for the case of Mauritius, prices for the local market has also been reduced to attract local customers and increase occupancy rates. Times of hardship have urged people to spend less and to opt for more necessary items as opposed to vacations to a long haul destination. Hotels adopted price reduction so as to appeal more attractive to its markets. Massive discounts were given to tour operators by 15% of the hotels whereas added value such as upgrading from half-board to full-board was given by 21% of the respondents. The tour operators requested 7% to reduce their prices. Promotion and last minute offers were undertaken by 28% of the hoteliers so as to reach targeted level of occupancy expected.

Table 4: Effectiveness of Pricing Strategies Used by Hotels

Items	Mean	SD	t-value
Temporary price cut offered at different points in time, i.e. during holidays in markets	3.2	1.17	20.06*
Price systematically change during certain period (e.g. peak season)	3.1	1.44	16.16*
Different price for different market segment	3.7	1.38	18.78*
Low quality product offered at high price to non knowledgeable customers	1.4	0.60	17.71**
New product introduced at low price to attract customers	3.3	1.31	19.09*
Irregular discounts announced through advertisement	3.2	0.96	24.89*
Price related to client's perception of the product	3.3	1.19	20.84*
Product sold in a bundle or package	3.8	1.01	28.61*
Product introduced at high price and then price goes down gradually	2.1	0.86	18.49**
High quality product sold at high price	2.5	1.20	15.50**
Product sold at low price but complementary at very high price.	1.9	0.88	16.26*

** Significant at $p < 1\%$; ** Significant at $p < 5\%$*
Table 4 shows the pricing strategies used by hotels to reduce falling occupancy rates

As shown in Table 4, the two most effective strategies for the hoteliers were the selling of rooms in a bundle (mean of 3.8) i.e. the rooms were sold with the air tickets and excursions by tour operators and different prices were charged for different markets (mean of 3.7). Table 4 revealed that all the mean values were statistically significant at $p < 1\%$ and $p < 5\%$. The sales of product in bundles enable the consumer to benefit from several products at a lower price rather than having all the products separately but at a higher price for each of the product. Price bundling is a profitable strategy if consumers differ in their willingness to pay for the separate components of the bundle (Venkatesh and Mahajan, 1993). Selling of rooms in a bundle at lower prices helps the hotel to increase the room occupancy and thus benefiting from the extras that are being consumed by the guests.

Shama (1981: 13) pointed out that in such periods consumers are more price sensitive and there is a need either to reduce the price of the product or to offer more value for the same price. The strategy of charging various prices to various markets was adopted by hotels as the markets less affected by the crisis was charged higher prices than those affected by the crisis. Special discounted prices were also offered to the local markets to increase room occupancy rate to reduce the impacts of perishability of hotel services. Thus, the differential pricing strategies are based on the financial capabilities of each market to purchase the product. No new hotels responded to the survey, thus there was no strategy for new entrants adopted such as price skimming and price signaling. Some respondents found price cuts effective and adopted this strategy which involves reducing prices during certain points in time (mean of 3.2). For example, during holiday periods in the French market, prices were reduced. The variation of the price during the low and the high season was another important strategy for the hoteliers (mean of 3.1). Lower prices were charged for off peak seasons and premium prices during peak seasons. However, strategies involving high priced items such as offering high price to non-knowledgeable customers (mean of 1.4), low priced product with high priced complementary goods (mean of 1.9) were considered not effective by the hotels.

Table 5 shows that emphasis was placed on the distribution channels during the crisis. All of the statements listed in the questionnaire received a minimum mean of 3.2. The most effective as considered by the respondents was providing information through the hotel website. This information includes the features and services offered by the hotels as well as any discounts or promotion undertaken by the establishment. Given its low costs and its potential as a boundless platform for marketing and advertising, the respondents were agreeable that more emphasis should be placed on the internet promoting all the features of the establishment. The hoteliers were agreeable that maximum information should be given to the tourist on websites for online booking (mean of 3.9). However, the use of social websites such as facebook (mean of 3.2) was not considered as effective as using the internet. Selling the product in packages to tour operators (mean of 4.2) and travel agents (mean of 4.3), together with attractions and air tickets at lower price enabled many hoteliers to maintain and strengthen their long-term relationship with these organizations. The findings concur with Imrie and Fyall (2001:63) who state that alliances can assist hotels in developing appropriate strategies and be more competitive. This alliance with the tour operators and travel agents has proven to be fruitful in the period of crisis. Incentives such as discounts given to travel agents (mean of 3.8) and tour operators (mean of 3.7) were considered effective as these incentives motivate the tour operators and travel agents to sell the hotel rooms. Incentives were also given to Sales Representative to increase sales and this strategy was successful as it scored a mean of 3.4. Discounts were given to walk-in clients (mean of 3.4); especially the local clients by the hoteliers (22%) so as to motivate them to either extend their stay or come back to hotels for short week end breaks.

Table 6 shows the results of the promotional strategies adopted by the hotels. During the period of crisis, most of the hoteliers were agreeable that sales promotion was the most effective tool of the promotion mix as it scored a mean of 4.2. As Ang (2001) argues, during such periods, there is more price substitution, and greater emphasis on products which offer greater value for money. PR including exhibitions and fairs scored a mean of 3.8 and was considered as second most effective as it gives the hoteliers a possibility to showcase the product in international fairs where all the tourism stakeholders are present including the international tour operators and travel agents. However, it is a costly strategy to be present in the international fairs or for eductours to come to visit the hotels in Mauritius which also include the cost of airfares, accommodation, food and beverages and entertainment. Nevertheless, the hoteliers did not reduce their promotion budget drastically and recognized the importance of such promotional techniques in international markets.

Table 5: Effectiveness of Place Strategies Used by the Hotel Sector

Items	Mean	SD	t-value
Tour operators			
o Sell in volume at low price	3.2	1.29	18.37
o Discounts offered to Tour Operators	3.7	0.93	30.19
o Sell in attractive packages	4.2	0.50	62.81
Travel agents			
o Incentives offered to Travel Agents	3.8	0.58	46.76
o Price at discounted rate	3.8	0.64	44.23
o Product sold in packages	4.3	0.60	52.37
Internet			
o Hotel website (giving information)	4.5	0.63	52.48
o Possibilities to book online	3.9	1.00	28.69
o Email facilities	3.6	1.13	23.58
o Use of social network (facebook)	3.2	0.99	23.58
Sales representatives			
o More resources made available	3.5	1.17	21.71
o Incentives to Sales representative	3.4	0.91	26.41
Selling directly to walk-in-clients			
o Discounts	3.4	1.37	18.24

Note: TO = Tourism Organization; All t-values significant at p < 5%. Table 5 reveals the place related strategies categorized as tour operators, travel agents, internet, sales representative and walk-in clients

Advertising (mean of 3.6) was considered as effective by the hoteliers as there was a need to target new markets and to inform them about the offerings of the hotel. The internet has been mostly used for advertisements and increasing the visibility of the hotel and its services. Moreover the sales promotion undertaken had to be advertised both locally for the local market and internationally. Direct marketing (mean of 2.6), and sponsorship (mean of 2.1) were not considered to be very effective to boost up sales in a short term period during the crisis.

Table 6: Promotion Strategies

Items	Mean	SD	t-value
Advertising	3.61	0.93	29.09**
Sales promotion	4.20	0.64	48.73**
Direct mail	2.62	0.91	21.27*
Public relations	2.90	1.11	18.91*
Direct selling	3.36	0.85	27.91*
Exhibitions and trade fairs	3.81	1.02	27.20**
Sponsorship	2.12	0.93	16.02*

* Significant at p < 1%; ** Significant at p < 5%. *Table 6 shows the promotion mix strategies used by hotels to reduce falling occupancy rates*

CONCLUSIONS

The aim of this study was to determine the marketing mix strategies used by the hotel industry in the economic crisis to increase the hotel occupancy rates. The study has shown that several marketing mix strategies were developed by the hotel industry to fend off the impact of the economic crisis. In terms of product strategies, it has been seen that hotels carry out intensive marketing strategies, especially in international markets to strengthen the image and positioning of the organization. The least effective strategy was to provide complimentary gifts to clients as it did not directly influence their purchase behavior and did not help to reduce the falling occupancy rate.

The pricing strategies that were most successful for hoteliers were product sold in bundles such as packages sold to travel agents and tour operators. Additionally, discriminatory pricing was also useful since it enabled the hoteliers to offer tailor-made prices to specific markets. The strategy of offering low quality product at high prices was not successful with customers. The internet and tour operators were found to be the most effective distribution channels in times of economic crisis. It was also seen that the other distribution channels such as travel agents, walk-in sales and sales representative had an important role to play in effectively distributing the product to consumers. The most effective promotion strategies were sales promotion, exhibitions and fairs as well as advertising. It is important to note though that although sales promotion was greatly used, hoteliers did not massively reduce the prices of luxury hotels but, on the other hand, offered additional free nights or more leisure activities to maintain the high-end positioning of such establishments. These findings concur with Smeral (2009) who argues that major discounts should be avoided because it will be difficult to restore the original price level in the economic recovery period.

Hoteliers must be cautious in developing tourism marketing strategies in times of economic crisis as its impact can be particularly harmful to a small remote island such as Mauritius which is situated around 12 hours from its major and most affected market which is Europe. As Smeral (2009) notes, in economically difficult times, consumers are more likely to select domestic or closer destinations which are easy to reach and less costly. Traveling to these destinations also offers the possibility of day trip which is not possible when travelling to a small destination like Mauritius. In such period, it is recommended that hoteliers use the marketing mix variables judiciously. It is also suggested that the hotels focus on repeat visitors who are confident about the product that they have already experienced. The limitations of the study must be noted. The findings revealed mostly the opinions of Marketing Managers from large hotels as there was a low response rate from smaller hotels. Future studies should investigate the marketing mix strategies of small hotels. Other studies can also determine whether the classification, size and ownership of hotels influence the strategies adopted by the hoteliers.

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TIME-SERIES ANALYSIS OF SWEDISH CENTRAL BANK'S INTEREST RATE OPERATION RULE

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ABSTRACT

This paper estimates a forward-looking Taylor-type interest rate reaction function for Swedish central bank's inflation-targeting policy and a developed model with the exchange rate taken into account. Based on real-time quarterly macroeconomic time-series from Sweden in the first decade of this century, The evidence suggests that the Swedish central bank, Sveriges Riksbank, was not merely adjusting its repo rate in response to the changes in expected inflation and output deviations. An approach that is known as one of a central bank's classic regulation tools to deal with domestic inflation first proposed by economist John Taylor. The results show that the targeted exchange rate could be Sveriges Riksbank's third policy concern in real practice, though in an extraordinarily implicit way. Swedish central bank's underlying emphasis upon exchange rate stability may shed light on why the inflation record of Sweden in the recent years missed its monetary policy objective. However, the argument that unyielding exercise of the classic Taylor Rule would enhance policy effectiveness in a small open country like Sweden remains in question.

JEL: C32; E52; E58; G28

KEYWORDS: Exchange Rate, Inflation, Monetary Policy, Taylor Rule

INTRODUCTION

Sweden abandoned a fixed exchange rate regime in 1992 due to the unruly fluctuation of domestic prices and wage rates between the 1970s and 1990s (Svensson, 1995; Andersson et al., 1995; Almekinders, 1995; Giavazzi et al., 2006). Ever since, Central Bank of Sweden (Sveriges Riksbank), the oldest central bank in the world, sanctified its new monetary policy that aims at a low and stable domestic price level. Sweden became the fourth country in the world, following New Zealand, Canada and the UK (McCallum, 1996) to regulate its monetary instruments in order to achieve and maintain a clearly set inflation rate target of 2% with an acceptable range from 1% to 3%. Although statistics show that inflation in Sweden thereafter shrank to a reasonably lower level relative to a record of over 5% in terms of annualized CPI prior to the 1990s, Sweden was still considered unsuccessful in harnessing the drastic volatility of inflation (McCallum, 1996). Even though inflation was far from being controlled, to what extent did this updated practice enhanced Swedish central bank's capability of controlling inflation?

This paper attempts to explore whether this straightforward inflation-targeting monetary policy strategy accounted for the improved inflation condition. In addition, particular attention is given to the investigation a new floating exchange rate regime could have played an unconstructive role in the Swedish central bank's efforts to counterstrike inflation.

The paper is structured as follows. The following section discusses the relevant literature. In Section 3, the baseline Taylor-type interest rate reaction model is introduced, followed by an expanded model that incorporates the exchange rate variable. Section 4 proceeds with the differentiation between the use of real-time data and ex-post data. Then the dataset and a statistical description of the major macroeconomic time-series of Sweden during the sample period are illustrated. In Section 5, the estimation results are presented, which offer us insights on how we understand that Swedish central bank was subtly responding to the exchange rate variation as its third concern. Section 6 concludes and identifies the extensions of interest for further research.

LITERATURE REVIEW

A wide range of contemporary literature advocates a Taylor Rule standard as a classic model from which a number of central banks had gained valuable policy inferences for their own inflation regulation purposes (Judd et al., 1998; Clarida et al. 1999; Woodford 2001). The Taylor Rule (Taylor, 1003b) for monetary policy refers to a central bank's policy practice of adjusting short-term nominal interest rates in response to inflation and output deviations. Empirically, Taylor's Rule has proved efficient in mitigating inflation in a variety of countries (Taylor, 1993a; Clarida et al. 1999; Woodford 2001). Given that Sweden had successfully reduced its increasing price pressure after adopting an explicit inflation-targeting policy, this paper attempts to verify whether Sveriges Riksbank's regulations to deal with inflation are a typical implementation example of the Taylor-Type interest rate reaction rule.

Taylor (1993b) also argues that the short-term interest rate reaction rule could be more effective as it is performed under a floating exchange rate regime than a peg system. Since inflation deviation and the production gap in the former situation should be comparatively smaller, a moderate adjustment of interest rates could achieve the goal to moderate inflation and output while preventing such regulation from incurring further economic malfunctions (Taylor, 1993b). The exchange rate difference could complicate the evaluation of Taylor Rule effectiveness. However, scarce attention has been directed to the understanding of central banks' regulation behaviors in small open economies such as Sweden. These small economies largely depend exchange rate regime function sound trade. Moreover the effect of a shift from fixed to floating exchange regime on domestic inflation control remains unclear. Maslowska(2009) analyzes Swedish quarterly data from 1990s to 2000s and concludes that Sveriges Riksbank adjusted its short term interest rate in response to inflation and GDP gaps. Nonetheless, his findings could be gratuitous as he does not take the exchange rate regime change into account and fails to make it clear why his two parametric estimations of the interest rate response strengths for inflation and output deviations are not robust.

Other studies maintain that central banks are not restrained by the conditions set by Taylor's formula to manipulate inflation (Poole, 2007). Central Bank of Germany (Bundesbank) is an example of non-Taylor Type regulation from 1970s to 1998. During this time it treated domestic money growth as a third benchmark, in addition to inflation and output deviations, to make decisions onshort term interest rate adjustments (Gerberding et al., 2005). How well the exchange rate condition might be used for Swedish central bank's discretion on interest rate adjustment is an interesting avenue for research. This goal of this paper is to detect the existence of the Taylor-type interest rate reaction rule for inflation control in Sweden. Further the paper examines whether exchange rate volatility affects the effectiveness of inflation targeting policy when Sweden transited into the floating exchange rate regime.

METHOD OF MODELING AND ESTIMATION

To approach the two empirical research questions stated in Section 1, two hypotheses are forwarded. First, Sveriges Riksbank adjusted its interest rate for inflation control in sole response to the deviation of the domestic price level and output gap. Second, the real practice of Swedish central bank's interest rate maneuver treated exchange rate volatility as an extra consideration in order to achieve a precise inflation peg. As an econometric approach, the two tests are performed through the estimation of two models that are developed from the fundamental Taylor-type interest rate reaction function as shown below:

$$i = \pi + 0.5\,\hat{y} + 0.5(\pi - 2) + 2 \tag{1}$$

Taylor (1993b) originally used this simple function form to model the reactions of the United States federal funds rate in the last century towards domestic inflation. The notation is as follows: i denotes the nominal federal funds rate, π is the previous yearly inflation rate and $\hat{y}$ represents the real output deviation from a log linear production trend in percentage. It is worth noting that Taylor did not model inflation in a forward-looking manner but adopted the lagged rate as a proxy and thus the function is backward looking in nature. Moreover, the constant "2" is in a percentage point unit denoting the US inflation rate in equilibrium and simultaneously the real rate of interest in the long run. By this model, the nominal interest rate would be four if there is no output gap and the inflation rate hits its long-run target.

Though Taylor did not estimate his model himself (Judd et al., 1998), he did assign two values 1.5 and 0.5 as the parametric estimates of π and $\hat{y}$, which respectively measure the US federal funds rate's strength of responses to the inflation level and production deviation. Such a reaction function provides a good fit of the US data during the period of 1987-1992 (Taylor, 1993b). However, since central banks worldwide published their own forecast data based on which monetary policy decision are made (Chortareas et al., 2002), research models the interest rate reaction in a forward-looking fashion (Clarida et al., 1997; Gerberding et al., 2005). Following this tradition, a Taylor-type model is developed with the expectation operators in certain anticipation horizons in the setting of Sweden:

$$i_t^* = \varphi_y E_t(\tilde{y}_{t+n_1} | \Omega_t) + \varphi_\pi E_t[(\pi_{t+n_2} - \pi^*) | \Omega_t] + \check{r} \tag{2}$$

Where:

i_t^* = *Sveriges Riksbank's nominal interest rate target at period t*
π^*= *2%, Swedish central bank's official time-invariant inflation target*

$E_t(\tilde{y}_{t+n_1} | \Omega_t)$ = *Expected real output gap, the difference of expected real GDP and the production potential, which is divided by the potential given the set* Ω_t *of all the information available at period t with an expectation horizon of* n_1 *periods ahead*

$E_t[(\pi_{t+n_2} - \pi^*) | \Omega_t]$ = *Anticipated deviation of inflation from the policy target with* n_2 *horizons based on all the information available at t*

$\check{r}$ = *Long-run equilibrium real interest rate*

In line with the empirical literature (Judd et al., 1998; Orphanides, 2004; Aleksandra, 2009), one-year and four-year forecast horizons n_1 and n_2 are set at 1 and 4. Eq.(2) implies that to achieve the long-run equilibrium real rate of interest, Swedish central bank would set a short-term nominal interest rate target at each decision period in response to both the forecasted departures in output and inflation based on all the information at hand at any given period t. This method of modeling mirrors Sveriges Riksbank's policy statement of a monetary policy targeting a manageable inflation bandwidth from 1% to 3%. Hence, the strengths of Swedish central bank's reactions to the two dimensions of deviation are measured by the estimates of two non-negative coefficients φ_y and φ_π.

Next, following Clarida et al. (1997) and Gerberding et al. (2005), assume that the actual nominal interest rate is partially adjusted to its target at each period, which can be modeled by a smoothing parameter $\rho \in [0,1]$ in a Error Correction Model (ECM) format:

$$i_t = (1 - \rho) i_t^* + \rho i_{t-1} + v_t \tag{3}$$

Here, as a pure white noise, an exogenous shock v_t to the actual short-term nominal interest rate i_t is introduced. Taking the partial-adaptation of nominal interest rate into account, substitute Eq.(2) into (3) and the entire model is reorganized as:

$$i_t = (1-\rho)\check{r} + (1-\rho)\varphi_y E_t(\tilde{y}_{t+1}|\Omega_t) + (1-\rho)\varphi_\pi E_t[(\pi_{t+4} - \pi^*)|\Omega_t] + \rho i_{t-1} + v_t \tag{4}$$

The inconsistent method of producing forecasts applied in a time-series dataset may create systematic bias in the analysis of such data (Carnot et al., 2005). However, it is not easy to obtain the original forecasted series used by Riksbank to make the specific interest rate adjustment decisions. Clarida et al. (2005) suggest that this type of reaction model despite being formatted in expectation operators, may be rewritten in terms of the realized values of variables. Doing so would help minimize potential errors by directly using the raw forecasted data. Accordingly, Eq. (4) is rearranged into a system as follows:

$$i_t = \alpha + (1-\rho)\varphi_y \tilde{y}_{t+1} + (1-\rho)\varphi_\pi \pi_{t+4} + \rho i_{t-1} + \varepsilon_t \tag{5}$$

$$\alpha = (1-\rho)(\check{r} - \varphi_\pi \pi^*) \tag{5a}$$

$$\varepsilon_t = -(1-\rho)\varphi_y[\tilde{y}_{t+1} - E_t(\tilde{y}_{t+1}|\Omega_t)] - (1-\rho)\varphi_\pi[\pi_{t+4} - E_t(\pi_{t+4}|\Omega_t)] + v_t \tag{5b}$$

This system condenses forecasting errors of the output and inflation gaps into a disturbance term ε_t. To ensure the validity of estimation, the errors of forecasts must not exhibit serial autocorrelation and not be consistently biased (Greene, 2008). Consistent with the findings of Clarida et al. (1997), Smant (2002) and Gerberding et al. (2005), the ACF (Autocorrelation Function) and PACF (Partial Autocorrelation Function) test results, not reported here, also indicate that non-stationarity issues are not present. Therefore, no differencing of Eq. (5) is required to guarantee stationarity. It is an I(0) process. In addition, serial correlation-robust standard errors and Durbin-Watson statistics are presented indicating a suitable model. To lend more credence to this argument, the use of real-time data would further mitigate estimable forecast errors and accumulation bias across different periods.

The endogeneity bias of explanatory variables could affect estimation validity. As a linear combination of the forecast errors and the white noise interest rate shock, the distribution of the disturbance term may not be orthogonal of the regressors. A classic solution is to incorporate selected instruments into the estimation to correct this bias (Ahn, 1995). In this paper, variables with lagged values is adopted as instruments, which might be associated with output gap and inflation fluctuation but not correlated with the interest rate shock and not contribute to the forecasting error. To better assess this use of instruments, Hansen's J statistic is reported. The uncertainty of the exact error term form also implies the possibility of heteroskedasticity that would nullify the consistency of estimates obtained though instrumental variable regression (Baum et al., 2003). A more effective estimation approach, the Generalized Method of Moments (GMM) technique, is employed in this paper consistent with Clarida et al. (1997) and Gerberding et al. (2005) to adjust for heteroskedasticity problems. The Barlett Kernal option is selected for the GMM-Time series estimation and a fixed bandwidth recommended by the Newey and West Principle is chosen.

To test whether there is significant impact of exchange rate volatility on the responsiveness of interest rates in Sweden, the forward-looking model Eq. (5) can be expanded into the following system:

$$i_t = \gamma + (1-\rho)\varphi_y \tilde{y}_{t+1} + (1-\rho)\varphi_\pi \pi_{t+4} + (1-\rho)\varphi_e e_{t+1} + \rho i_{t-1} + \mu_t \tag{6}$$

$$\gamma = (1-\rho)(\check{r} - \varphi_\pi \pi^* - \varphi_e e^*) \tag{6a}$$

$$\mu_t = -(1-\rho)\varphi_y[\tilde{y}_{t+1} - E_t(\tilde{y}_{t+1}|\Omega_t)] - (1-\rho)\varphi_\pi[\pi_{t+4} - E_t(\pi_{t+4}|\Omega_t)]$$
$$-(1-\rho)\varphi_e[e_{t+1} - E_t[(e_{t+1}|\Omega_t)] + v_t \tag{6b}$$

It incorporates a similar "deviation" term for the exchange rate by assuming that the exchange rate follows a mean reversion track as supported by Lindberg et al.'s findings on the evolutionary path of Swedish exchange rates (1994). The mean of the exchange rate sample can be used as "target" to model the assumed mean reversion behaviors. Since our sole focus is on whether the motion of exchange rate change might have induced the central bank to alter its interest rate as a response, the use of this sample mean should not dramatically affect the significance of the null hypothesis test.

If the null hypothesis that the adjustment of interest rate does not respond to the expected deviation of the exchange rates one period ahead were rejected, it would lead to a safe conclusion that the forward-looking Taylor Rule may not properly account for real policy exercises in Sweden. Consequently, this expanded Taylor-type model would have greater explanatory power. Ultimately, the GMM estimate of the parameter set including $\{\alpha, \gamma, \varphi_y, \varphi_\pi, \varphi_e\}$ would deliver important information on whether Sveriges Riksbank's interest rate operations might have different strengths of response towards each of these possible deviations and how well the inflation control could have benefited from the manipulation.

THE REAL-TIME DATASET

Orphanides (2004) holds that using ex-post data to estimate the Taylor Rule would be problematic since the updated information used to correct the existing data could be different from or even contrast with information available to central banks for making forecasts and decisions. However, applying initially published and barely revised data could not only minimize the forecast error, that is the deviation of the realized value from the official forecast, but also shape all the forecast errors in a consistent distribution (Orphanides, 2004). In line with Orphanides, this paper analyzes a real-time dataset, which is consisted of the most "up-to-date" data at previous points to best capture Sveriges Riksbank's past policy behaviors.

Data points in real-time time-series are subtracted from Riksbank's officially issued Monetary Policy Report, formerly the Inflation Report, which is published in February, July and December each year since 1993. This publication is the crucial reference for monetary policy decision-making as the Swedish central bank considers it "the background material for monetary policy decisions...when deciding on an appropriate monetary policy." However, since the release of the report occasionally deviates from its fixed publication periods, Sveriges Riksbank's press releases and an infrequently published document "Monetary Policy Updates" contribute missing data points.

According to the two models, major variables include the short-term nominal interest rate, output gap, inflation rate and exchange rate. In May, 1994, the Swedish repo rate became the most important instrument for the short-term interest rates. The repo rate in percentage is thus used in this paper. Unfortunately, the earliest issue of the Monetary Policy Report that reports the real-time output gap data was in July of 2001. This implies that the time series dataset would start from July 2001. Moreover, as the estimated output gap was reported quarterly, all the frequency other variables should be quarterly manner. Sveriges Riksbank estimated the domestic output gap following a Hodrick and Prescott (HP) filtering method, which separates the long term output growth trend of GDP from fluctuations subject to the business cycle. The output gap data in this dataset is the percentage deviation of real GDP in expenditure from the production potential.

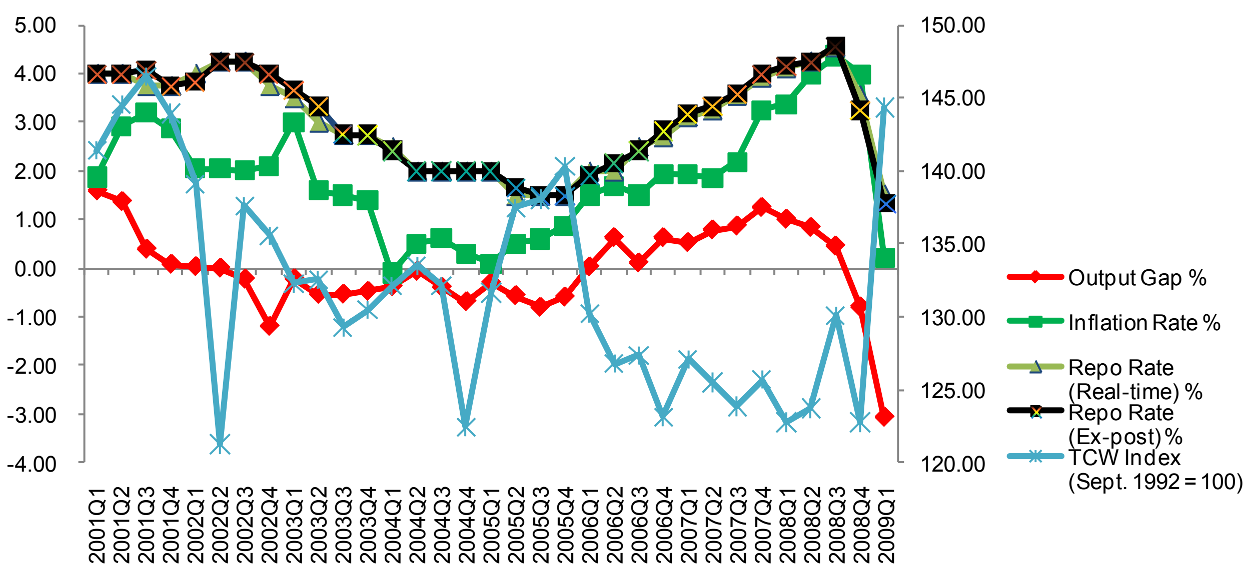
Among domestic price level measurements shown in reports, the annual percentage change of Consumer Price Index (CPI) is adopted, identified by the Riksbank as the standard inflation metric. The TCW index, SDR index, KIX index and Cross-rates are all indicators reflecting the strength of Swedish Krona against a group of comparison currencies.

The Total Competitiveness Weights (TCW) index of the Swedish Krona against a basket of other 21 currencies is chosen for analysis since this is the only exchange rate index that is consistently reported since the July 2001 report. Note that TCW has a benchmark of 100 representing the Krona strength in November 1992 when the Sweden abandoned its exchange rate peg and let the Krona start floating. A lower value of TCW amounts to a strengthened Krona.

The real-time data points are subtracted from the reports in the following way. Suppose the most recent statistics were published in one of the three issues of the Monetary Policy Report at a given quarter t and that fresh repo rate data, CPI index and TCW index of the last quarter t-1 can be located. Only closing data points of the third month of a given quarter (March, June, September and December) should be used. Real-time data for the 2003q4 observation can be found in the January 2004 issue. The data for 2004q1 and 2004 q2 could have been collected from the July report of 2004. The 2004q3 data is obtained from the December report of 2004. The most recent GDP gap data is reported with a two-quarter lag so only the realized output gap of quarter t-2 can be found in the quarter t issue. Based on all the relevant reports from the July 2001 to October 2009 issues, a premature sample containing 33 observations from 2001q1 to 2009q1 is established. The sample period dates from the time the output gap was available to the most recent report in which the GDP gap estimation was published.

The statistics for the GMM regression is also included. It contains the 2- and 4-quarter lagged values for the output gap and the 1 to 4 lagged values for CPI and TCW. In addition, the four lags of the natural logarithm of OECD crude oil price in US dollars are used to proxy the global price level. In line with Gerberding et al. (2005), 1 to 4 lagged values of the monetary aggregate annual growth rate are employed as well. Specifically, the M0 growth rate indicating the development trend of banknotes and coins in circulation is used since Sweden highly relies on cash transactions (Andersson et al., 2001). A graphical account of relevant economic time-series in Sweden is illustrated in Figure 1:

Figure 1: Visual Macroeconomic Statistics in Sweden: 2001Q1 – 2009Q1



This figure shows how the real-time inflation rate, output gap and exchange rate were interacting with the evolutions of repo rates in Sweden.

Figure 1 shows real-time and ex-post repo rates resembled each other except for slight deviations from 2002q4 to 2003q2. Further, Table 1 indicates the approximate 2% inflation rate target was achieved for 9/33 quarters and inflation was controlled within the acceptable bandwidth (1% to 3%) for 20/33 times. A disinflation snare lasted for about two years in 2004 and 2005. Thereafter, the Swedish economy faced increasing inflation pressure from the end of 2007 the first quarter of 2009.

It is clear that the exchange rate, TCW index, did not necessarily reveal an ostensible direction of movements but fluctuated between 147.5 and 122. It also exhibits an obvious depreciation trend of the Swedish Krona during the transition period from 2008 to 2009. Hence, is no visual evidence that implies its correlation with the repo rate development.

Table 1: Macroeconomic Account of Sweden: 2001Q1 – 2009Q1

Quarter	Output Gap %	Inflation Rate %	Repo Rate (Real-time) %	Repo Rate (Ex-post) %	TCW Index (Sept. 1992 = 100)	Repo Rate (GMM Fitted) %
2001Q1	1.58	1.87	4	4	141.41	3.86
2001Q3	0.38	3.2	3.75	4.08	146.49	3.77
2001Q4	0.07	2.87	3.75	3.75	143.94	3.78
2002Q1	0.03	2.046	4	3.83	139.11	4.02
2002Q2	-0.01	2.05	4.25	4.25	121.28	3.95
2002Q3	-0.23	2.01	4.25	4.25	137.59	3.85
2002Q4	-1.20	2.1	3.75	4	135.57	3.80
2003Q1	-0.22	3	3.5	3.67	132.30	3.56
2003Q2	-0.54	1.6	3	3.33	132.58	3.43
2003Q3	-0.54	1.5	2.75	2.75	129.31	3.31
2003Q4	-0.48	1.391	2.75	2.75	130.48	3.15
2004Q1	-0.39	-0.1	2.5	2.42	132.13	2.98
2004Q2	-0.07	0.5	2	2	133.51	2.87
2004Q3	-0.40	0.61	2	2	132.13	2.82
2004Q4	-0.69	0.3	2	2	122.47	2.77
2005Q1	-0.31	0.1	2	2	131.66	2.74
2005Q2	-0.57	0.5	1.5	1.67	137.49	2.72
2005Q3	-0.81	0.6	1.5	1.5	138.09	2.67
2005Q4	-0.60	0.88	1.5	1.5	140.32	2.78
2006Q1	0.02	1.5	2	1.92	130.24	2.92
2006Q2	0.62	1.7	2	2.17	126.78	3.03
2006Q3	0.10	1.5	2.5	2.42	127.35	3.22
2006Q4	0.62	1.94	2.7	2.83	123.13	3.50
2007Q1	0.52	1.92	3.11	3.17	127.09	3.81
2007Q2	0.78	1.86	3.25	3.33	125.50	4.18
2007Q3	0.86	2.19	3.55	3.58	123.86	4.59
2007Q4	1.24	3.25	3.92	4	125.67	4.94
2008Q1	1.00	3.38	4.11	4.17	122.78	4.80
2008Q2	0.83	3.98	4.25	4.25	123.71	NA
2008Q3	0.45	4.37	4.54	4.58	130.10	NA
2008Q4	-0.80	3.99	3.56	3.25	122.76	NA
2009Q1	-3.07	0.22	1.53	1.33	144.36	NA

Data Sources: Statistics Sweden http://www.scb.se/ & Sveriges Riksbank Database http://www.riksbank.com/

There exists a co-movement among the repo rates, output gaps and the inflation rates though the volatility of output gap is distinctively smaller than that of the former two variables. Another distinction is that during the last three quarters of 2008, output gap direction evolution contradicted that of the inflation rate and repo rate. There was dramatic economic volatility from 2008 to 2009, which makes the tentative GMM estimation results less than satisfactory. The unreported result implies that the specified models cannot capture this fluctuation since indicators including R-squared, Instrument Over-identifying Restriction, Durbin-Watson statistic would not render any statistical power if the observations covering the last three quarters of 2008 and the first quarter of 2009 were included in the regression. Eventually, these observations marked by severe volatility are dropped and the sample size shrinks to 29 observations. These outliers might be attributable to distorted impacts upon the Swedish economy that were brought by the worldwide economic instability. Updated theories are required to model these periods of volatility, and represent an interesting topic for future research.

REGRESSION RESULTS AND INTERPRETATION

The GMM estimations of the two models that aim to capture the Swedish central bank's interest rate operations are based on the quarterly real-time time-series data. The sample is consisted of 29 observations from 2001q1 to 2008q1. Table 2 displays the estimation result of Sveriges Riksbank's interest rate reactions to the expected output and inflation deviations based on the baseline forward-looking Taylor-type model Eq. (5).

Table 2: GMM Estimation of the Baseline Model - Equation (5)

Coefficients	**α**	**ρ**	**φ_π**	**φ_y**	**π^***
Estimates	0.54***	0.85***	-0.42	1.68***	2%
Model Assessments	**Adjusted R^2**	**SEE**	**DW stat**	**J-stat**	
Estimates	0.90	0.29	1.16	0.32	

*This table reports parametric estimates of the forward-looking Taylor-type interest rate reaction function over a sample period from the first quarter of 2001 to the first quarter of 2008. *** indicates the significance at 1 percent level. The instruments included in this regression are the 2 and 4 lagged values of output gap, 1 to 4 lagged values of inflation rates, M0 growth rates, and the OECD crude oil price in logarithm.*

The results suggests that the J statistic cannot reject the null hypothesis at the 95% confidence level that the instruments satisfy the orthogonality condition. It ensures the validity of the Over-identifying restrictions. Additionally, a 90% adjusted R-squared might be a good sign of model fitness. However, the regression is subject to a series of serious problems. First, it is implausible to conclude that the point estimation of the coefficient on Riksbank's interest rate reaction strength to the expected inflation rate deviation is not statistically significant. The Swedish central bank always highlights its commitment to target the inflation at 2% and to maintain the stability of low price. Second, the value of the Durbin-Watson Statistic suggests that there is a high likelihood this model suffers from positive serial correlation.

Nevertheless, the Rikesbank's experiences during the 8 sample years cast strong doubt upon the first hypothesis that the classic Taylor was well performed in Sweden. Such a finding would be consistent with what Gerberding et al. (2005) discovered about the German Bundesbank. Hence, we are motivated to discover why the estimated partial effect of inflation does not pass the significance test, which contradicts the Swedish central bank's policy principle. Reasonably, the under-specification problem might exist in the modeling of Swedish monetary policy exercise in Eq. (5).

As a small open economy that used to defend its currency independence by maintaining an exchange rate, Sweden was concerned with the consequences of integrating into the euro area and sacrificing its economic stability (Sveriges Riksbank, 2009). The extent that Sweden still regards the stability of its currency pivotal to its economic health would be worth exploring. Therefore, a second test of whether the Swedish central bank adjusted its repo rate in response to the exchange rate fluctuation is performed through the estimation of the expanded Taylor-type model Eq. (6). The results are shown in Table 3.

The J statistic again confirms the validity of instrument selection. A three-percentage point increase in the adjusted R-squared compared with the previous results lends more credence to the explanatory power of this expanded model. Evidently, incorporating the expected exchange rate gap into the right hand side of he baseline model and adding four lags to the instrument variable set fine-tuned the serial correlation problem by hiking the DW statistic to a statistically safe range. Furthermore, it is remarkable that all coefficients are significant at the 1% level.

The estimated coefficient of Riksbank's reaction to the expected inflation deviation, 2.22, is three times larger than its response towards the production gap estimate 0.73. This implies a strong inflation-oriented policy, which echoes Sveriges Riksbank's inflation-targeting pronouncement. Based on the estimate γ = 0.94, the hypothesized mean of exchange rate TCW index, and an explicit inflation target 2%, the estimate of Swedish long-run real interest rate in equilibrium is 4.30%. This amount is credibly close to the European Central Bank (ECB)'s official estimation of around 4-5% according to 2001 – 2007 statistics (ECB, 2009).

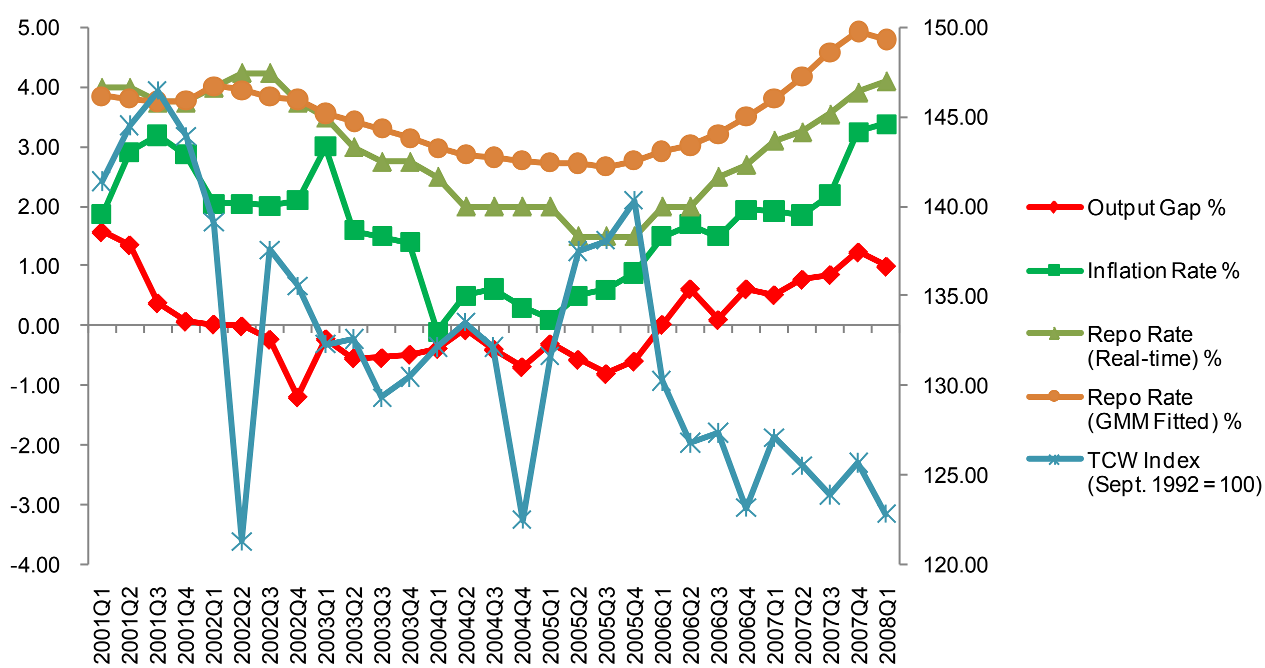
Table 2: GMM Estimation of the Expanded Model - Equation (6)

Coefficient	γ	ρ	φ_π	φ_y	φ_e	e^*	$\check{r}$	π^*
Estimate	0.94***	0.95***	2.22***	0.73***	-0.13***	131.53	4.30%	2%
Model Assessments	**Adjusted R^2**	**SEE**	**DW stat**	**J-stat**				
Estimates	0.93	0.24	2.17	0.31				

*This table reports the parametric estimates of the forward-looking Taylor-type interest rate reaction function – the expanded model over a sample period from the first quarter of 2001 to the first quarter of 2008. *** indicates the significance at 1 percent level. The instruments included in this regression are the 2 and 4 lagged values of output gap, one to four lagged values of inflation rates, four lags of TCW index, M0 growth rates, and the OECD crude oil price in log form. The sample mean of TCW index is131.53.*

Moreover, the significantly negative coefficient -0.13, though small, provides crucial information on the Swedish central bank's interest rate reaction to expected exchange rate volatility. This estimate can be interpreted as, given a certain level of deviation of expected inflation and output, a one point increase in the expected TCW index relative to its mean would induce the Sveriges Riksbank to lower its repo rate by 0.13 percentage points. In other words, the anticipated depreciation of Swedish Krona was associated with a downward adjustment of the Swedish nominal repo rate. Interestingly, Sveriges Riksbank never announced a similar exchange rate targeting policy after abandoning the long-guarded exchange rate regime. However, the evidence does reject our null hypothesis that the central bank spared no effort to maintain the domestic currency stability under the floating exchange regime by adjusting the repo rate.

Figure 2: Policy Inference from Model Estimation: 2001Q1 – 2008Q1



This figure presents an empirical framework for model explanations by showing how the actual deviation of repo rate adjustment from the model benchmark might be associated with the inflation and exchange rate volatilities in Sweden.

It is clear that the inflation was well managed during the periods from 2001 to the first quarter of 2003 as it was bounded within the acceptable bandwidth between 1% and 3%. Meanwhile, the real repo rate was tightly controlled and the fitted data via the well-performed model Eq. (6) well captures the actual trend of repo rate development. Noticeably, Krona severely appreciated since 2001q3. According to the fitted path of repo rate growth suggested by Eq. (6), it implies that if the appreciation was anticipated, the repo rates should be mildly adjusted upward. However, it turned out the actual repo rates in 2002q2 and 2002q3 experienced an over-adjustment that simultaneously coincided with a dramatic exchange rate fluctuation, an unsuccessful case of repo rate maneuver. Unfortunately, while the Swedish economy again was confronted with the currency appreciation pressure since 2002q4, the repo rate dropped as conflicting a positive rise recommended by the expanded Taylor model. However, since the domestic price level simultaneously increased, the repo rate should be upward adjusted as implied by the model as well. Thus, the conflicted movement effects could be discounted so that actual repo rates matched the fitted repo rates during the periods 2002q4 and 2003q1. It concludes that the inflation and exchange rate volatility was well harnessed between 2003q1 and 2003q2 too.

Disinflation was getting worse since 2003q2 when the repo rate was supposed to be lowered. However, the actual repo rate adjustment an overreaction. The lower level of the actual repo rate compared to the fitted interest rate might be responsible for the failure of interest rate operations. This not only failed to retain the price level at the 2% target but also could have provoked the roaring of domestic exchange rate between 2003q2 and 2005q4. Hence, the improper manipulation of repo rate might be a crucial reason for ongoing economic volatility during that period. Nonetheless, this story did not end immediately. Though the repo rate began to increase, repo rates could still be considered too low to bring the increasing interest rate to a predicted benchmark. Consequently, the central bank failed to achieve price stability and could have entailed the inflation accumulation and Krona appreciation.

CONCLUSION

The time-series analysis Sweden suggests: 1) the classic forward-looking Taylor rule, by which the short-term nominal interest rate is adjusted in response to expected inflation deviations and output gaps, is insufficient to capture the Swedish Sveriges Riksbank's interest rate exercise for inflation control from 2001 to 2008. 2) Evidence shows that Riksbank initiated additional efforts, though smaller and obscured, to cope with the volatility of the Krona. Thus, the Swedish central bank is more likely to implement an expanded or locally adjusted Taylor Rule as its interest rate operation method for monetary policy. The Swedish repo rate adjustment aimed at domestic price stability while simultaneously reacted to the expected output gap and exchange rate variation. 3) For a small open economy like Sweden, the reason interest rates could be manipulated in partial response to exchange rate fluctuations might be attributed to the fact that the interest rate is crucial for stability of the domestic currency.

Evidence during the eight-year time span informs us that the Swedish central bank did not effectively bound the domestic inflation in most of the periods or the underlying exchange rate concern barely contributed to the stability of its currency valuation. Two explanations may shed light on how we may evaluate the Sveriges Riksbank's interest rate operation practice.

One explanation is a failure of the expanded Taylor rule practice. Then the classic Taylor rule by which the interest rate should solely react to expected inflation and output gaps without any other policy concern such as exchange rate volatility should be a competitive candidate for a more efficient monetary policy. A supportive argument is that the extra manipulation of interest rates to achieve exchange rate stability may simultaneously sacrifice monetary control (Aguilar et al., 2002). Therefore, the loss of monetary control might further deteriorate the fundamentals of a real economy such as the domestic price level, which may create a dilemma for the central bank. They may need to make compromises between inflation and exchange rate targeting. The positive effects of the interest rate adjustment to control the inflation could be partially downgraded. Consequently, the central bank's capability to inflation target could be negatively affected. It is still cautious to jump into this conclusion because previous literature demonstrates that a strong reaction to the inflation gap is empirically effective in controlling inflation. It may never justify that other reaction considerations are redundant for inflation control.

A second explanation is a theory of the advent of a worldwide economic disorder. The reason why both inflation and exchange rate targeting did not work in the last sample period might be attributed to the fact that the last three years in the first decade of the 21th century called for global macroeconomic instability and financial crisis. This might aggravate the real economy of a country and severely impacts small open economies that are associated with more economic disturbances brought by global chaos. Repo rates might have been set too low in comparison to the benchmark proposed by the policy rule. This can be partially explained by the argument that people's forecast errors gradually accumulated because of an unawareness of the approaching economic crisis that in turn misinformed policy implementation. Therefore, the poor policy performance is simply attributable to the imprecise adjustment of the repo rate in response to the forecasted inflation rate, output and exchange rate deviations.

Further research should examine what analytical framework the central banks' interest rate reactions to the exchange fluctuation may be justified or needless and to what extent the global economic disturbances affected the interest rate operation efficiency.

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BUSINESS GROUPS' FINANCIAL PERFORMANCE: EVIDENCE FROM PAKISTAN

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ABSTRACT

We examine comparative financial performance of business groups in Pakistan employing samples of firms listed on the Karachi Stock Exchange. Our descriptive results show that group firms are larger in size and have higher operating profits. Group firms also exhibit lower sales growth variability over a five year period than non-business group firms. Our statistical analysis reveals that business group firms have significantly higher liquidity and significantly lower financial leverage than the non-business group firms. More importantly, business group firms are more profitable (higher ROA) than non-group firms. Our results based on superior financial performance of business groups indicate that business groups in Pakistan are efficient economic arrangements that substitute for missing or inefficient outside institutions and markets, hence supporting the market failure argument.

JEL: G00, G32

KEYWORDS: Business Group, Financial Performance, Emerging Economy, Pakistan.

INTRODUCTION

The primary purpose of our study is to examine business groups' comparative financial performance in an emerging economy. Our main argument of this paper is that business groups are efficient institutional arrangements in an emerging economy that successfully substitute for the failed markets such as capital, labor, and product and dysfunctional institutions such as legal, enforcement and monitoring.

Empirical evidence on the impact of group affiliation on firm performance is positive to mixed for emerging and transition economies (Chang and Choi, 1988; Keister 1998; Perotti and Gelfer, 2001; Khanna and Rivkin, 2001; Ma, Yao, and Xi, 2006). For example, Perotti and Gelfer (2001) use Tobin's q as a measure of performance to compare group firms with non-group firms in Russia and find higher Tobin's q values for the group firms. Similarly, Keister (1998) examines the performance of business groups that were formed in China, in the 1980s, with the support and encouragement of the government. He finds that the productivity and financial performance of these groups improved significantly. He also finds that among groups, the ones with more centralized organizational structure did better than the others. Evidence on group performance from advanced economies is rather mixed. Various studies found that performance measures of group-affiliated firms are either significantly lower than or are not significantly different from those of the unaffiliated firms (Caves and Uekusa, 1976; Gunduz and Tatoglu, 2003; Cable and Yasuki, 1985; Weinstein and Yafeh, 1995, 1998).

Khanna and Rivkin (2001) define a business group as, "…a set of firms which, though legally independent, are bound together by a constellation of formal and informal ties and are accustomed to taking coordinated action." Encarnation (1989) describes the relationship among firms in Indian 'business houses,' as "[I]n each of these houses, strong social ties of family, caste, religion, language, ethnicity and region reinforced financial and organizational linkages among affiliated enterprises." The business groups in Pakistan (previously known as 'twenty-two families,' hereafter, named 'The families') are informal combinations of legally independent business entities run by families. The family patriarch is the dominant shareholder and manager, whereas the immediate and distant family-members help operate various firms within the business group. It is common for these family members to belong to the same religious sects or communities. Some examples of major communities are the Chiniotis, Memons, Ismaeelis/Aga Khanis – families, with business origins (primarily trading, some in manufacturing) in parts of India, later migrated to Pakistan. A view of the typical family tree: grandfather-sons –grandsons; usually, all are involved in family business. See more on this in White (1974) and Papanek (1972). Though a firm belonging to one group is not a member of another group, it is quite common for family members of a group to hold director seats in firms affiliated with other groups (known as interlocking directorates). Most business families operate in multiple industries, and similar to groups in some other countries, have no informal or official designation and are not state regulated.

There is only one known study that examines the financial performance of 43 business families (65 affiliated firms) and 33 nonmember firms involved in manufacturing in Pakistan during 1964-1968 period (White, 1974). White's empirical analysis found no significant relationship between the average profit rates (over 1964-1968 period) of family-affiliated firms and non-family controlled firms and the firm-specific variables such as size of the firm, industry membership, or family control. The results of his study also show no statistically significant difference between the financial performance (measured as the 'after-tax net profits' regressed on 'growth of total assets') of family and non-family controlled firms during the 1965-1968 periods. Though, White's additional tests did show a strong positive link between the state sanctioning of the licenses (licenses to enter an industry, capital goods import licenses, and foreign exchange licenses) and business families leading him to conclude that the emergence and existence of business families in Pakistan can be unambiguously explained by political economy hypothesis.

We use samples of business group and non-business group firms listed on the Karachi Stock Exchange of Pakistan in two distinct years (1998 and 2002). Our descriptive analysis based on median values (that control for extreme values) shows that group firms are larger in size and have higher operating profits. Group firms also exhibit lower sales growth variability over a five year period than non-business group firms. In addition, we find that business group firms' liquidity is significantly higher than that of non-business group firms and have significantly lower financial leverage (risk). Our statistical analysis results based on ROA (an accounting performance measure) show that group firms are more profitable than non-group firms for year 1998, thereby providing evidence that, unlike in the developed world, group firms in an emerging economy are efficient economic arrangements. Our Tobin's q (a market valuation measure) statistical results show that the mean values are significantly lower for group firms when compared to non-group firms. This divergence between ROA and Tobin's q suggests that market participants may perceive firms affiliated with business groups to have lower transparency, thereby discounting the value of group firms even though group firms are more profitable than non-group firms. On same lines, Claessens et al., (2000) examine a sample of East Asian corporations and find similar negative association between control rights of family businesses and market valuation (measured as Tobin's q). That is, higher the family control rights lower the Tobin's q (see more on this in Khanna and Rivkin, 2000).

More importantly, our ROA results support the market failures/institutional void argument and suggest that the business groups in Pakistan are efficient economic arrangements that provide viable substitutes for missing or inefficient institutions and markets. Our sector-level results generally are not different (but weaker) from those of the full samples.

The rest of the paper is organized as follows: Section 2 presents a review of literature and background followed by a set of research questions. Section 3 provides details about data selection and research methodology. Section 4 discusses the results and findings, and Section 5 concludes the paper with a summary of findings.

LITERATURE REVIEW AND BACKGROUND

The evolution of business groups and their performance has been a subject of both analytical and empirical research in accounting, finance and management literature. Most common is the view that business groups performance depends on the institutional contexts of the economy they exist in. Based on the theories we discuss below, it appears that business groups should perform better than independent firms in countries with weak financial institutions and inefficient markets because they can internalize functions of those institutions and markets. Leff (1976) was one of the earlier studies that characterized business groups as performing the "principal functions of a capital market" in less developed countries and suggested that "because of the Groups' quasi-rents and monopoly power in product markets, their returns are likely to be above the economy-wide average". Khanna and Palepu (1999) make a case for business groups to proactively substitute for weaknesses in market institutions and infrastructure in emerging markets. There is also evidence that group members provide capital to failing or financially weaker members of the group (e.g. Morck and Nakamura (1999) and Gopalan et al. (2007)). Cestone and Fumagalli (2005) propose that groups use the flexibility of their internal markets to respond efficiently to threats from product market competitors or potential entrants. Internalization of markets has, however, been criticized for creating agency problems like rent seeking by the managers, expropriation of rights of minority shareholders or misallocation of investment opportunities (e.g. Scharfstein and Stein (2000), Johnson et al. (2000) and Rajan et al. (2000)).

The existing theories to understanding the factors that provide meaningful insight into the activities of business groups in the emerging economies are: market failure/institutional void, social structure, and resource-based/political structure view (Guillén, 2000; Hoskisson, et al., 2000).

Market Failure/Institutional Void Argument

According to Williamson (1975, 1985), markets and firms exist to execute a set of transactions. These transactions will take place depending upon which mechanism (that is, market or within firm) can execute it more efficiently. The efficiency or lack thereof (lower or higher transaction costs) is determined by the institutional factors that surround the transactions. This idea is also elaborated in Klien et al. (1978). In advanced economies these institutional factors are highly developed whereas, in developing economies such as Pakistan, they are primitive and malfunctioning.

Leff (1978) focuses on the institutional factors in the developing countries and proposes that the existence of a business group, as an institutional mechanism, is a response to market failure. Leff identifies three market imperfections to explain group pattern of industrial organization in developing countries: 1) appropriation of quasi-rents due to access to scarce and imperfectly marketed inputs such as information and capital, 2) expansion into diversified product lines because of the absence of markets for risk and uncertainty, and 3) a pattern of vertical integration helping overcome problems associated with various forms of oligopoly and monopoly.

Transaction cost theory is an integral part of the market failure argument. Economists identify two primary sources of transaction costs: information asymmetry and contracting problems. Buyers and sellers will have deficient information about the true underlying value of the good or service. Very high prices could be offered for very low quality goods or services and vice versa. If the market does not possess institutional mechanisms to reduce the information asymmetry then the transaction costs will stay very high (Akerloff, 1970). Firms in emerging economies, such as in Pakistan, have deficient corporate governance mechanisms that lead to very high agency costs.

Social Structure Approach

The social structure approach focuses on the economic organization as a function of the social order and argues that the emergence and continued existence of the business groups can be linked to axes of social solidarity such as ethnicity, kinship, region political party, and religion (Granovetter, 1994). Leff (1978) suggests that business groups are mostly 'linked by relations of interpersonal trust, on the basis of a similar personal, ethnic or communal background'. Kester (1992) also describes the 'implicit contracts' which stem from the long term contacts of business community with industrial groups. We find ample evidence (explained later) of this in the context of Pakistan.

Political Economy Approach

In the case of emerging economies, researchers focus on the relationship between political power structures and emergence (and continued existence) of business groups (Encarnation, 1989). Groups are viewed as counterproductive rent seekers that destroy rather than add value (Ghemawat & Khanna, 1998). This view highlights the disproportionate diversion of scarce resources toward business groups in lieu of their cozy relationship with the political establishment, mostly at the cost of the larger population. In the context of Pakistan, White (1974) argues that the acquisition and maintenance of economic power requires existence of significant scale economies barriers and scarce resources barriers. White suggests that scarce resource barriers created by the government of Pakistan in the form of foreign exchange licenses, investment licenses, and licenses to import capital goods, raw material, spare parts, and consumer goods from abroad, helped business families and groups take root and consolidate during the 1950s and later gained dominance in the 1960s.

Recent research incorporates some of the above approaches and provides mixed to supporting evidence. For example, Khanna and Rivkin (2001) examine the impact of group affiliation on financial performance (measured as operating returns/assets) of firms in 14 emerging economies in Asia, South Africa, and Latin America (sample does not include Pakistan). After controlling for firm and industry fixed effects, they find that the mean of the estimated group effects is positive (and statistically significant) in four countries, and negative (and statistically significant) in one country only. More importantly, Khanna and Rivkin find that group membership explains a higher variation in profitability than the one explained by industry effects in 13 out of 14 countries sample. Chang and Choi (1988) focused on the group size effect and performance and find that the firms affiliated with the largest four Korean chaebols perform significantly better than the nonaffiliated firms and firms affiliated with the small chaebols. Marisetty and Subrahmanyam (2010) find support for 'tunneling' hypothesis for explaining greater IPO under-pricing for firms affiliated with business groups than non-affiliated firms in India.

Khanna and Rivkin (2000) argue that the with-in country as against the cross-country examination of business group phenomenon is more reliable since the definition of a group, the consensus about the definition, and the degree of tightness of control varies significantly across countries. Thus, this provides us the motivation to examine the question of group performance on an individual country level such as Pakistan.

Business Groups in Pakistan

It was during the1960's military regime of Ayub Khan that the then Chief Economist of the Planning Commission of Pakistan, Dr. Mahboob ul Haq, on April 21, 1968, issued a list of 22 wealthiest families of Pakistan. Dr Haq claimed that these families controlled 66 percent of the industrial complexes and owned 87 percent of the share in the banking and insurance industries of Pakistan. His list of twenty-two families (business groups) were: Dawood, Saigols, Adamjees, Colony, Fancy, Valika, Jalil, Bawany, Crescent, Wazir Ali, Gandhara, Ispahani, Habib, Khyber, Nishat, Beco, Gul Ahmed, Arag, Hafiz, Karim, Milwala, and Dada. These families invested their fortunes mostly in those businesses in which they could apply their greatest expertise. Habibs laid the foundations of Pakistan's first and largest bank, Habib Bank Limited, and Adamjee Group formed the Muslim Commercial Bank. During the Ayub Khan era, these twenty-two families consolidated their holdings and flourished until their unraveling during the nationalization wave of the early 1970's instituted by then elected Prime Minister, Z. A. Bhutto.

During the mid-1950s, the military government of Pakistan, headed by Ayub Khan, actively encouraged domestic production of manufactured goods (primarily textiles) instead of agriculture (cotton, wheat, rice and jute) as the future economic growth strategy for an agrarian economy. Toward this end, Pakistani government provided extensive incentives for the business families in the form of tariffs, foreign exchange licenses and voucher systems, quotas, and a highly advantageous tax regime. This in turn led to the development of a class of industrialists, later known notoriously as the *twenty-two families*. Pakistan, during that period (late 1960s) was declared as one of the success stories among the less developed countries (White, 1974). According to Omar (2003),

> "The Ayub Khan era was the 22 families' heyday. They flourished mightily in that era, setting up one industry after another and expanding into sector after sector [;] until it seemed that they virtually controlled the economy. Banking, insurance, textiles, consumer goods - everything was grist for their mill."

After the war between Pakistan and India in 1971, the East wing of Pakistan declared itself an independent nation, Bangladesh. In 1972, in the West wing of Pakistan (now called Pakistan), the popularly elected government of Z.A. Bhutto replaced the military regime of Yaha Khan. The first order of business of the Bhutto government was to nationalize most of the so-called *twenty-two families* holdings (that included highly efficient and well-managed banks and insurance companies) leaving just the textiles related firms in the families' hands. He nationalized as many as 31 key industries; 13 banks; 12 insurance companies; 10 shipping companies and two petroleum companies (Hussain, Dilawar, daily Dawn, December 9, 2007). The devastating impact on the fortunes of these families in Pakistan was immediate.

It was only in the late 1980s that the political government of Nawaz Sharif (himself a member of a large business family) started returning some of the nationalized units back to these families. During the 1990s, the business environment turned friendlier toward family businesses. Some new business families emerged and the existing families reconstituted themselves and started expanding and moving in to new areas like automobiles and cement. The military regime of General Pervaiz Mushraf continued the process of liberalization by privatizing state-owned enterprises such as banks and heavy-tool industries.

Based on the above discussion, we examine *two* broad research questions related to business groups' financial performance in Pakistan.

> *Research Question 1*: Is there a difference in key financial characteristics of group and non-group firms in Pakistan?

> *Research Question 2*: Is there a difference in *accounting-based* financial performance of group and non-group firms in Pakistan?

Specifically, we used the accounting performance measure, Return on Assets (ROA), to address the second question.

RESEARCH DESIGN AND METHODOLOGY

The initial sample was based on all firms listed on the Karachi Stock Exchange (KSE) for year 1998 and for year 2002 (selected as test years) and whose data were available on VISTA (Vital Information Services Total Analysis). We verified the data for correctness from firms' annual reports on a sample basis. In the next phase of the sample selection process, we separated these firms into group and non-group sample firms. We used various sources and methods to both identify known business groups and to confirm a firm's affiliation with a group. The methods we employed were: accessing group web sites, calling the firms themselves, referring to the book 'Who Owns Pakistan?' by Shahid-ur-Rehman (1998), and relying on the common knowledge in the market place and among business circles. We were able to identify 62 groups for our study.

Table 1: Sample Selection

	Group Firms		Non-Group Firm	
	Years		Years	
	1998	2002	1998	2002
Initial Sample-Listed Firms	274	259	278	251
Non-Operating	(6)	(9)	(12)	(17)
Missing Financial Data Or Negative Values	(23)	(33)	(68)	(74)
Reporting period not Equal to 12 months	(0)	(0)	(2)	(0)
Final Sample	245	217	196	160

This table shows sample selection process for the study. Group firms are those which belong to a business group and Non-Group Firms are those which do not belong to any business group.

As shown in Table 1, we excluded firms from our initial samples that were in banking, finance, real estate and insurance. Next, we eliminated firms with reporting period of less than or greater than 12 month or firms that were not operational during a period or firms controlled by multi-national companies or by the government of Pakistan. We also deleted firms with negative values or missing financial data (zero values) in VISTA. The group firms' samples (and years) were: 245 (Year 1998), 217 (Year 2002), respectively, whereas, the final samples of non-group firms (and years) were: 196 (Year 1998) and 160 (Year 2002), respectively.

In order to indulge in a more meaningful exercise, we chose two distinct test years (1998 and 2002) as the basis of our examination. We selected year 2002 because most of the significant corporate governance developments in Pakistan took place after the year 1998. The Securities and Exchange Commission of Pakistan (SECP) was formed in 1999 as a part of the capital market regulation reforms to monitor the activities of corporate and capital markets. The SECP introduced a set of proposals in the form of a Code of Corporate Governance, whereby listed companies would be managed in compliance with international best practices. The final draft of the Code was issued by SECP on March 28, 2002 to be effective for year-end 2002. Thus, annual financial disclosures of year 2002 are expected to capture changes in corporate governance mechanisms since 1998.

Table 2 we provides a list of different financial measures (accounting- and market-based measures) that will be used to examine research questions one and two. Table 2 provides the definition of the accounting measure of firm's financial performance, such as operating profit margin, return on equity (ROE), and return on assets (ROA), and the market measure of firm's performance, such as dividend per share, price to earnings ratio, and Tobin's q. The metric ROA (accounting-based) was used to examine the second research question. The choice of these variables is consistent with measures employed in prior studies (Gunduz and Tatoglu, 2003).

Table 2: Financial Characteristics

Variables		Definition
Short-term Liquidity Ratio		
a.	Current Ratio =	Current Assets/Current Liabilities
Financial Leverage		
b.	Debt to Assets =	(ST Debt + LT Debt)/Assets
c.	Debt Leverage=	Total Debt to Equity
Accounting Performance Measures		
d.	Gross Profit Margin =	Gross Profit/Revenues
e.	Operating Profit/Sales =	Operating Profits/Sales
f.	Net Profit Margin =	Net Profit/Sales
g.	ROA =	Operating Profits/Total Assets
h.	ROE =	Net Income/Total Shareholders' Equity
Stock Market Performance Measures		
i.	Dividend to Net Profit =	Dividend/Net Profit
j.	Dividend per Share =	*No change; value as entered by VISTA*
k.	EPS =	Earnings / Shares Outstanding
l.	Share Price/EPS =	Price Per Share/ Earnings Per Share
Stock Market Measure of Performance		
m.	Tobin's q =	(Shares O/S * Share Price + BV of Total Debt)/Assets

This table provides definitions of financial measures used to gauge performance of firms in the study.

Table 3 (Panels A, B, and C) provides two distinct years' (1998 and 2002) descriptive statistics (mean, median, and standard deviation) of various financial measures (total assets, sales, total debt, operating profit, debt-to-assets, debt/equity, dividend per share, EPS, and revenue growth percentage) for business group and non-business group samples. Negative and zero values in the data for all firms were excluded while calculating these financial measures. As shown in Table 3, for years (1998 and 2002), the business group firms' mean and median values of total assets and total sales (a proxy for size) are larger than those of the non-business group firms. Thus, on average, group firms are larger than non-group firms. Table 3 also reports leverage values for both samples. For both years, group firms appear less leveraged than non-group firms. In addition,

Table 3 results show that if we control for extreme values (that is, focus on median values rather than mean values) then group firms' median values of operating profits are higher than those of the non-business group firms. That is, business group firms appear more profitable than non-business group firms. Notably, group firms' median earnings per share in both periods (year 1998 and 2002) are higher than those of the non-group firms.

The Table 3, Panel C shows that year-over-year (1998-2002) revenue growth of group firms is more stable and is higher over a five-year cumulative basis when compared to revenue growth of non-group firms. This reflects better future prospects for group firms as compared to non-business group firms.

RESULTS

Table 4 shows comparative analysis of different selective financial measures of firms in business group and non-business group samples for the two selected test years (year 1998 and year 2002). Table 4 also reports for these two test years, mean rank values of financial measures for both these samples and the associated Mann-Whitney Z-test statistics of differences in mean ranks. As mentioned earlier, we believe that an examination of year 2002 would provide us some further insight about the changes that have occurred in the economic and the capital market environment of Pakistan since 1998.

Table 3: Selective Summary Statistics

Panel A: Business Group Firms vs. Non-Business Group Firms – Year 1998						
	Business Group			**Non-Business Group**		
Variables	**Mean**	**Median**	**Std. Dev**	**Mean**	**Median**	**Std. Dev**
Total Assets	994.70	564.49	1,420.41	899.48	291.55	4,608.20
Total Sales	928.65	585.88	1,246.56	723.38	244.15	2,390.27
Total Debt	400.95	234.98	615.46	405.24	142.68	2,485.04
Operating Profit	103.95	61.42	161.85	219.91	29.30	1,363.17
Debt-to-Assets	0.42	0.41	0.21	0.61	0.44	1.86
Debt/Equity	1.78	1.21	1.98	4.16	1.33	9.96
Dividend/Share	2.30	1.75	1.99	2.46	1.50	2.70
EPS	4.37	2.92	4.50	5.23	2.31	7.95

Panel B: Business Group Firms vs. Non-Business Group Firms – Year 2002	**Group Firms**			**Non-Group Firms**		
Variables	**Mean**	**Median**	**Std. Dev**	**Mean**	**Median**	**Std. Dev**
Total Assets	1,430.90	667.15	2,167.06	1,523.98	429.87	5.654.75
Total Sales	1,402.09	753.02	2,113.70	1,145.61	375.42	3,178.54
Total Debt	578.71	278.00	989.41	769.89	184.18	2,895.75
Operating Profit	167.51	74.20	251.97	243.73	39.94	1,002.62
Debt-to-Assets	0.47	0.43	0.37	0.54	0.47	0.40
Debt/Equity	2.27	1.15	4.49	4.58	1.51	10.32
Dividend/Share	2.76	1.50	3.14	3.76	2.00	5.34
EPS	5.72	3.96	6.63	5.61	1.94	9.79

Panel C: Average Revenue Growth Percentage Years 1998-2002					
	98-99	**99-00**	**00-01**	**01-02**	**5-Yr.Growth**
Group Firms	7.32	7.19	6.91	8.24	29.66
Non-Group Firms	-1.23	16.65	10.62	3.02	29.06

This table shows the mean, median, and standard-deviation of key financial characteristics for group and non-group firms for year 1998 and year 2002. All firms were listed on the Karachi stock exchange during the test periods. Penal A describes the data for the year 1998 and Penal B for the year 2002. The definitions of variables are provided in Table 2. Panel C reports the annual percentage growth in revenues based on the full-sample- period (1998-2002) for Group and Non-Group firms.

As shown in Table 4, for the year 1998, mean rank value 237.01 of current ratio of business group firms is higher than the year 1998 mean value of 200.99 for the non-group firms. This difference in mean rank is statistically significant at the .01 level with a Z-value of 2.949. Similarly, for the group firms, the year 2002 mean value 195.38 of current ratio is higher than the year 2002 mean value of 176.72 for the non-group firms. This difference in mean rank is significant at the .10 level with a Z-value of 1.649. This suggests that group firms, on average, have generally maintained their higher liquidity and short-term solvency when compared to the non-business group sample firms over these two distinct points in time. Thus, business group firms, in the short-term, appear to be less risky than non-business group firms.

Table 4 also reports the financial leverage of both samples. We measure this leverage (long-term solvency) using debt-to-asset and debt-to-equity ratios. As shown in Table 4, for the group firms, the year 2002 mean-value 158.78 of debt-to-asset ratio for the group firms is lower than the year 2002 mean value of 179.14 for the non-group firms. This difference in mean ranks of the two samples for financial leverage variable is marginally significant at the .10 level with a Z-value of 1.907. In other words, the non-business group firms have taken on more leverage when compared to the financial leverage of group firms over a passage of four years and appear to be riskier than the business group firms.

Table 4: Comparative Financial Analysis of Business Group versus Non-Business Group Firms

Financial Characteristics	Year 1998 Group n = 245 Mean Rank	Non-Group N = 196 Mean Rank	Z -Test Statistics	Year 2002 Group n = 217 Mean Rank	Non- Group n = 160 Mean Rank	Z-Test Statistics
Current ratio	237.01	200.99	-2.949***	195.38	176.72	-1.649*
Debt to Assets	206.69	214.22	-0.632	158.78	179.14	-1.907*
Debt Leverage	141.11	150.71	-0.959	112.72	129.71	-1.864*
Gross Profit Margin	186.25	188.04	-0.158	159.30	168.55	-0.870
Net Profit Margin	110.98	113.76	-0.311	130.72	122.29	-0.888
Oper.Profit/Sales	142.85	143.85	-0.039	146.55	132.24	-1.442
Return on Assets	155.71	133.77	-2.141**	146.26	140.47	-0.576
Return on Equity	107.94	99.29	-0.979	111.41	115.61	-0.469
Dividend/Net Profit	64.94	71.02	-0.861	87.34	91.2	-0.461
Dividend/ Share	69.72	64.79	-0.701	87.44	92.85	-0.638
EPS	116.75	106.71	-1.119	135.56	114.67	-2.205**
Share Price/EPS	109.77	118.42	-0.964	120.87	130.26	-1.004
Tobin's q	211.02	235.96	-2.036**	176.29	204.98	-2.531***

*This table shows mean ranks of financial indicators of firms affiliated with groups compared to those not affiliated to any group in Pakistan for the year 1998 and 2002. The differences between the two samples are evaluated using Mann-Whitney U - Wilcoxon Z, Test Statistic with ***, **, and * indicating significance at the 1, 5 and 10 percent levels, respectively. The definitions of the characteristics are:*
*Current Ratio=Current Assets/Current Liabilities; Debt to Assets = (ST debt + LT Debt)/Assets ; Debt leverage = Total debt to Equity; Gross Profit Margin = Gross Profit/ Revenues; Operating Profit/Sales = Operating Profits/Sales; Net Profit Margin = Net Profit/Sales; ROA = Operating Profits/Total Assets; ROE = Net Income/ Total Shareholders' Equity; Dividend to Net Profit = Dividend/Net Profit; Dividend per Share = No change, value as entered by Vista; EPS = Earnings/ Shares Outstanding; Share Price/EPS = Price Per Share/ Earnings Per Share; Tobin's q = (Shares Outstanding * Share Price + BV of Total Debt)/ Assets*

As shown in Table 4, we do not find any difference in the mean rank values of the gross profit margin, operating profit margin, and net profit margin between group and non-group firms for both years 1998 and 2002. Therefore, based on these two test periods, the business group firms' profitability and the non-business group firms' profitability are not significantly different.

As shown in Table 4, dividend payout ratio and dividend per share variables are not significantly different for the two groups for both the test periods. In contrast, EPS for the business group is higher than the EPS for the non-business group firms for Year 2002 only. In other words, over these two test years, group firms have not spread their ownership and thus have not issued significantly more shares. This appears to be the case since we did not find any significant difference in the net profit margin (a proxy for the numerator of EPS ratio) for the two groups in either of the two test years.

Table 4 reports key ratio that specifically address research questions 2 and form the primary focus of our study. This ratio is ROA (an accounting-based performance measure) averaged for years 1998 and 2002 and reported for both the business group sample and non-business group samples. As shown in Table 4, for the year 2002, the mean rank ROA value of the business group firms is higher than the mean rank ROA value of the non-business group firms but this difference is not significant. On the other hand, the mean rank value of year 1998 ROA of the business group firms (155.71) is higher than the mean rank ROA value of the non-business group firms (133.77) and this difference is statistically significant at the .05 level with a Z-value of 2.141. This difference in ROA clearly shows that the business group firms have superior financial performance than the non-business group firms. In other words, business group firms utilize their asset more effectively than the non-business group firms do. This suggests that business group as an organizational form carries in itself the opportunity for affiliated firms to maximize returns on their committed assets.

Table 4 also reports the mean rank value of Tobin's q of the business group firms (211.02) for year 1998 which is much lower than the mean rank value of Tobin's q of the non-business group firms (235.96) and this difference is significant at the .05 level with a Z-value of 2.036. Similar results are observed when we compare the two mean rank values of Tobin's q for the Year 2002 for the two samples. These findings suggest that though business group firms demonstrate superior financial performance (an interplay of effectiveness and efficiency) than non-business group firms, equity markets likely discount the value of these firms because market participants perceives these firms to have lower transparency than non-business group firms (see more on this in Khanna and Palepu, 2000 and in Claessens et al., 2000). More notably, a significantly higher ROA shows that business groups in Pakistan are efficient economic arrangements that substitute for missing or inefficient outside institutions and markets, in turn, supporting the market failure/institutional void argument.

Sector Classification & Analysis

The purpose of industry analysis is to determine if financial differences between the two samples found at the outset can be attributed to sector/industry effects. Toward that end, we examined three major sectors: Textiles, Consumer Goods, and Industrials. Our results were roughly similar (though not that strong) to the ones we observed for the full sample. In the interest of space we decided not to report these results but these findings can be made available by the authors upon request.

SUMMARY AND CONCLUSIONS

This study examines key financial differences between the business group and non-business group firms in Pakistan. Our main argument of this paper is that business groups are efficient institutional arrangements that successfully substitute failed markets and dysfunctional institution that dominate emerging economies. Towards that end, we raise two broad research questions. First, what are the key characteristics of business group firms that are different from non-business group firms? Second, are firms affiliated with business groups more profitable than unaffiliated firms? Specifically, we use the accounting-based performance measure, Return on Assets (ROA), to address the second question.

We address these two research questions using samples of group firms and non-group firms listed on the Karachi Stock Exchange (KSE) of Pakistan during 1998 through 2002 period (the test period) and whose data were available on VISTA. Next, we classify both samples to various industries using KSE industrial classification codes. In order to overcome small sample problem, we collapse related industries in to Textile, Consumer Goods, and Industrial sectors. We, then perform financial analysis based on these three sectors. The industry results are roughly similar to the ones for the full sample, and they do not change the conclusions of our study reached earlier for the full sample.

The Research Question 1 descriptive results show that group firms are larger in size than non-group firms both based on total assets and total sales. Our statistical analysis shows that group firms have higher liquidity and short-term debt paying ability, and marginally lower financial leverage (risk) than the non-group firms.

Our 1998 test-year results, based on ROA (an accounting-based measure - a test of research question 2), show that group firms are more profitable than non-group firms. In other word, business group firms utilize their assets more effectively than non-business group firms. This suggests that business group, as an organizational arrangement, creates opportunities for affiliated firms to extract higher returns from their committed assets. We also find business-groups' Tobin q (a market-based measure) to be lower than the Tobin's q of non-business group firms. These results suggest that external shareholders perceived firms affiliated with business groups to have lower transparency than firms unaffiliated with business groups. Consequently, the market participants discount the value of group firms even though they are more profitable than non-group firms.

It is important to note that the results of our comparative financial performance (ROA) suggests that, like in most other emerging economies, the business groups in Pakistan substitute for missing or deficient outside markets (such as capital, product, and labor) and institutions (such as legal, monitoring and enforcement) and appear to play a prominent role in the economic growth of the country. We feel that our exploratory work substantially contributes to our understanding of comparative financial performance of business groups and shed an indirect light on the relationship between the existence, relevance, and role of business groups and the economic development in the emerging economy of Pakistan.

The results of our work should be interpreted in the light of some key limitations. This study is primarily exploratory in nature. We use data for only two years and further research is warranted for more fruitful analysis of how business groups in Pakistan have evolved over time and what are the antecedents of capital market perceptions of firms belonging to such groups. We also need to undertake a much deeper analysis of the institutional environment which promotes businesses of such form and possibly inhibits capital formation by individual entrepreneurs.

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CHANGES IN EQUITY COMPENSATION PLANS: EVIDENCE FROM THE U.S. CAPITAL MARKETS

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ABSTRACT

The Financial Accounting Standards Board and the United States Congress enacted new legislation and regulations in 2002 requiring corporations to recognize stock option grants as an expense (voluntarily) on their financial statements. In 2004 option, expensing became mandatory. This paper describes the different changes made by a sample of U.S. public corporations to their Equity compensation plans after the mandatory expensing of stock options went into effect. The results suggest that firms seem to have reacted to the required option expensing by accelerating the vesting of their outstanding options with a contemporaneous reduction in the use of stock options as a compensation incentive. Executive (employee) compensation practices seem to have shifted from stock option grants to performance and restricted stock awards. An unexpected finding of this investigation was observing that besides employees and Board directors, non-IT firms are also granting equity compensation to non-employees such as vendors and consultants.

JEL: G38; J33; M41; M44

KEYWORDS: Equity compensation plans, stock options, performance stock, restricted stock

INTRODUCTION

In 2002 Congress enacted legislation ("the Sarbanes-Oxley Act of 2002") and the Financial Accounting Standards Board (FASB) issued accounting standards that require Corporations, among other matters, to disclose more information on their financial statements related to executive compensation and to recognize stock option grants as an expense on their financial statements. Prior to 2002 firms did not have to recognize stock options as an expense. In December 2002 the FASB issued a new accounting standard (SFAS No. 148) explaining how firms should *voluntarily* record stock options as compensation expense. According to Reilly (2004), the underlying motivation behind the new standard was to achieve international convergence with International Accounting Standards Board (IASB) accounting standards.

Seethamraju and Zach (2004) observed that when the first group of firms started to announce (in 2002) their decision to voluntarily expense their stock options, they either reduced or eliminated the use of stock options, introduced new equity compensation plans or made specific changes to their stock option plans. Semerdzhian (2004) found that certain firms such as Dell, Yahoo and Citigroup, among others, started to limit the number of employees who can receive stock options. Carter, Lynch and Tuna (2007) observed an increase in the use of restricted stock and/or performance stock awards.

In March 2004, the FASB issued a draft of a new standard requiring the *mandatory* recognition of stock options as a compensation expense. The new standard (SFAS No. 123-R) was issued in final form in December 2004, but the Securities and Exchange Commission (SEC) postponed its implementation until the first quarter of 2006.

This investigation contributes to the literature by documenting the changes (i.e. shift) in the equity compensation plans of public corporations from stock options to other types of stock-based awards after the mandatory expensing of stock options went into effect. We perform a descriptive analysis of the changes made by a sample of U.S. public corporations to their equity compensation plans after they started to comply with the mandatory expensing of stock options. To measure the type of changes made by the sampled firms in their equity compensation plans required manually collecting the information from the footnotes section of the firms' December 31, 2006 financial statements for calendar-year reporting firms or from the firms' 2007 fiscal year financial statements, e.g. 9-30-07.

The remainder of the paper is organized as follows. The next section describes the background literature related to the use of stock options as a compensation component and the controversy over the accounting standards for stock options. The following section presents the research questions related to the changes in equity compensations plans accompanied by the methodology used and the sample for the study. The next section presents the results obtained followed by our conclusions.

LITERATURE REVIEW

Managers were once paid with salaries and bonuses only. However, as the business world grew more complex and companies became more sophisticated, stock option grants were added as an additional incentive to the compensation package received by managers. As noted by Chidambaran and Prabhala (2003), stock options have become an integral part of executive compensation since the beginning of the 1980's. In fact, in early 2000, unexercised stock options of U.S. executives were deemed to be worth tens of billions of dollars.

Core and Guay (2001) found that besides top managers, other employees that are not managers ("non-executive employees") are also receiving stock options. Yermack (2004) found that even outside Board directors at Fortune 500 firms receive options as part of their incentive compensation.

Stock option plans provide the participants the right to buy a specific number of the firm's shares at a predetermined price (exercise price) over a *vesting period*. The typical scenario is that over a three to five year period, the employees gradually acquire the right to exercise a pro-rata amount of the total option award.

Restricted stock grants provide managers with a specific number of shares with the limitation or restriction that they cannot sell them during a particular blackout period. Long-term performance plans award the recipient cash, equity, or a combination thereof, if certain predetermined performance measures, e.g. sales, ROI or EPS growth, are met on an annual basis. A problem (known as an "agency problem") arises when the Board or its Compensation Committee enter into what the author calls "sub optimal" compensation contracts. An example of the latter would be setting low performance targets that are easy to attain. Kole (1997) found that the decision to grant equity as part of a manager's compensation could be predicted by certain financial characteristics of the firm such as a company's tangible assets and intangible assets, and to a lesser extent by the size of the firm or by the presence of the founding family on the firm's Board. However, the Board's judgment plays a very significant role in granting incentives. This discretion or "flexibility" could result in an "expropriation of shareholder wealth". The author found that this type of Board flexibility would be more likely to be observed in large size firms, in firms that have larger differences among the different segments of the business, i.e., increased firm diversification, and firms that were more research-oriented.

On the other hand, Barron and Waddell (2003) found that as executives move up the corporate ladder, i.e. promoted, within the same firm, compensation becomes more incentive based, and incentive pay becomes more equity based. Another possibility is that executive incentive pay might reflect differences in abilities or degrees of risk aversion, i.e. senior executives have more abilities and are less risk averse. The authors also found a tradeoff between various types of equity-based compensation, in particular restricted stock grants versus stock options. Stock options encouraged increased effort at the expense of introducing a bias in the project acceptance decision. At higher levels of management, there is relatively less equity compensation in the form of stock options, compared to lower ranking managers. The authors interpreted this finding as meaning that the negative, i.e. adverse, effect of stock options on project selection criteria is more important at higher executive ranks.

Core and Larcker (2002) found an improvement in operating performance at firms that require their top managers ("executive officers") to increase (to a predetermined minimum level) their ownership of company stock, either with restricted stock, or through stock options. The authors measured performance by excess accounting returns and excess stock price returns. After the firms adopted a "target ownership plan", managers increased their stock ownership levels. The authors' interpretation of their findings was that prior to the adoption of the target ownership plan, the firm had agency problems. To improve incentives and governance measures, the Board "forced" the adoption of a stock ownership plan for its top executives. After the adoption of this stock ownership plan, there was an improvement in the firms' performance.

CONGRESS AND THE FASB REACT TO THE STOCK OPTIONS CONTROVERSY

The well-publicized cases of corporate greed and malfeasance (*Enron*, W*orldCom*, among others) prompted the US Congress to act swiftly by enacting the Sarbanes-Oxley Act of 2002 (formally known as the "Public Company Accounting Reform and Investor Protection Act of 2002", but hereafter referred to as "SOX"), to scrutinize what a public corporation and their independent auditors can and cannot do. Although the aforementioned corporate failures were caused by different reasons, Sundaram and Inkpen (2004) state that the widespread use of stock options to compensate corporate managers helped fuel the different corporate failures observed during 2001 and 2002. The reason for this widespread belief is attributed to the "unrestrained granting of stock options" to compensate corporate managers during the Internet bubble frenzy of the 1990's.

According to Gordon (2003), the problems at Enron were exacerbated by its "high-powered stock-based compensation structure". A report prepared in February 2003 by Towers Perrin, a human resources consulting firm hired by a Congressional Committee to investigate Enron, found that the Company's stock compensation for its highest executives in 2000 represented 66% for Kenneth Lay and 75% for Jeffrey Skilling. Gordon (2003) also found that Enron's stock-based compensation arrangements for its managers included performance-based accelerated vesting. Since managers usually exercise options upon vesting, and with the potential to receive additional options based on performance, Enron managers had a "pathological" concern over the fluctuations in the Company's stock price. This environment increased the pressure on senior managers to "manipulate financial results" to obtain increased current earnings that would agree with the expectations held by the firm's institutional investors, thereby resulting in an increase in the Company's stock price.

After the United States Congress approved SOX, it also started to pressure the FASB to require the companies to expense its stock options. Several academic and business leaders (Merton Miller, Warren Buffet, and Alan Greenspan, among others) expressed their inconformity with not reflecting stock options as an expense on a firm's financial statements.

In December 2002 the FASB reacted to its critics by issuing a new accounting standard FASB Statement No. 148 ("Accounting for Stock-Based Compensation-Transition and Disclosure"). This new standard amended SFAS No. 123, and provided firms with alternative methods for a *voluntary* change to the "fair value" method of accounting for stock options. According to the FASB, this was the *preferable* method of accounting for stock-based compensation. SFAS No. 148 also required disclosures in both the annual and interim financial statements of the effect of the stock options on the financial statements, and even required a specific way as to how to present the information to be disclosed on the financial statements.

The effective date for SFAS No. 148 was for fiscal years ending after December 15, 2002, i.e. for companies with a December 31 year-end, the Standard would apply starting January 1, 2003.

The FASB asserted that the underlying motivation behind SFAS No. 148 was to achieve international convergence with the global capital markets. International publicly traded companies that do not present their financial statements in accordance with US GAAP must adhere to the GAAP established by its counterpart, the IASB, and in November 2002, the IASB issued an exposure draft for public comment, wherein they required that companies recognize stock options as an expense.

On October 29, 2003, the FASB announced that by 2005 they would start requiring all firms to expense their stock options. On February 19, 2004, the IASB issued its International Financial Reporting Standard No. 2 ("Share-based Payment) requiring all international companies to expense their stock options beginning on or after January 1, 2005.

On March 31, 2004, the FASB announced the release of an exposure draft of its proposed new standard, but on October 13, 2004, it delayed the effective date of its proposed new standard. On December 16, 2004, the FASB announced it had issued its final statement as SFAS No. 123-R ("Share-Based Payment"), where the R stands for "Revised". This new Statement replaced SFAS No. 123 and superseded APB Opinion 25. The FASB decided that the effective date for the new Standard would apply to interim or annual periods beginning after June 15, 2005, instead of the original effective date of January 1, 2005.

However, the SEC received feedback from public companies, industry groups and CPA firms that suggested that the adoption of the new Standard in mid-year, in particular for calendar year-end entities, would generate additional implementation costs and comparability problems for analysts and investors. As a result, on March 29, 2005, the SEC issued Staff Accounting Bulletin No. 107, hereafter SAB 107 and on April 15, 2005, it issued a ruling described as "Amendment to Rule 4-01 (a) of Regulation S-X Regarding The Compliance Date For Statement Of Financial Accounting Standards No. 123 (Revised 2004), *Share-Based Payment.*" SAB 107 consists of various clarifications in the form of questions and answers related to the implementation of SFAS 123-R. The amendment to Regulation S-X delayed the implementation date of SFAS 123-R for public companies until their next fiscal year that begins after June 15, 2005. The effect of this change for calendar year-end companies was that they would not be required to implement this new standard until the first quarter of 2006. However, companies were allowed to adopt the Standard earlier if possible.

RESEARCH QUESTIONS, DESIGN, AND METHODOLOGY

The purpose of this paper is to describe the nature of the changes made to Equity compensation plans by a sample of firms after adopting SFAS 123-R [currently known as FASB ASC Topic 718 - Stock Compensation] that requires the expensing of stock options. Seethamraju and Zach (2004), hereafter referred to as S-Z, observed that in 2002 when the first group of firms started to announce their decision to voluntarily expense their stock options ("the Announcing firms"), they either reduced or eliminated the use of stock options, or they changed their compensation plans. S-Z described the changes made to compensation plans as the "introduction of new plans or specific changes to options compensation." Semerdzhian (2004) found that certain firms such as Dell, Yahoo and Citigroup, among others, started to limit the number of employees who can receive options. Carter, Lynch and Tuna (2007) observed an increase in the use of restricted stock and/or performance stock awards.

Weisbenner (2001, 2004) and Carter, Lynch and Tuna (2007) have predicted that mandatory option expensing will cause firms to stop awarding new option grants and replace (options) with shares of restricted stock that vest over time. This leads to the following research questions.

RQ1: How many of the Announcing firms will report significant changes in their Equity compensation plans after the implementation of the new accounting standard (SFAS No. 123-R) requiring the expensing of stock options?

RQ2: What type of significant changes will be made by the Announcing firms to their Equity compensation plans?

RQ3: How many of the Matching firms will report significant changes in their Equity compensation plans after the implementation of the new accounting standard (SFAS No. 123-R) requiring the expensing of stock options?

RQ4: What type of significant changes will be made by the Matching firms to their Equity compensation plans?

This investigation considers that significant changes in a firm's Equity compensation plan include, but are not necessarily limited to: a change in the type of employees eligible to receive stock option grants, changing the criteria to become eligible to receive stock options, e.g. performance-based, replacing stock options for some other type of stock award, changing the option valuation model, reducing the number of options granted each year, changing the type of shares received (restricted or unrestricted) pursuant to each firm's equity compensation plan, among others.

RESEARCH DATA AND METHODOLOGY

The equity compensation data for the Announcing firms was manually obtained from their annual (10-K) reports and/or their proxy statements, if available. The expected type of changes to a firm's Equity compensation plan include a change in the type of employees eligible to receive stock option grants, changing the criteria to become eligible to receive stock options, e.g. performance-based, replacing stock options for some other type of stock award, changing the option valuation model, and acceleration of vesting, among others. After reading the Stock option plans footnote on the financial statements of the Announcing and the Matching firms, the firms that reported changes were then subdivided depending on the type of change reported to ascertain the nature and frequency of such changes.

To measure whether the Announcing or the Non-Announcing (Matching) firms made any changes to their stock option plans required manually collecting the data from the 2006 Annual Proxy statements (SEC Schedule 14A) and the footnotes section of their annual audited financial statements (SEC 10-K Report). The year 2006 is used for calendar year-reporting firms because the SEC established that the first quarter of 2006 (March 31) would be the first required reporting period to present the expensing of its stock options. For companies whose fiscal year-end is not a calendar year, the investigation uses the firm's 2007 fiscal year (10-K) report, e.g. 9-30-07. In addition, on July 26, 2006, the SEC also established additional required disclosure requirements related to executive compensation. The additional disclosures will help explain to the users of financial statements the changes made by firms to their stock option plans and possibly suggest reasons for the shift in their approach to employee (executive) compensation.

SAMPLE SELECTION

The firms included in this investigation were selected from a list originally compiled by Bear Stearns as of February 12, 2004 and provided by Mr. Brett J. Harsen of Mellon Human Resources and Investor Solutions (Available upon request). Said list identified the 483 firms (with their related Ticker symbols) that were expensing their stock options or had announced that they would expense their stock options as of that date. The firms that were expensing or had announced they were going to expense options as of February 12, 2004, are the "Announcing firms". The firms that were not expensing or had not announced they were going to expense options as of February 12, 2004, are known as the "Non-Announcing" or Matching firms and are included in another sample (the "Control" group).

Using the same approach adopted by Elayan, Pukthuanthong and Roll (2004), hereafter referred to as E-P-R, each Announcing firm is matched with a "Control" group firm that had employee stock option plans, is in the same industry (two-digit SIC codes), shares the same fiscal year-end, have similar size (comparable Sales) and profitability levels. The latter variable is measured with the same approach used by E-P-R (2004), i.e. with the ratio of EBITDA to Sales (hereafter, the "ES ratio").

The Announcing firms were initially subdivided and grouped based on their announcement dates and the year of adoption of the fair value (expensing) method of accounting for options using December 15, 2002, the effective date for SFAS No. 148 (*Voluntary* recognition of stock option expensing) as the cutoff date. The 11 firms that were expensing options prior to January 1, 2002 were excluded from the study because the exact announcement date was available for only one of those firms. Firms that had subsequently merged with or were acquired by another firm, or were non-US companies were also excluded. Other firms were also excluded due to their privatization (stockholder buyout), and one firm (SonomaWest Holdings, Inc-SWHI) was excluded because its common stock was delisted from the NASDAQ Small Cap Market on August 10, 2005. When the remaining 303 firms were located in the CRSP data files by their ticker symbols, from January 1, 2001 to June 30, 2005, a file with 253 firms was obtained. The 50 missing firms were due to firms that ceased to exist during the 2001-2005 period because of mergers or privatization, among other reasons.

Another file was created for the remaining 253 firms based on a subsequent inquiry in the CRSP files with the following daily information: Company's Permanent Name (PERMNO), Date of calculation of stock return (DATE), Company's Ticker Symbol (TICKER), Stock return with Dividends (RET), Value-weighted return with Dividends (VWRET), and Equal-weighted return with Dividends (EWRET). This search produced 225 firms, which implies that there were 28 firms with missing data in CRSP.

The next step was to obtain the group of Matching "eligible" firms from the Compustat files by selecting all firms for the period January 1, 2001 through June 30, 2005 with the Company's Permanent Name (PERMNO). The criteria for selecting a similar matched firm was based on the following attributes: firms that have employee stock options plans, are in the same industry (Two digit SIC code), have the same fiscal year-end, and share similar Sales levels and Profitability levels, the latter defined similar to E-P-R (2004) as the EBITDA/Sales ratio. Compustat Data Item 398 (Implied Option Expense) and Data Item 399 (Stock Compensation Expense) were used as the variables that identified whether a Matching firm had an outstanding stock option plan. Any firm that did not have a reported value for any of these two variables was discarded for matching purposes.

The merged file of firms was divided in deciles (groups of ten) based on sales to identify the possible firms that could be matched with each Announcing firm in the sample. The file was divided again in those groups based on the ES ratio resulting in 148 perfectly matched firms. The iterative process was repeated, first by changing the selection method to with replacement, then dividing the remaining firms in three groups with the complete Index, and then repeating the selection process removing the month of the firms' fiscal year-end from the Index. To reduce the number of Announcing firms without a similar Matching firm, the selection criteria was liberalized to allow a Matching firm to be associated with more than one Announcing firm, and then paired considering the proximity of their sales levels and their ES ratio (EBITDA to Sales). At the completion of these iterations eight Announcing firms for which no Matching firm were found were discarded from the investigation. The basic sample for the Study consisted of 183 Announcing firms (see Panel A of Table 1).

Table 1: Construction of the Sample for the Study

Panel A: Construction of the Initial (Basic) Sample of the Announcing Firms	
Initial sample of Announcing firms	303
Firms not found in CRSP	(50)
Firms not found in Compustat	(28)
Firms with missing values in Compustat	(34)
Announcing firms for which no Matching firm was found	(8)
Number of Announcing firms in the sample with a corresponding Matching firm	183

This panel shows the number of Announcing firms in the initial basic sample with a corresponding matching firm. The Announcing firms were obtained from a list prepared by Bear Stearns that identified the firms that were expensing or had announced they were going to expense voluntarily their stock options as of February 12, 2004.

Panel B: Adjusted Sample of the Announcing Firms	
Initial basic sample of Announcing firms with Matching firms (see Panel A)	183
Announcing firms that merged or were privatized	(17)
Adjusted sample of Announcing firms for analysis of changes in the firms' stock option plans	166

Panel B shows the Adjusted sample of Announcing firms in the study. The number of firms was reduced due to mergers or buyouts that occurred between 2004 (year of inclusion in the original sample-see Panel A) and 2006 (year of the evaluation of the changes in the firms' equity compensation plans).

Panel C: Adjusted Sample of the Matching Firms	
Initial basic sample of Matching firms with Announcing firms (see Panel A)	183
Firms that were matched with more than one Announcing firm	(33)
Firms that merged or were privatized	(4)
Adjusted sample of Matching firms for analysis of changes to Firms' stock option plans	146

Panel C shows the Adjusted sample of Matching firms in the study. The initial sample of Matching firms (see Panel A) was subsequently adjusted to prevent a Matching firm to be associated or paired with more than one Announcing firm, and for mergers or buyouts that occurred between 2004 (the year of inclusion in the original sample-see Panel A) and 2006 (year of the evaluation of the changes in the firms' equity compensation plans).

RESULTS

We manually collected the information for the changes made to the Announcing and Matching firms' Equity compensation plans after January 1, 2006 from the footnotes section of the annual financial statements of their 10-K Reports. The year 2006 is used for calendar year-reporting firms because the SEC established that the first quarter of 2006 (March 31) would be the first required reporting period to present the expensing of its stock options. For companies whose fiscal year-end is not a calendar year, the investigation uses the firm's 2007 fiscal year (10-K) report, e.g. 9-30-07.

As noted on Table 2, 28 of the 166 Announcing firms (17%) have only one Equity Compensation plans, whereas 83% (138) of the Announcing firms have more than one Plan. The 146 Matching firms are segregated in three main groups, 22 firms (15%) have no Plan, 25 firms (17%) have only one Plan, and 99 firms (68%) have more than one Plan. The mean (median) number of Equity Compensation Plans for the Announcing firms is 2.83(2.00), and for the Matching firms is 2.66 (2.00), respectively.

Table 2: Number of Equity Compensation Plans in the Sampled Firms

	n	Firms with no Equity Plan	Firms with only one Equity Plan	Firms with More Than one Equity Plan	Number of Equity Compensation Plans per Firm	
					Mean	Median
Announcing	166	-	28	138	2.83	2.00
Matching	146	22	25	99	2.66	2.00

n = Number of Firms This table shows the number of Equity Compensation Plans in the sampled Announcing and Matching firms. The column identified as "n" shows the number of Announcing and Matching firms included in the sample study. The second column shows the number of firms with no Equity Compensation plan. The third column shows the number of firms with only one Equity Compensation plan. The fourth column shows the number of firms with more than one Equity Compensation plan. The last column shows the mean and median number of Equity Compensation plans per type of firm.

Table 3 presents the number of observed changes in the Equity Compensation Plans for both groups of firms. There were 69 Announcing firms (42%) that did not make any change and 97 firms (58%) that made one or more changes. Four firms that made four different changes to their compensation plans. The Matching firms behaved similarly, where 79 firms (54%) made no change to their compensation plans and 67 firms (46%) made one or more changes. Two Matching firms that made four different changes to their compensation plans. The mean (median) number of changes in Equity Compensation Plans for the Announcing firms is 1.024 (1.000), and for the Matching firms is 0.781 (0.00), respectively.

Table 3: Descriptive Statistics for the Observed Changes in the Equity Compensation Plans of the Sampled Firms

	N	Firms with No Changes	Firms with One or More Changes	Maximum Number of Changes in One Firm	Number of Changes in Equity Compensation Plans Per Firm	
					Mean	Median
Announcing	166	69	97	4 (4 firms)	1.024	1.000
Matching	146	79	67	4 (2 firms)	0.781	0

n = Number of Firms *This table shows the number of changes observed in the Equity Compensation Plans of the sampled Announcing and Matching firms. The column identified as "n" shows the number of Announcing and Matching firms included in the sample study. The second column shows the number of firms with no changes in their Equity Compensation plan. The third column shows the number of firms with one or more changes in their Equity Compensation plans. The fourth column shows the maximum number of changes in each type of firm. The last column shows the mean and median number of changes in Equity Compensation plans per type of firm.*

Table 4 presents the classification of the different changes made by the 166 Announcing firms to their Equity Compensation plans. Fifteen firms changed their option valuation model, 15 firms accelerated the vesting of their options (perhaps to avoid having to expense said options), 52 firms replaced their options for some other type of stock awards, and there were 56 firms with changes classified as "Other changes".

As previously noted on Table 3, 58% of the Announcing firms (97) made more than one change in their Equity Compensation plans. As a result, the total changes reflected on Table 4 add up to more than 100%. The "Other changes" category include changes in the exercise price, change in the way volatility of the firm's stock option was measured, change in the term of the option, and the decision to not grant options for one or two years, among others. An unexpected finding in this study was that several of the non-IT Announcing firms awarded equity compensation grants to non-employees (consultants and vendors).

Table 5 presents the changes observed in the 146 Matching firms (and the explanation for why the number of firms is different from the Announcing firms). Sixty-seven matching firms (46%) made more than one change in their Equity Compensation plans (See Table 3). The observed changes in the Equity Compensation Plans were as follows: 10 firms changed their option valuation model, 12 firms accelerated the vesting of their options, 19 firms replaced their options for some other type of stock awards, and there were 46 firms with changes classified as "Other changes". Because some of the Matching firms had more than one change, the total changes also add up to more than 100%. Some of the changes classified as "Other" include changes in the exercise price, change in the way the volatility of the firm's stock option was measured, change in the term of the option, and the decision to not grant options for one or two years, among others.

Table 4: Changes Observed in the Equity Compensation Plans of the Announcing Firms after January 1, 2006

Analysis of changes made by the Announcing firms:	
Changes in their option valuation model	15
Changes in their Vesting requirements	1
Accelerated the vesting of options	15
Increased option grants to Directors and Employees	5
Decreased option grants awarded to Directors and Employees	3
Replaced stock options with other stock awards	52
Other changes	56
Total changes (**)	147

*This table presents the different changes observed in the Equity Compensation plans of the Announcing firms. Since the SEC postponed the implementation of mandatory option expensing until the first quarter of 2006, the information for the observed changes was obtained from the footnotes section of the 2006 audited financial statements for calendar-year reporting firms or the fiscal 2007audited financial statements for fiscal-year firms.** Total changes add up to more than the original adjusted sample size of the Announcing firms because some firms made more than one change to their stock option plans.*

Table 5: Changes observed in the Equity Compensation Plans of the Matching firms after January 1, 2006

Initial adjusted sample of Matching firms	146
Matching firms with no change to their option plans	(79)
Matching firms with changes to their option plans	67
Analysis of changes made by the Matching firms:	
Changes in their option valuation model	10
Changes in their Vesting requirements	4
Accelerated the vesting of options	12
Increased grants of options to Directors and Employees	1
Decreased grants of options to Directors and Employees	1
Replaced stock options with other stock awards	19
Other changes	46
Total changes (**)	93

*This table presents the different changes observed in the Equity Compensation plans of the Matching firms. Since the SEC postponed the implementation of mandatory option expensing until the first quarter of 2006, the information for the observed changes was obtained from the footnotes section of the 2006 audited financial statements for calendar-year reporting firms or the fiscal 2007audited financial statements for fiscal-year firms.** Total changes add up to more than the original adjusted sample size of the Matching firms because some firms made more than one change to their stock option plans.*

The changes observed in the Matching firms' stock option plans are similar in nature to the changes observed for the Announcing firms, with the only significant difference being the number of firms in each group. In terms of the prior expectations for this area of the investigation, the results obtained provided the answers to the research questions inquiring the nature of the significant changes made by the Announcing and Matching firms to their equity compensation plans. The Matching firms also mimicked the Announcing firms by awarding stock options to employees, Board directors and to non-employees (Vendors and Consultants) in non-IT firms.

The changes made by both groups of sampled firms to their Equity compensation plans seem to suggest that the firms are attempting to mitigate the possible adverse impact arising from the required expensing of their stock options and initiate a gradual change in their compensation practices to de-emphasize options in lieu of restricted shares and/or performance shares.

CONCLUSION, LIMITATIONS AND POSSIBILITIES FOR FUTURE RESEARCH

The objective of this investigation is to describe the different changes made in the Equity compensation plans in a sample of U.S. public corporations after a new accounting standard requiring mandatory option expensing went into effect. The results obtained suggest that firms seem to have reacted to the required expensing with the acceleration of the vesting of its options and a contemporaneous reduced emphasis on stock options replaced by an increased emphasis on (restricted and performance) stock-based awards. An unexpected finding of this investigation was observing that besides employees and Board directors, non-IT firms are also granting equity compensation to other non-employees such as vendors and consultants. This investigation contributes to the existing literature by documenting the shift in firms' compensation practices from stock options to restricted and performance stock awards.

This investigation is characterized by several limitations that must be considered as part of the understanding and interpretation of its findings. The sampled firms examined were classified as either Announcing or Matching. The Announcing firms partially reflect self-selection bias because they decided to expense stock options, when other firms had not done likewise. The subsequent procedure to select a similar "matched" firm also reflects a selection bias inasmuch as only firms with certain attributes such as being in the same industry, having the same fiscal year-end, and sharing similar sales and profitability (EBITDA/Sales ratio) levels, among others, were eligible Matching firms. Firms that did not have a reported value for the Compustat variables 398 and 399 (Implied Option Expense and Stock Compensation Expense, respectively) were eliminated for matching purposes.

The changes observed in the Equity compensation plans were obtained from the information disclosed on the firm's financial statements, which present the aggregated information for all employees, Managers and Board Directors. The Standard & Poor's ExecuComp database was unavailable for this investigation, which would have provided additional compensation information for a firm's top five executive officers. An examination of the changes made in the Equity compensation plans of a group of firms would have been more complete if the total compensation information for the aforementioned senior managers had been included.

Executive (employee) compensation continues to attract research interest because of its dynamic nature. As markets change and firms react to these changes, executive (employee) compensation practices seem to have changed from the "usual" (cash and stock options) to the more elaborate ("restricted" stock and/or "performance" stock). The increased emphasis on tying compensation to performance is now more important than ever due to the awareness among shareholders of the importance of good corporate governance. This presents an opportunity for future investigation in the areas of Corporate Governance and Equity Compensation practices where executive pay packages seem to have promoted risky behavior among its senior management.

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CREATING VALUE THROUGH CORPORATE DEBT CONTRACTS RESTRUCTURING

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ABSTRACT

The purpose of this article is to analyze the possibility of financial restructuring, featuring changes to the structure of the debt contracts. The firms being restructured are unprofitable or overleveraged. The theoretical findings are compared with restructuring possibilities applicable in Czech Republic. The analysis concentrates especially on the legal environment of the country, possibility to provide debt restructuring under the court supervision. The paper includes statistics on application of the new Insolvency Act. No. 182/2006 Coll., valid from January 2008. The paper empirically analyzes companies which were subject to the Insolvency Act. and in case of their reorganization determines how much the value of the company was increased.

JEL: G34.

KEYWORDS: financial restructuring, debts, company's value.

INTRODUCTION

Restructuring is a process for the purpose of increasing company value. The company usually implements restructuring steps when financial or operational problems have occurred, resulting in poor profitability or even financial distress. Kocenda and Lizal (2003) define three reasons for company failures. The first, based on a neoclassic approach, indicates failure is the result of improper and ineffective capital allocation. Bankruptcy is the proper restructuring tool in this case. The second reason for a company's failure is a short term problem with its cash position. This might result in bankruptcy, although it might not be the best restructuring tool in this case. The third reason for failure is bad management. A change in management is understood to be a better restructuring tool than bankruptcy in this case.

With respect to characteristics of a company's problems, different approaches to restructuring should be applied. In general it is understood that either operating or financial restructuring can be provided. Operational restructuring concentrates on fixing the operating process of the company; this action is provided with the purpose of increasing its operating cash flow. The aim of financial restructuring is to improve the financial position of the company, thus optimizing its capital structure. This action should either improve the cash flow of the company or decrease the cost of capital. Financial restructuring covers the restructuring of equity or debt contracts.

The concrete steps in a particular restructuring process are always influenced by the present financial, legal and social environment, but it is understood that the aim of all approaches is to increase the company's value. This article focuses on shareholder value. The purpose of this article is to analyze the financial restructuring possibilities of companies in financial distress as a result of their over-leverage, focusing on changing the structure of the company's debt contracts.

The remainder of the article is organized as follows: The topics of the first analysis include the reorganization possibilities based on theoretical findings from the literature, including analysis of their applicability in the Czech Republic. Next the analysis introduce the statistics of debtors' recovery. Recovery rates are compared for Czech Republic firms to Europe and US firms. The Insolvency Act No.

182/2006 Coll., which enables restructuring under court supervision has been on the books for more than two years, hence the study of its effectiveness is presented as well. Special attention is given to the description of successful restructuring provided under the new Insolvency Act. Comparison of value of the company before and after the restructuring is provided.

LITERATURE REVIEW

A comprehensive discussion of restructuring possibilities can be found in Gilson (2010). The author presents a number of restructuring case studies of companies operating in the US. The cases are divided into three modules: financially distressed firms that restructure their debt contracts, cases where equity contracts were restructured, firms that restructured their employee contracts to control labor costs. Information garnered from the first module is used in this article.

Gilson etc. (2000) compare the market value of firms that were reorganized in bankruptcy and their value based on management's published cash flow projections. The authors found that different methods of valuation can significantly influence the estimated value of a restructured company.

The range of financial instruments available in the capital market is a significant factor in restructuring possibilities. Specifically, the possibility to issue high yielding capital, which can be used to pay back mature debts, plays a significant role in this situation. This approach is usually done only in more developed capital markets. The interested reader is referred to Chemmanur and Fulghieri (1994). The topic of analysis and investment in distressed debt is broadly presented in Altman (2006). The possibility of issuing junk bonds as a form of high yielded capital is investigated e.g. in Gilson and Warner (1997).

Another favorite tool of equity or debt restructuring is emission of hybrid securities. Chemmanur et al. (2003), Carlin et al. (2006) and Jiranek, P. (2005) found that emission of those securities might decrease the cost of capital under given circumstances and thus increase the value of the company. The emission of hybrid securities might be useful tool of restructuring of financially distressed companies.

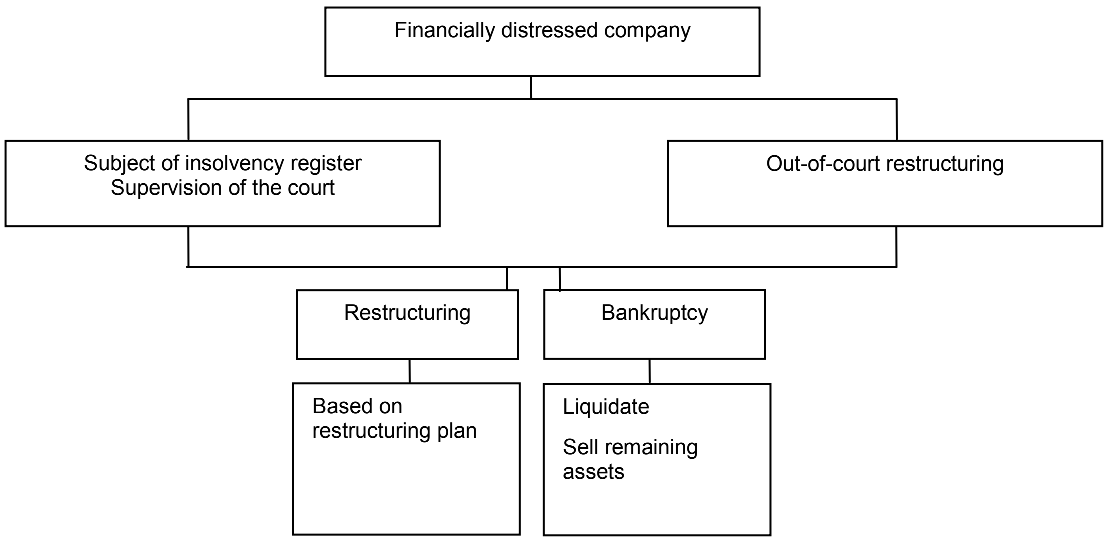
Restructuring of firms operating in Czech Republic has been the subject of a wide range of research studies. Particularly at the time of the Czechoslovak economy transformation from central planned to free market based economy (in 1990s). Extensive findings from research on this topic are stated at Kocenda and Lizal (2003) and Estrin et al. (2009). Restructuring became a popular subject for research again, after the new Act No. 182/2006 Coll. – Insolvency Act. - which enabled restructuring under court supervision, took effect. The topic was discussed in a number of on-line articles. Their findings are discussed in this paper (Creditreform.cz (2010ab) and Regiony24.cz (2010)).

RESTRUCTURING DEBT CONTRACTS

When a company becomes financially distressed and is unable to service creditor claims, it has several options for rectifying the situation (see Figure 1). Legal, accounting and tax issues must be considered. The existence of possible court protection against creditors plays an especially significant role if the financially distressed company is to be restructured without the protections afforded by bankruptcy.

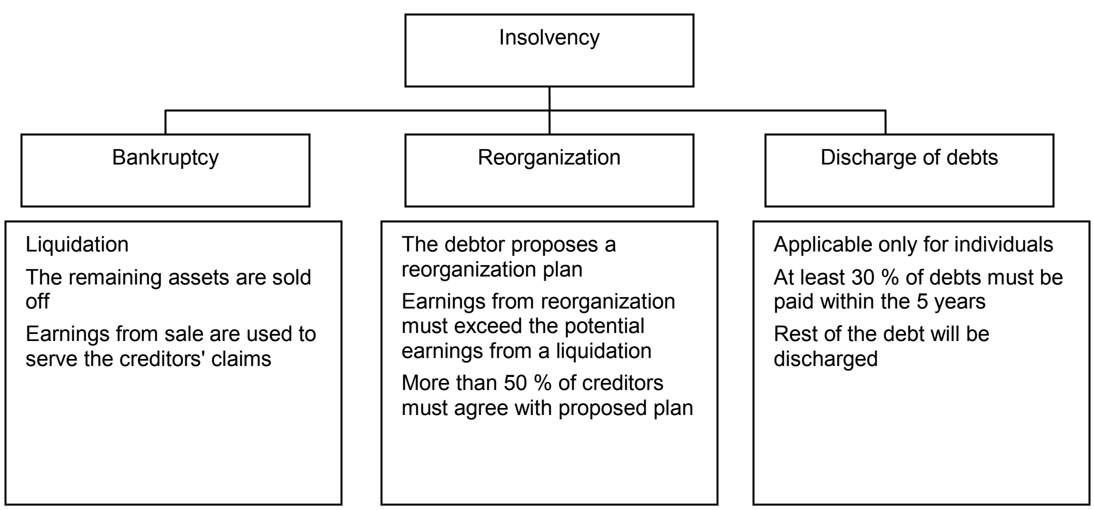
Economic and social development in the region of Central and Eastern Europe (CEE) has led to implementation of a law that enables a company to remedy its insolvency by means other than bankruptcy. The first legislative support for restructuring the company, to be provided in case of its insolvency, has been in place in the Czech Republic since January 1st, 2008. Act No. 182/2006 Coll. – the Insolvency Act – replaced the former Act No. 382/1991 Coll., which solved only bankruptcy cases. The new insolvency law can, in a way, be compared to Chapter 11 and Chapter 7 of the US Bankruptcy Code. The law defines what insolvency is, who registers the proposals to remedy the insolvency, and it offers possible insolvency solutions (see Figure 2). The act doesn't exactly define reorganization possibilities. Based on findings from the literature (e.g. Gilson (2010)) the financially distressed company has several options for restructuring its debt contracts, although each of them has its limitations (see Table 1).

Figure 1: Debt Contracts Restructuring



This figure shows that companies can either be restructured under the supervision of the court or outside the court. In the US, the restructuring of an insolvent company is the subject to Chapter 11 of US Bankruptcy Code, whereas a complete liquidation bankruptcy is accomplished using provisions of Chapter 7 (Gilson, 2010). In the Czech Republic, the restructuring and liquidation is the subject to Act No. 182/2006 Coll.

Figure 2: Insolvency Solution Possibilities



The figure displays the feasible solution of company's insolvency under the Czech Insolvency Act, No. 182/2006 Coll. Individuals as well as businesses are subject to the Insolvency Act. This article deals mainly with business entity cases. The restructuring is defined as reorganization and thus, this term is also used in the following text.

Table 1: Reorganization Possibilities and Their Application Limitations

Reorganization Possibility	Limitation
The basic solution of reorganization is to run the business under present conditions. The creditors would agree to a revised debt repayment calendar, while the part of the debts will be forgiven. In such a case, the law enables the company to take advantage of tax benefits resulting from reorganization. Forgiven debt is not subject to income tax on the debtor's side and the creditor is allowed to include this amount as a tax deduction. Moreover, no income will be the taxable to the debtor.	This solution would probably be acceptable only for the creditors with unsecured claims and only if the amount gained from the repayments would exceed the gains from the sale of the assets in the case of liquidation.
Another possibility of reorganization is to sell part of the company's assets or transfer the profitable activities and necessary assets to a new entity. The creditors might be offered ownership shares in the new entity or they might gain some financial means from the sale of shares to new investor(s).	This solution would be the most acceptable one for companies operating in the Czech Republic due to the fact that the biggest creditors are usually banks, whose claims are secured by part of the company's assets and thus the banks prefer to sell these assets.
Investor exchanges the debts for ownership shares in the debtor's business.	An investor will probably be willing to buy the shares of an insolvent company only if he is able to take advantage of possible synergy effects (e.g., when the investor is from the same or a similar industry segment)
Issue of high-yield debt securities (e.g., junk bonds).	This possibility is primarily applicable in countries with highly developed capital markets in which investors might be inclined to buy these securities (this type of investor is sometimes called a *financial vulture*). No evidence exists in the Czech Republic for a case in which reorganization of the company's debt has been accomplished by issue of new debt securities.

The entrepreneur environment in Czech Republic suffers from a lack of capital available for financially distressed firms. The possibility of reorganization under court supervision exists since January 2008 (Act No. 182/2006 Coll.). Those factors have significant influence on number and quality of debt contracts restructuring cases provided since country's transformation to free market based economy (1989).

DATA AND METHODOLOGY

At the present time, e-government in the Czech Republic is being provided in an extensive volume. Due to this, it is possible to gain considerable information (e.g., register of companies, including their financial statements, foundation deeds and articles of association, insolvency are registered including all related documents and court decisions, etc.) from e-government web portals (e.g. Justice.cz (2010)).

The analysis here focuses on effectiveness of the new Insolvency Act No. 182/2006 Coll., based on the comparison of frequency of enabled restructurings by court and frequency of restructurings provided in real. Data are taken from public sources Justice.cz(2010), Doingbusiness.org(2010) and Creditreform.cz(2010ab).

Studies available at Doingbusiness.org(2010) contain data from different countries. To make the data comparable, several assumptions were made - only limited liability companies are taken in account, they are 100% domestically owned, they have minimum of 201 employees and 50 suppliers and they were granted bank loans. The studies include statistics about the recovery rate (cents on the dollar recouped by creditors through the bankruptcy, insolvency or debt enforcement proceedings) across 183 economies. Rates for selected economies are used in this paper in order to compare the development of indicators in Czech Republic in the years 2006-2009 to other countries.

More data about the development of insolvency in the Czech Republic are available in studies at Creditreform.cz(2010a). The portal enables access to an on-line database of European and Czech business reports. Data used in the article - numbers of insolvency proposals and selected firms with the highest turnover, that were subject to insolvency proposals - were taken from free studies available at Creditreform.cz(2010b). The statistics are enlarged with information searched and gained from e-government web portal Justice.cz (2010).

Information about restructuring provided within the given case study is taken from the reorganization plan available at e-government web portal (e.g. Justice.cz (2010)). Also the estimated values of the company before and after reorganization are taken from the given reorganization plan. The values might be biased by the valuation method used (Gilson et. al, 2000).

RESULTS

One of the outcomes expected from the application of the new Act is to increase the ratio of insolvency claims that are paid back in the Czech Republic. The country's ranking has been poor when compared on an international scale as shown in Table 2.

Table 2: Average Percentage of Claims Paid Back in Case of Debtors' Insolvency (Recovery Rate)

	2006	2007	2008	2009
Great Britain	85.3	85.2	84.6	84.2
Denmark	67.2	70.5	87.0	86.3
Spain	77.8	77.6	76.9	73.2
USA	80.2	77.0	75.9	76.7
Portugal	74.7	75.0	74.0	69.4
Italy	63.3	39.7	61.8	56.6
Germany	52.7	52.9	53.1	52.2
France	47.6	48.0	47.4	44.7
Switzerland	46.9	47.1	47.1	46.8
Bulgaria	33.5	34.4	32.4	32.1
Slovakia	38.6	48.1	45.2	45.9
Hungary	35.7	39.7	38.4	38.4
Poland	26.5	27.9	27.8	29.8
Czech Republic	**17.8**	**18.5**	**21.3**	**20.9**

This table shows that economically more developed countries, where possibility exists of remedying the company's insolvency through reorganization and thus enabling its future existence, provide an environment that is more effective for satisfying the creditors' claims. The position of the Czech Republic is also poor among other countries in the CEE region. Even the possibility to provide reorganization with legislative support since January 2008 has not yet been reflected in improvement of recovery rate. The data are taken from Doingbusiness.org (2010)

Slight improvement of the value of index is recorded in 2006-2009, but a significant increase is necessary to improve the entrepreneur environment in Czech Republic. The results achieved so far from the new law are shown in Table 3 and Table 5.Although the Insolvency Act became effective more than two years ago, the number of reorganizations provided (total 28) is quite small (less than 0.2 % of insolvency proposals). The reasons why the results are so poor are summarized in Table 4. The limitations of financial reorganization presented in Table 1 affect solution possibilities in cases of big companies, that results in little or no reorganization activities among big companies (see Table 5).

So far the only relevant case of a company reorganization is the company Kordarna, a. s. (here a. s. means the joint stock company (Czech transl. *akciova spolecnost*)). The company is a producer of technical fabrics for the rubber industry. It is a member of the KORD group which operates within the CEE region. On May 14th, 2009, the company was found by a judge to be insolvent. After the proposal of a reorganization plan and the agreement of most creditors, the court enabled resolution of the company's insolvency by its reorganization. The principle of reorganization was based on founding a new Special Purpose Vehicle (SPV) - Kordarna Plus, a. s. to include the main assets and activities of the former company. The creditor claims would be paid from the sale of 100% of the shares of SPV and sale of the remaining assets which were not to be transferred to the new entity. No debts of the former Kordarna were transferred to new Kordarna Plus. The process is illustrated in Figure 3.

Table 3: Number of Insolvency Proposals in Years 2008-2009 and the First Quarter of 2010

	2008	2009	Q1 2010
# of insolvency proposals	5,354	9,492	33,339
# of enabled reorganizations	6	16	6

Less than 0.2 % of insolvency proposals are allowed by court decision to provide reorganization. Data come from Creditreform.cz (2010a).

Table 4: Reasons of Low Number of Enabled Reorganization According to Act No. 182/2006

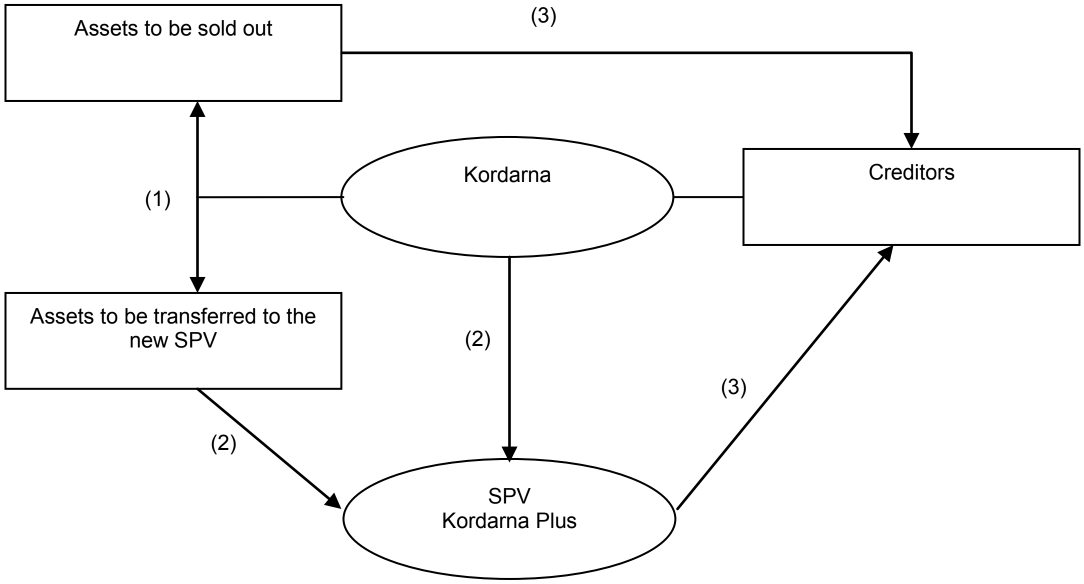
Reason	Explanation
Late registration in insolvency; hence restructuring is almost impossible to implement.	The companies avoid becoming the subject of an insolvency proposal because they would be found as insolvent by most of the creditors and banks would stop extending credit, which would make the company's operations impossible.
Reorganization is expensive and very difficult to implement; the conditions which need to be fulfilled are very difficult or impossible to meet.	The company (debtor) must propose a restructuring plan approved by more than 50% of the debtors, no later than within 15 days after the court renders a decision about its insolvency.
Reorganization is based on agreement between the debtor and the creditors and can be implemented only if more than 50% of the creditors agree with the suggested plan of reorganization.	This is difficult, especially in a time of financial crisis, when the creditors try to reduce their risk and prefer cash from the sold assets of the company rather than bearing the cost of company's reorganization. The most relevant creditors are usually banks, whose claims are secured by assets of the company, and it is very difficult to persuade the banks to concede to the agreement ("Standstill Agreement") about the reorganization of the company. Because they hold secured claims, banks prefer liquidation of the company.
Creditors are reluctant to agree with a proposed restructuring plan due to the lack of experience with company reorganizations in the Czech Republic.	The creditors are wary of the information gap which can arise between them and the company's activity during the reorganization. There are no or very few historical precedents of successful reorganizations, so investors do not understand what the company can provide.
The present definition of the Insolvency Act does not enable sufficient protection against the creditors during the reorganization process.	All the liabilities incurred during this time must be paid on time.
The lack of the capital instruments on the market, e.g., the issuance of high-yield (junk) bonds, is still implausible on the capital market of the Czech Republic.	If the company is in the insolvency register, the possibilities to gain new capital of a debt character and pay back the old debts, are closed.

Table 5: Insolvency Proposals in 2009, Firms with the Highest Turnover

Company	Last known Turnover (mil. CZK)	Turnover Year	Number of Employees	Subject of Activity	Month of the Court Decision	Insolvency Solution
Moravia energo	3,250	2007	25	Energetic	March	bankruptcy
Bohemia crystalex trading	3,000	2008	160	wholesale of glass and white pottery	March	bankruptcy
Kordarna	**2,745**	**2008**	**538**	**textile industry**	**August**	**reorganization**
PA export	2,711	2008	180	deliveries of investment complexes	September	bankruptcy
Karimpex	2,704	2007	60	wholesale of combustibles	August	bankruptcy
Olsanske papirny	1,571	2007	660	paper industry	February	bankruptcy
PK oil	1,500	2007	17	running fuelling stations	September	bankruptcy
Slezan Frydek Mistek	1,432	2007	1,869	textile industry	February	bankruptcy
GSMobile Group	1,427	2007	34	sale of mobile phones	March	bankruptcy

The table displays the company with the highest turnover, which were the subject to Act No. 182/2006 Coll. and their insolvency solution; based on Creditreform.cz (2010b) and Justice.cz (2010). The only one important case of reorganization proposed by the court decision in Czech Republic is the case of the Kordarna company

Figure 3: Reorganization of the Company Kordarna



(1) The assets of the company are divided into two parts - the first to be sold out and the second one to be transferred to the new SPV.
(2) The new SPV Kordarna Plus is founded. Main parts of activities and the assets of the former company are transferred to the new SPV.
(3) The claims of creditors are served from the earnings gained from the sale of 100 % of shares of SPV and the remaining assets.

Liquidation value of the company before the reorganization was estimated by expert opinion at 519 mil. CZK. Liquidation value of assets delegated to Kordarna Plus, a. s. was 484 mil. CZK. The value of the remaining assets to be sold out was 35 mil. CZK. Values are taken from Kordarna (2010). The average exchange rates in 2009 by the Czech National Bank: 1 USD = 19.057 CZK, 1 EUR = 26.445 CZK.

The value earned during the reorganization process, to be used for serving old debts, was estimated to exceed 820 mil. CZK, as stated in Regiony24.cz (2010). The amount gained from the sale of 100% of shares Kordarna Plus, a. s. was 795 mil. CZK. The higher percentage of repayment of creditors' claims in comparison with bankruptcy (see Table 6) was the condition under which creditors agreed with the reorganization plan.

Table 6: Comparison of Percentage of Repayments of Creditors' Claims - Bankruptcy Vs. Reorganization

	Bankruptcy	**Reorganization**
Group 1 - secured creditors	10.98-11 %	15.2 %
Group 2 - unsecured creditors	1.98-2 %	8.17 %
Group 3 - contingent claims	0 %	0 %
Group 4 - other claims	0 %	0 %

The table displays that the creditors are divided in the groups, what is also required by the Act No. 182/2006 Coll. Calculations are based on information from Kordarna (2010).

The total cost of reorganization was estimated to be 40 mil. CZK. The amount of wages paid to the insolvency administrator, that are the substantial part of total costs of reorganization, is the subject of Section 38 of Insolvency Acts No. 182/2006 and 313/2007 Coll.; Kordarna (2010), p. 22). It represents 5 % of the value earned from the reorganization process (compare to 15% average cost of reorganization in Czech Republic as stated in Doingbusiness.org (2010).

CONCLUDING COMMENTS

Financially distressed companies may restructure their debt contracts either with court supervision or independent of the court. The goal of this paper was to examine the restructuring possibilities of companies operating in Czech Republic. The study is built on publicly available data accessible from internet sources especially those provided by government (Justice.cz). Special attention is given to presentation usage statistics of the Insolvency Act No. 182/2006 Coll., which enables restructuring under court supervision and which is available for more than two years at the time of this writing.

The restructuring possibilities in Czech Republic are limited due to lack of capital available on the capital market especially for financially distressed companies. Debt is offered almost exclusively from banks, which are reluctant to face the risk of investing in companies that are restructuring. The possibility to restructure debt contracts under court supervision exist since January 2008 and so far less than 0.2% of insolvency proposals used the reorganization. From those only one company really followed the whole process of reorganization.

The case of the Kordarna company is a unique example (see Table 5) of a successful reorganization performed under the new Insolvency Act. It is the "pioneer" of insolvency solutions. This reorganization enabled the reorganized company to carry out the existing company activities. Most of the employment contracts were kept and the level of creditor's claims to be served was higher than it would have been in the case of bankruptcy. As a result of the reorganization, the value of the company was increased by more than 300 mil. CZK.

Limitations of the analysis include that it is based only on publicly available data, which might suffer from errors. The case study illustrates that reorganization resulted in increase of company value, but it is possible that estimated values might be biased because of the valuation methods used as stated in Gilson (2000).

Case studies of restructuring inquire about questions which have public policy implications, but can significantly influence the process of company restructuring. Should the managers, when making restructuring decisions, focus more on the increase of shareholders' or stakeholders' value? It is possible that implementation of the Insolvency Act, which guarantees the court's protection for the restructured company, creates a competitive disadvantage for companies with no insolvency problems. Another interesting question is if managers ethically responsible when restructuring the company? Moreover, research examining the extent to which the interest of the company's community be taken into account?

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THE EFFECTS OF TAIWAN DIRECT INVESTMENT IN CHINA ON TAIWAN

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ABSTRACT

Foreign direct investment (FDI) is an important area of research in Finance. Taiwan capital is flowing to China at an increasing rate. Taiwan direct investment in China has reached a sum of more than U.S. $200 billion. Taiwan now suffers a serious economic downturn and high unemployment, when Taiwanese firms close their factories at home and move them to China. In addition, the Taiwan government recently lifted all controls on capital flows and transfer of technology from Taiwan to China. This policy action has further worsened economic conditions in Taiwan. The concerns of Taiwan's business over dependence on China set in motion political events and the military threat of annexation by China. These events prompted this study. Using a survey approach, the study aims identify major effects of Taiwan direct investment in China on Taiwan's economy and methods for coping with the effects. The study also analyzes some related issues related to government policies and administrative efficiency. The model can serve as a reference source for policy makers to cope with the ill effects of FDI.

JEL: F21

KEYWORDS: Taiwan Direct Investment (TDI), Foreign Direct Investment (FDI), Economic Cooperation Framework Agreement (ECFA)

INTRODUCTION

The major culprit of the continual outflows of Taiwan Direct Investment (TDI) to China aggravates the severe conditions of unemployment in Taiwan. To ease the conditions of high unemployment requires understanding of some critical questions. What are the major problems of TDI to China? What are the cross-strait related government policies? Will President Ma Ying-jeou promote sinicization or protect Taiwan sovereignty? What are major strategies for reducing rising unemployment in Taiwan? These are empirical questions, which the present study intends to address and to reflect in a Venn model as shown in Figure 1.

The respondents show high expectations of the President Ma government to deal with the issue of high unemployment. Handling the high unemployment problem should be the priority of all tasks. The faster the government starts to work out the detailed economic plans for creating jobs, the less serious the recession or unemployment problem will be. The coping strategies the respondents suggest are valuable to policy makers. The model symbolizes President Ma's drive to achieve "Sinicization." Following the introduction, the paper reviews the relevant literature. It then discusses the methodology used in the paper. Specifically the paper uses a Venn Model. Discussing each of the four model components follows. The paper closes with conclusions and recommendations.

LITERATURE REVIEW

Over the past six decades, Taiwan has experienced economic growth (Wang, 1993; and World Bank Group, 1993). Taiwan has become a major leader in supplying the world with the information technology products (Wang, 2001). Taiwan controls more than 70 percent of the global market for computer hardware, semi-conductors, and other high-tech goods. More than 80% of manufacturing in Taiwan are in capital-intensive and high-tech industries (Ramaswami, 1968). Taiwanese firms are attracted by are larger market and cheaper labor available in China (Srinivasan, 1983). More than 50 percent of Taiwanese enterprises have moved to China (China Times, 2003). More than $200 billion of Taiwan capital has flowed to China. Responding to cheaper labor and other incentives, China bound TDI results in rising unemployment in Taiwan (Park, 2008). As TDI to China continues, unemployment in Taiwan continues to rise as well. As a result, workers took to the streets of Taiwan to protest rising unemployment rate (Associate Press, 2002).

In February 2010, an official survey was done on the satisfaction ratings of President Ma. The public support of his performance dropped below 40 percent. Only 36 percent of respondents supported him in diplomatic relations while 37 percent approved the way he handled the cross-strait ties between Taiwan and China (Staff Writer, 2010). The Global View Magazine conducted a poll on President Ma in January 2010. The poll showed that only 23.2 percent of the respondents were satisfied with his performance (GVSRC, 2010). Based on these findings, President Ma has a leadership crisis (Staff Writer, 2010).

Despite the differences between Taiwan and China, contact between the two countries has grown significantly over the past two decades. Taiwan has continued to relax controls on unofficial contacts with China. Cross-strait relations in culture appreciation and economic transactions have been on the rise. Since President Ma Ying-jiou came to power, he officially lifted all controls on TDI to China (CNA, 2009). He also lifted the ban on direct travel between the two sides of the Taiwan Strait. His eventual aim is to speed up his sinicizing drive through cross-strait policies. The President Ma administration plays the role of a locomotive that pulls Taiwan away from sovereignty. On October 19, 2008, the Democratic Progressive Party launched a huge demonstration to protest the "diplomatic truce" with China as a sign of losing Taiwan sovereignty to China. The demonstrators accused President Ma of sacrificing Taiwan's sovereignty under one China policy (Ko and Chang, 2008). President Ma is over friendly to and leans on China according to a CNN report in 2010.

Coping strategies for reducing rising unemployment is one of the four components of a Venn Model as shown in Figure 1. The nature and purpose of strategies that cope with a particular issue vary in industries or professions (Kolhammar, 2009). The coping strategies of the present study aim to reduce the unemployment rate that has stemmed from excessive exports of jobs and unending transfers of Taiwan capital to China. As in July 2009, 6.1 percent of the workforce or a sum of 633,000 were unemployed in Taiwan (BBC, 2009). Lu, Shiow-ven (2010), a legislator of Taiwan's ruling Party, claimed the true adjusted rate of unemployment was 11 percent or 1,310,000 unemployed in February. She also stated the adjusted rate of unemployment was two-times higher than the official rate.

Once Taiwan inks the Economic Cooperation Framework Agreement (ECFA) with China, there will be no tariffs between two countries. However, the enterprises that still operate in Taiwan will move their production to China to take advantage of its cheaper labor (Mayer, 1984). As a result, Taiwan capital will flow out to China at an increasing rate. Soon after signing an ECFA, the Taiwan firm exodus to China will leave an estimated 250,000 unemployed. Another result of signing an ECFA is workers in Taiwan will experience falling wages. On the other hand workers in China will enjoy rising wages according to the Factor-Price Equalization Theorem (Samuelson, 1949). The theorem postulates that when two trading countries actively interact with each other, the movement of factor prices of production between two countries will reach a condition of equalization (Cheng, 2009).

METHODOLOGY

The methodology of this survey is similar to that of earlier studies (Wang, 1995, 2001; and Wang and Rawls, 1975). Taiwan residents were surveyed including policy-makers, financial planners, professors, business entrepreneurs, heads of households, members of labor unions, and other residents. The names and mailing addresses of 1,094 subjects were obtained from four sources. One was a directory of government organizations and personnel published by the Government Printing Office in Taiwan. Two was a directory of professors in higher education compiled by the Ministry of Education, also in Taiwan. Three was a compilation of domestic and foreign firms in Taiwan published by the Direct Investment Evaluation Committee of the Ministry of Economic Affairs. Four was a directory of labor unions.

The instrument used in the study was a questionnaire. The questionnaire was to identify major problems brought about by excessive TDI to China. A second purpose was to analyze the nature of the cross-strait related government policies. Another purpose was to evaluate the governing behavior of President Ma toward "sinicization." The fourth purpose was to derive some strategies for reducing unemployment in Taiwan. The questionnaire was set up according to a 5-point Likert Scale ranging from "1" meaning "strongly agree" to "5" meaning "strongly disagree." The questionnaire also included an open-end question about each of the four areas or components as shown in a Venn Model of Figure 1.

The subjects in Taiwan received the questionnaire and a cover letter. Enclosed with the cover letter and questionnaire was a business reply mail envelope. The researcher asked the surveyed subjects to return the questionnaires within two months.

Thirty five questionnaires bounced back to the sender due to changes of subjects' mailing addresses. Of the remaining 1,059 questionnaires, 357 subjects completed and returned the questionnaire within the specified time span. The response rate of the survey of 33.71%, was more than three times better than the average mail response rate of about 10% (Ferber, 1949 and Wentz, 1972). This rather high return rate is contributed to short written reminders mailed a few days after the original mailing.

EMPIRICAL ANALYSIS

A Venn Model stemming from empirical findings consists of four components as shown in Figure 1. The first component presents the major problems of TDI to China. The second evaluates the cross strait related government policies. The third discusses the coping strategies for reducing rising unemployment. The fourth focuses on sinicization. Each of the four components is succinctly analyzed below.

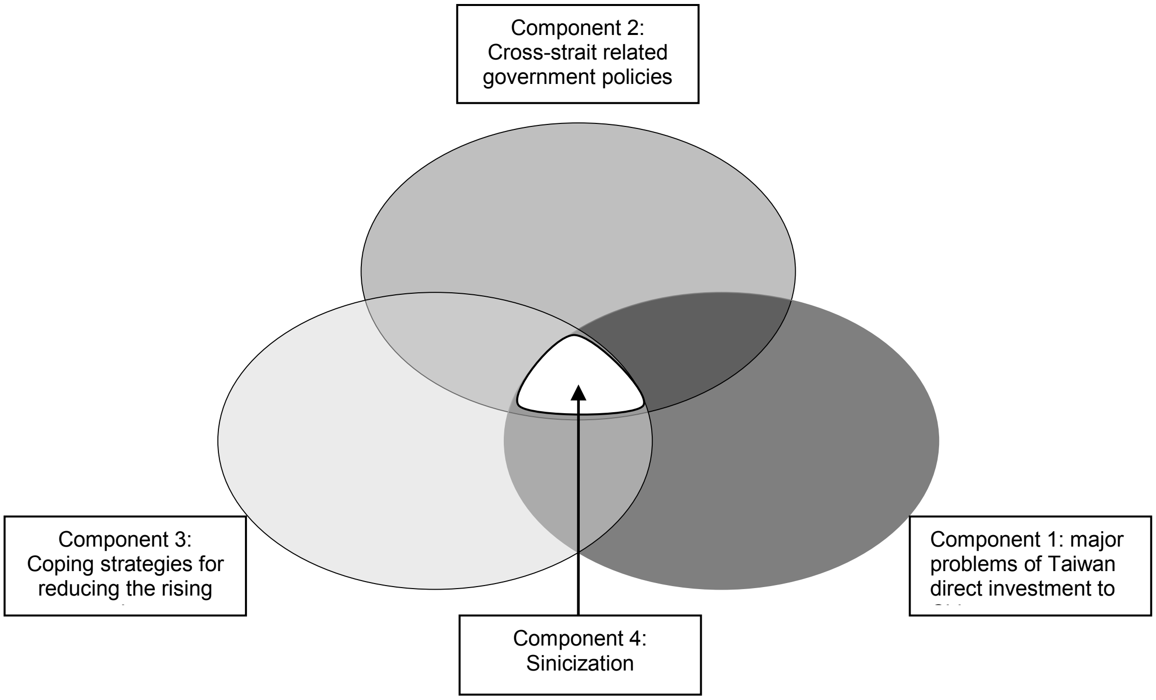
PROBLEMS OF TAIWAN DIRECT INVESTMENT TO CHINA

The continual transfers of capital from Taiwan to China cause severe problems in Taiwan's economy. No country can continue such a one-way series of capital transfers without increasing investments at home. An economy can only prosper through balanced investment at home and abroad. The respondents pointed out some major economic problems Taiwan must deal with.

Taiwan companies moved to China to takie advantage of low labor costs in China. Taiwanese firms dismissed their employees in Taiwan, and hired local workers in China. As a result, unemployment has become one of the most important issues in Taiwan. According to the Council of Labor Affairs, the unemployment rate in Taiwan was at 5.86 percent in November 2009. Taiwan was one of the four small tigers or minidragons in Southeast Asia. In the same period, the other three minidragons – Singapore, South Korea, and Hong Kong recorded the unemployment rates of 3.4%, 3.5%, and 4.9%, respectively.

The employment rate in Japan was at 5.2% in 2009. More than 700,000 people in Taiwan have not been able to find a job. The loss of jobs to workers in China produces an intense effect on labor and economic problems in Taiwan. The global financial crisis of 1997-2010 was a major cause for a sharp rise in unemployment in Taiwan. Currently the President Ma government actively promotes the Westward investment policy that exports jobs to China that worsens the unemployment in Taiwan. Therefore, rising unemployment in Taiwan has become one of the major ill effects of TDI to China on Taiwan.

Figure 1: A Venn Model



A Venn Model as shown in Figure 1 reflects the President Ma administration in dealing with four major issues. The first issue is the serious problems of continual transfers of Taiwan's capital to China. The second is the cross-strait policies that are over dependent on China. The third is the strategies coping with rising unemployment. The fourth is the drive for "sinicization." The Venn Model comprises four components or units. Component 1 consists of five subcomponents including rising unemployment, falling capital formation, losing business opportunities in Taiwan to China, transferring technology, and falling real wages. Component 2 also consists of five subcomponent including "no haste, be patient" policy vs. "Westward investment" policy, excessive TDI to China and effects, government policies closer to the employers than to workers, winners and losers for signing an ECFA, and signing an ECFA that benefits business enterprises at the expense of unemployment. Component 3 consists of eleven subcomponents; the first three include stabilization of general prices, improvement of management efficiency of state-owned enterprises, and financing businesses for job creation in Taiwan. The second three subcomponents include reverse investment from China to Taiwan, stop importing foreign workers, and discouragement of business relocations to China. The third three subcomponents are about balanced concerns for the employers as well as for workers, the gap between rich and poor, and diversification strategy. The last two subcomponents are to develop new business and industry in Taiwan, and to postpone inking an ECFA. Component 4 comprises two subcomponents such as a special country-to-country relationship, and "sinicization, Taiwan localization, and unification." Note that Component 4, "Sinicization," reflects the drive of President Ma for achieving his goal for eventual unification of Taiwan and China as shown in the common area of the three circles of the Model.

Capital formation refers to "the transfer of savings from households, individuals, and governments to business resulting in increased output and economic expansion" (InvestorWords 2010). Capital formation is about savings in an economy. Saving leads to investments that produce goods and services in an economy. The flows of TDI to China reduces capital formation of Taiwan. A decrease in capital formation leads to decreased investments that cause an employment reduction in Taiwan's economy. Today, more than 2 million Taiwan business people currently live in China. If these people had lived-in Taiwan, they would have created business opportunities at home. This indicates, Taiwan's domestic demands were weak as confirmed in a CNN report.

The Taiwan government has recently lifted the ban on technology transfer of 12-inch-wafer fabs and plate foundries to China. Lifting controls on wafer fabs and plate foundries could cause noticeable damage to Taiwan's economy. It is not only the most profitable industry yielded to China, but the core of Taiwan's high-tech industry. Taiwan will no longer enjoy a comparative advantage in the IT industry. In February

2010, President Ma approved another transfer of LCD faceplate technology to China from Taiwan. Such a policy will no doubt push up the unemployment rate in the Taiwan IT industry.

Over the past decade, Taiwan has recorded an expansive economy. However, real wages have dropped sharply. Taiwan's Gross Domestic Product grew about 18% in the past ten years, but the real wages shrank about 4% during the same period. Two reasons contribute to falling real wages in Taiwan. First, Taiwan direct investors relocated plants to China. Second, state-owned enterprises keep raising prices of products such as oil, gasoline, natural gas, and electricity. Households face a budget constraint of falling wages and rising costs. Thus, consumers are hard pressed to balance their budgets.

CROSS STRAIT RELATED GOVERNMENT POLICIES

Survey respondents pointed out that President Ma's cross-strait policies were over friendly and dependent on China. They expressed concerns of incessant transfers of Taiwan capital to China. The respondents feel that once Taiwan signs an ECFA, Chinese workers, goods, and services will flood Taiwan's markets. Thus, goods produced in agricultural, transitional, and labor-intensive industries in Taiwan will face stiff competition from Chinese imports. Cheap Chinese imports will force these industries to shut down implying a loss of jobs. Cross-strait related government policies of President Ma are in favor of China, big businesses, and the rich. None of his policies aims to take care of the poor in long run.

In 1996, then President Lee Teng-hui proposed a "no haste, be patient" policy as a guideline for Taiwan direct investments in China. He developed the cross-strait investment policy that reflects concerns of national security. Over the following eight years, the former President Chen Shui-bian of the Democratic Progressive Party approved some cases of TDI to China. Soon after President Ma came to power, he lifted all controls on TDI to China. Since then, the jobless in Taiwan are fast on the rise.

The public raises concerns about the Taiwan's excessive investments in China, because Taiwan's economy may become over reliant on China. The continual TDI to China is against the "investment principle of diversification." From a diversification standpoint, It is dangerous to exclusively promote investing in China. Putting all ones eggs in one basket might break them all if the basket carrier falls. The Ma Ying-jeou government has not had a long-term investment plan to improve Taiwan's unemployment conditions. Since President Ma was in power, he approved more transfers of advanced technology to China. As a result, Taiwan suffers a high rate of unemployment and a widening gap between the rich and the poor. Taiwan direct investors closed plants in Taiwan and moved them to China. They left many unemployed workers in Taiwan. Other workers with a low pay job suffered falling real wages. If TDI to China continues, a vision for a speedy recovery of Taiwan's depressed economy would remain illusive.

The President Ma government has passed economic policies in favor of the business companies or groups with special tax breaks. The government has not proposed any special tax relief bill for the working people in Taiwan. The President Ma administration is more responsive to the demands of business firms than to the needs of workers. The Ma government often invites business executives to take part in developing cross strait policies without representation of labor. As a result, the President Ma government often inadequately addressed public complaints. Although the government did carry out several short-term job plans for the unemployed, the results were not as effective as planned. Up to this point, the Ma administration has not been able to develop any long-term policies that could reduce the high unemployment problem.

Regardless of public opposition, the Ma administration insists on signing an ECFA with China. Nevertheless, President Ma has not told the public and the lawmakers of the Legislative Yuan about the ECFA's contents and its negative impacts on agricultural and traditional industries in Taiwan. An ECFA allows China's goods and services produced with low costs of production to be sold in Taiwan. Therefore, Taiwan's markets will be full of cheap Chinese imports and Taiwan will lose its competitive edge to China. China will weaken and wipe out more than a million Taiwan's small and medium sized business firms in traditional and labor-intensive industries. These firms are the backbone of Taiwan's economy. The government should clearly communicate the nature of the ECFA, conduct extensive impact studies, as well as identify potential winners and losers from the agreement. The Ma administration should not make such an important decision without full disclosure and extensive discussion. The administration recruited some business firms in support of its decision to sign an ECFA. However, the public is firmly against signing an ECFA. It is surprising that President Ma insists on signing an ECFA with China who has more than 1,500 missiles aimed at Taiwan?

The China Post News Staff (2010) reported that in December 2009, the Commonwealth Magazine conducted a questionnaire survey on some 1,109 Chief Executive Officers of the top business firms in Taiwan. Some 90% of surveyed subjects stated that they supported signing the ECFA pact with China. More than 70% of respondents stated that inking the pact would help reduce tariffs against Taiwan's exports to the region of ASEAN (the Association of South East Asian Nations). Signing an ECFA would improve the competitive advantage of Taiwan business enterprises for doing business in the ASEAN region that includes China. The Commonwealth Magazine study inferred the proposed ECFA aimed to increase profit through tariff cuts and to achieve best competitiveness. An ECFA does not offer a solution to the problem of high unemployment in Taiwan. Most likely, signing an ECFA contributes to increasing the jobless rates at home.

COPING STRATEGIES FOR REDUCING THE RISING UNEMPLOYMENT

The incessant transfers of Taiwan capital to China have developed tough problems in Taiwan's economy. High unemployment is one of the most serious problems Taiwan has ever faced. The respondents offered eleven strategies to cope with the rising unemployment in Taiwan. These coping strategies are sound in theory and effective in practice.

The state-owned and managed enterprises in water, electricity, salt, sugar, oil, natural gas, gasoline, and other goods are supposed to keep the general prices stable. Nevertheless, under the President Ma administration, these stated-owned enterprises have increased the prices of their products. As a result, other industries were compelled to raise prices of goods and services. Prices behave flexibly upward and rigidly downward. For example, gas prices often go up more and come down less. As the general level of prices go up, the consumers suffer falling buying power. Therefore, controlling general prices should be the primary role of the state-owned enterprises in Taiwan. So far, President Ma has not been able to present to the public any helpful strategies to release recessionary pressures. The first empirical strategy, the surveyed subjects recommended, is the government must stabilize general prices.

State-owned or government enterprises are set up to serve the public with goods and services at reasonable prices. Taiwan's state-owned enterprises operate in either the monopolistic market or the oligopolistic market. Therefore, government enterprises should not strive for windfall profits. They should aim for a reasonable return. To keep prices of goods and services low, state-owned enterprises need to improve management efficiency of strategic, physical, and human resources. If Taiwan's state-owned enterprises had improved their management efficiency, they would have been able to sell their goods and services at fair prices. Therefore, improvements in management efficiency of Taiwan's state-owned enterprises is long overdue.

As stated previously, the effluences of TDI to China resulted in plant relocations to China and left many unemployed in Taiwan. Taiwan direct investors in China are the primary culprits. Some Taiwan direct investors financed their business operations with Taiwan capital and left jobless workers and a huge debt behind. Society should publically condemn these debtors. Taiwan needs a long-term strategy to assuage the problem of high unemployment that calls for financing business for job creation. The government should encourage financial institutions to finance business plans that create jobs in Taiwan in the short and long run.

It is harmful that one direction continual transfers of TDI to China results in rising unemployment and reductions in domestic investment. One way to resolve the problems is to reverse investment from China back to Taiwan. This might be done with an attractive incentive package. The government should organize a reverse investment committee consisting of government officials, business executives, and labor representatives. Strong support from local government would help the committee objectively complete the task.

Had Taiwan not imported foreign workers, the current problem of high unemployment would not have been so severe. If foreign workers keep coming, they will keep competing on the Taiwan job market. Therefore, the respondents strongly recommend that Taiwan import no more foreign workers.

President Ma recently established a goal of reducing unemployment to 5 % by 2011, but did not specify how to achieve the goal. The government needs to slow down Taiwanese firms moving to China if Taiwan is to achieve this goal. The respondents expect President Ma's actions not words, for he has made so many empty promises. For example, one of his broken promises called for a "6-3-3" plan. The plan strived for achieving a 6% economic growth, an average per capita income of US$30,000, and a 3% unemployment rate by 2009.

President Ma's cross-strait policies are characterized by closer relations with employers than with workers. That is, his government has been more responsive to concerns of the former than that of the latter. Had he addressed the issue of high unemployment more effectively and efficiently earlier, he would have likely received better marks on the performance poll. Surveyed subjects expect the government must achieve balanced concern for the employers as well as for the workers.

The gap between rich and poor in Taiwan is widening, signaling an unstable economy. The poor cannot gain a fair share of Taiwan's prosperity. President Ma should shoulder the responsibility to redistribute incomes of the taxpayers by raising taxes on the rich and lowering taxes for the poor. The government needs to complete three immediate tasks. One is to create employment opportunities for the jobless. Two is to design a sustainable welfare system. Three is to reform the current tax schedule. Civil servants, teachers, and military personnel pay no taxes. The respondents expect that President Ma should apply the needed human-physical-financial resources to bridge the gap between the rich and the poor.

The principle of investment calls for diversifying to spread risks. Taiwan should diversify its investments in other countries. Likely, China would exert political influences on Taiwan; therefore, Taiwan would increase risks of eroding its sovereignty. If Taiwan becomes overly dependent on the Chinese economy, Taiwan's economy would become a subset of the Chinese economy. Taiwan's economy would be subject to political manipulation by China. China may speed up sinicization to achieve unification. Diversification also reflects a concern of national security by improving safeguards on sovereignty.

Taiwan should not overemphasize the IT industry. In addition, Taiwan sould not overlook the ill results of the relocation of most IT firms to China. Taiwan's economy has become hollow because it lacks other sustainable industries. Business firms in agricultural, traditional, and other areas still produce goods and services in Taiwan. Nevertheless, they will soon lose their competitiveness because the large quantity of cheap Chinese goods should Taiwan sign the ECFA pact. Therefore, these firms will be out of business. Under this circumstance, the respondents strongly recommend that Taiwan engage in R&D to develop new businesses in non IT industries. It is probable the agricultural, traditional, and labor-intensive industries would not be able to survive after the signing the ECFA pact. Until the public and the legislators get a chance to assess the impact of an ECFA on Taiwan's economy, to postpone signing ECFA would be the right action to take.

SINICIZATION

The governing behaviors of President Ma have been tilting toward China. He deals with the major problems of capital transfers, cross-strait policies, and unemployment with his driving force of sinicization in the center of a Venn Model as shown in Figure 1. The surveyed subjects responded to President Ma's drive for achieving "sinicization" concisely. They clearly pointed out that President Ma aimed to bring Taiwan to unification with China.

President Lee Teng-hui, the first Taiwan-born president (1988 – 2000) of Taiwan (Republic of China) was the strongest proponent for achieving Taiwan localization. He highlighted Taiwan first, and proposed that China and Taiwan have a special country-to-country relationship. President Chen Shui-bian (2000 – 2008), another Taiwan-born president adopted the same cross-strait policies of dissinicization. Dissinicization means away from Chinese influences. For 20 years (1988-2008), both President Lee and President Chen firmly believed that Taiwan should not strive to sinicize or to unify with China. President Lee Teng-hui was the chair of the Kuomintang Party; President Chen Shui-bian was the chair of the Democratic Progressive Party. Although they kept contact with China, Taiwan remained a country with full sovereignty. Both presidents governed a cross-strait policy through "the three links" with China. The three links are direct postal, telephone, and airline links between Fujian province of China, and Taiwan's islands of Quemoy and Matsu. The three links indirectly routed through Hong Kong. Each cross-strait policy aims to guard Taiwan sovereignty under President Lee as well as President Chen.

Sinicization is a term defined here as Taiwan increases its cultural, economic, and political ties with China. That is to bring the ties under Chinese influence. There are two groups of people in Taiwan: One group is for sinicization, and the other is for Taiwan localization. Most of Taiwan residents are supporters of Taiwan localization. These supporters strive for achieving Taiwan independence.

Since President Ma Ying-jeou won the presidential election in 2008, cross-strait policies have helped China speed up sinicization and unification with Taiwan. A case in point, he lifted control on "the three links" which indirectly routed through Hong Kong. He opened airports and seaports to China for direct access without concerns of national security. President Ma is an active practitioner of "sinicization" as reflected in his governing behaviors.

A news video on February, 28-2010 shows President Ma conversing with a 90-years-old poet. He said to the poet, "My name, Ma Ying-jeou, meant for unification with China." He is carrying out the will of his late father for unifying Taiwan and China. The will, mind, and governing behaviors of President Ma clearly show that he belongs to a minority group (15%) of Taiwan residents. His cross-strait policies lean toward China aims to achieve "unification."

CONCLUSION AND RECOMMNDATION

As shown in Figure I, the model fully reflects concerns of the unemployed, the poor, the enterprises, the government, and President Ma's leadership and ability in running the government. An objective of the study is to produce a set of empirical strategies coping with the ill effects of TDI to China on Taiwan. Another objective is to present a model stemming from empirical findings as an addition to the existing literature. The third objective is to serve as a reference source for policy makers who would benefit from the research.

Taiwan's depressed conditions of high employment are surmountable. President Ma could ease the conditions if he had the will and the leadership in allocating needed resources to alleviate Taiwan's economic problems. Thus, if he decides to improve the quality life of Taiwan residents and to raise his low performance ratings, respondents strongly recommend that President Ma take the following three actions: 1) Suspend the cross-strait policies that export jobs and capitals to China, 2) Slow down "sinicization" and start to focus on "Taiwan localization," 3) Carry out the eleven strategies drawn from the empirical findings for coping with the severe problem of the rising unemployment in Taiwan.

There are a couple of limitations of the present study. One limitation is the paper only focuses on qualitative presentation of the model as shown in Figure 1. The other is the model that does not show feedback. Feedback will be drawn from future research with other groups of respondents. An increasing number of Taiwan firms take orders for goods in Taiwan and produce the goods in China. Such a practice causes severe problems of unemployment in Taiwan. Thus, one suggestion for future research is to design a model on "reverse investments" from China back to Taiwan." Another is to develop a quantitative model for "financing investments that create jobs" in Taiwan.

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EVIDENCE ON E-BANKING QUALITY IN THE CHINA COMMERCIAL BANK SECTOR

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ABSTRACT

In the global bank sector, cost savings potential and speed of information transmission are reason to rapidly develop E-banking. In China, there are 130 commercial banks, most of which supply E-banking service to their customers. This paper analyzes factors that influence E-banking quality in the commercial bank sector in China. The results will help financial organizations formulate appropriate marketing strategies for E-banking, and commercial banks to increase customer satisfaction. Based on the literature review, a research model was developed. Eleven factors were selected from nine areas to gain a better understanding of E-banking service quality. Multiple regression was used to analyze the data. This result shows that Security, Reputation and Customer Service are the major factors affecting the adoption of E-banking services in China. Furthermore, the results show that 20% of sample respondents have already adopted E-banking services is encouraging and suggests a bright future for virtual-banking in China.

JEL: G2

KEY WORDS: Commercial bank, E-banking quality, China, Dimensions

INTRODUCTION

In the last 20 years, the internet has been rapid developing. Global internet access exceeded 1,094 million people in December 2006 (IWS, 2006). This implies that 1,094 million people all over the world used the internet to connect with each other. The number of internet users has increased by 157% in the last five years (www.internetworldstats.com). Internet is a technology that spreads fast. Internet use is estimated to double every hundred days. Since 2000, internet banking has experienced explosive growth in many countries and has transformed traditional banking practices. By offering internet banking services, traditional financial institutions seek to lower operational costs, improve consumer banking services, retain consumers and expand market share (Saadullah, 2007).

The financial service industry was one of the first to recognize the potential of the internet as a means of interacting with customers. However, current data compiled by the Web Marketing Association shows that banks are falling behind other industries with respect to innovation within their Internet channels (Bruno-Britz, 2006). Since Pakistan's banks made a debut on Internet banking in March 2005, surveys have shown that the average user is gaining experience and confidence online and is increasingly getting on the Internet to perform tasks important to their daily lives including conducting financial transactions and seeking information about finances (Yun, 2007).

The bank sector is one of the most important service sectors for a nation's economy. Modern, highly industrialized and technology-driven economies are threatened by higher risks than ever; thus, individuals need to protect themselves against private risks. From the banks' viewpoint, the use of Internet banking is expected to lead to cost reductions and improved competitiveness. This service-delivery channel is seen as powerful because it can retain current Web-based customers who continue using banking services from any location. Moreover, Internet banking provides opportunities for a bank to develop its market by building a new customer base from existing Internet users (Suganthi et al., 2001; Dannenberg & Keller, 1998; Zineldin, 1995). However, online banking service quality has been evaluated as inferior by numerous customer (Rubino, 2000). Since the Internet is a relatively new transactional channel, online banking may not clearly understand what specific services are desired. Many customers have not yet formed clear expectations for online retailers (Zeithaml et al. 2001). The importance of service quality and the challenges facing Internet-based services necessitate insight on the part of managers about what attributes customers use in their evaluation of online service quality. However, a rigorous measurement instrument of online service has not been available (Cox and Dale, 2001; O'Neil et al., 2001; Yoo and Donthu, 2001). In order to improve that condition, this study intends to: 1) Identify the more salient service quality dimensions for online banking; 2) Confirm the identified major service quality dimensions for online banking ; and 3) Determine the relative importance of each identified service quality dimensions in producing overall online banking service quality.

The authors employed a two-stage approach in developing a reliable and valid measurement of online banking service quality. A broad conceptual framework which integrates theory and related concepts in the customer service quality is established. The authors applied an ethnographic content analysis of 317 customer reviews of online banking. Next a confirmatory factor analysis was used to outline eleven major online banking service quality dimensions: Reliability, Convenience, Efficiency, Comfort, Serviceability, Security, Privacy, Assurance, Reputation, Customer Service, Product Differentiation and Customization. The remainder of this paper is organized as follows. In the next section we discuss the relevant literature. Following the literature review, sections discussing the data and methodology and test results are presented. The paper closes with some concluding comments.

LITERATURE REVIEW

Prior research has empirically found that reliability is a leading dimension of E-banking quality; and refers to consistency of delivery and dependability in relation to E-banking websites (Kettinger and Lee, 1997; Pitt et al., 1999). An online banking provider is considered reliable if it performs the service as promised (Tan et al., 2003), the web site is available 24/7 and is in working condition (Zeithaml et al., 2001). Apart from that, E-banking provides higher degree of convenience that enables customers to access banking at all times and places. The convenience is perceived as a measure of relative advantage (Joseph et al. 1999). Therefore, it is hypothesized that convenience has positive effect on consumer perceived of e-banking quality.

Zeithaml et al. (2002) find that there is a significant correlation between efficiency and e-banking quality. Speeds of download and response time are two of important facts of e-banking efficiency in consumer perceived satisfaction. Speed of download depends on the nature downloaded content, the computing hardware and method of connection used to download information (Jayawardhena and Foley, 2000). Most site demonstration downloads are small snapshots, and some users have to download the program in order to view the demonstration. Most consumers perceive downloading involves risk of importing unwanted viruses, and consume hard disk space. Very often, slow response time after any e-interaction leads to a delay of service delivery and makes consumers unsure about whether or not the transaction is completed (Jun and Cai, 2001). In addition, Kwon & Chidambaram (2000), studying consumer perceptions of e-banking service quality concluded that comfort is one of five dimensions sufficiently representative of perceived e-banking quality. Thus, it is hypothesized that efficiency and comfort have positive effect on e-banking quality.

Madu and Madu (2002) identify other factors of paramount importance in ensuring the quality of e-banking, i.e. the ability of an innovation to meet users' needs using different feature availability on the web site. For instance, the provision of interactive loan calculators, exchange rate converters, and mortgage calculators on web sites draw the attention of both users and non-users into the bank's web site. These calculators are very useful for some bank customers. Therefore, it is hypothesized that serviceability has positive effect on consumer acceptance of e-banking quality.

Security and privacy are two important dimensions that may affect consumer perceptions of e-banking quality. Encryption technology is the critical feature at bank sites to secure information privacy, supplemented by a combination of different unique identifiers, for instance, a password, mother's maiden name, a memorable date, or inactivity automatically logs users off the account. The Secure Socket Layer, a widely-used protocol for online credit card payment, is designed to provide a private and reliable channel between two communicating entities. The use of Java Applet that runs within the user's browser; the use of a Personal Identification Number, as well as an integrated digital signature and digital certificate associated with a smart card system all enhance security (Hutchinson and Warren, 2003). Thus, a combination of smart card and biometric recognition using fingerprints offers a more secure and easier access control for computers than the password method. Hence, it is hypothesized that security and privacy have a positive effect on consumer acceptance of e-banking quality.

Assurance refers to one important dimension that may affect e-banking quality. Madu and Madu (2002) have proposed assurance as a dimension of online service quality based on their literature review. Schneider and Perry (2000) suggested some web features that help promote assurance to consumers. For instances, providing detailed information, stating regulations or rules of the transaction, and including the third party trust assurances (e.g. SSL certificate). Cheung and Lee (2003) also recommended several guidelines for building trust/assurance, including affiliation with an objective third party, stating the guarantee policy and statement on the website, and maintaining a professional appearance of the website. Thus, it is hypothesized that assurance has positive effect on e-banking quality.

The concept of reputation has been looked at from many different perspectives including applied economics (Shapiro, 1983) and strategic management (Fombrun and Shanley, 1990). From a marketing perspective, the concept of reputation has often been associated with the idea of brand equity (Aaker, 1996) or the organization's credibility to its customers (e.g. Hyde and Gosschalk, 2005). In general, reputation may be considered the result of the organization's relational history with the context in which it functions. In this respect, the set of interactions produced between the company and its customers will be a source of information for them to appreciate the quality of the products in comparison with the available alternatives (Yoon and Kim, 2000). That is, reputation may influence how consumers perceived e-banking quality compared to those of competing banks (Fombrun and Shanley, 1990) and therefore, it is hypothesized that reputation has a positive effect on e-banking quality.

Product differentiation and customization involves adapting web sites to better suit customer individual requirements, and is achieved through the tracking and data mining of customers past transactions (Surjadjaja et al., 2003). Product differentiation and customization are important factors when customers choose e-banking providers. Internet providers, who provide individualized service, "rather than auto replies" to customer queries or requests, show greater empathy towards their clientele (Madu and Madu, 2002, p. 253). Based upon a comprehensive review of the literature, the proposed e-dimensions will be explored empirically in the context of e-banking.

Micah (2010) made the point that "Online customers are literally invisible to you (and you to them), so it's easy to shortchange them emotionally. But this lack of visual and tactile presence makes it even more crucial to create a sense of personal, human-to-human connection in the online arena." Wolfinbarger and Gilly (2003), through focus group interviews, a content analysis, and an online survey, uncovered one dimension of online retailing experience: customer service. In this study, the authors hypothesize that customer service has a positive effect on e-banking quality.

The authors of the present study reviewed a mass of publications about online banking quality. These publications come from European, North American, and Asian countries. Some advanced online banking in China and developed countries was coordinated and compared. As a result, a suitable research model was build to guide data collection (See figure 1). The purpose of this model is to build an appropriate conceptual framework for identifying and verifying the factors that may affect the quality of commercial online banking in China. These issues are inter-connected and may affect each other.

Based on the literature review and the theorization made in the present study, the dependent variables were developed. This is online banking quality. All of variable adapted from some famous scholars. The variables used in the analysis are presented in Table 1.

DATA AND METHODOLOGY

The survey was conducted in cooperation with the four state-owned commercial banks online banking in China, which mailed a questionnaire to 5,500 randomly selected customers. Only one mail was sent to each consumer. In order to increase study participation, an incentive lottery was offered. Those who completed the survey would have their names entered into the raffle; and there are two cash prizes. Data were collected during the spring of 2009.

The questionnaire consisted of five sections, two relevant for this paper. The first gathered background information on e-banking providers, frequency of use, service and demographics (e.g., gender, age, etc.). The second section consisted of 34 statements that represent the e-quality factors. The statements were randomly ordered on the questionnaire. Respondents were asked to rate how much they agreed with each factor related to e-banking service, and the quality of e-banking using a seven-point scale (1= totally disagree to 7= totally agree).

Figure 1: Research Framework

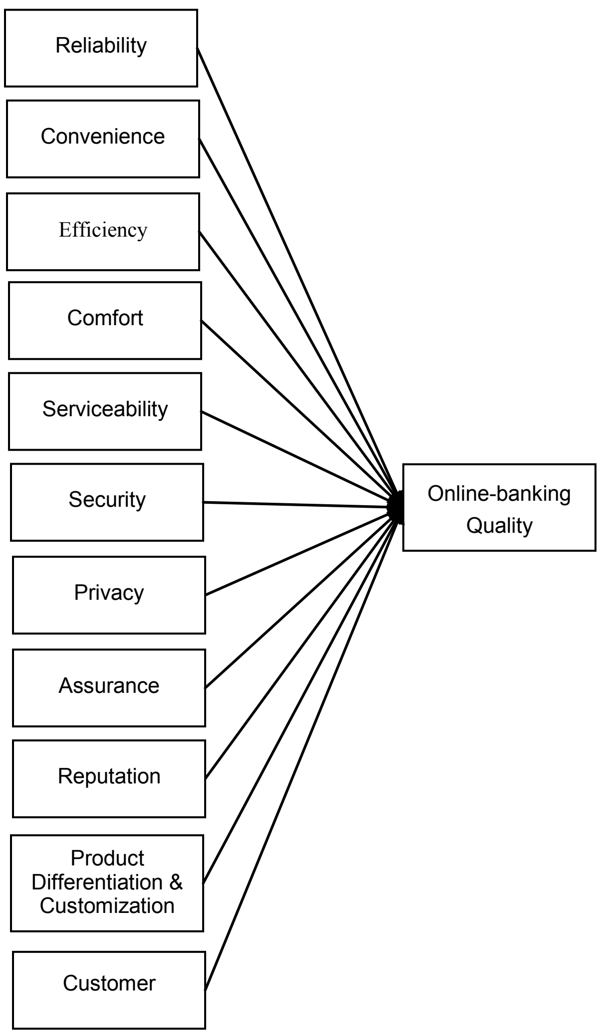

Figure 1 presents the research model used to the guide data collection process

Table 1: Variable Summary

Independent Variables	Literature review Independent Variables
1. Reliability	1. Kettinger and Lee (1997), Pitt et al. (1999), Zeithaml et al. (2001), Zhilin et al. (2004)
2. Convenience	2. Joseph et al. (1999), Zhilin et al. (2004), Pedro Pinheiro Cruz, (2005), Sasdullah Khan (2007)
3. Efficiency	3. Zeithaml et al. (2002), Joseph et al. (1999), Zhilin et al. (2004), Pedro Pinheiro Cruz, (2005)
4. Comfort	4. Pablo and Pedro (2005)
5. Serviceability	5. Madu and Madu (2002), Pedro Pinheiro Cruz (2005)
6. Security	6. Parasuraman et al.(1985), Madu and Madu (2002), Wolfmbarger and Gilly (2003)
7. Privacy	7. Zeithaml et al. (2002), Zhilin et al. (2004), Sasdullah Khan (2007)
8. Assurance	8. Madu and Madu (2002), Pedro Pinheiro Cruz, (2005)
9. Reputation	9. Madu and Madu (2002), Pedro Pinheiro Cruz (2005)
10. Product Differentiation	10. Joseph (1999), Pedro Pinheiro Cruz (2005)
11. Customer Service	11. Wolfinbarger and Gilly (2003), Pedro Pinheiro Cruz (2005)
Dependent Variables	**Literature review Dependent Variables s**
1.Online banking Quality	1. Pitt et al. (1999), Pablo and Pedro (2005)

This table summarizes the independent and dependent variables used in the analysis.

Principal components factor analysis was used to determine whether the observed correlations among the 34 items representing the e-banking quality factors could be explained by the existence of a smaller number of underlying e-quality dimensions. Only factors that accounted for a variance greater than one (that is eigenvalues > 1) were extracted. Varimax rotation, an algorithm that minimizes the number of variables that have high loadings on the orthogonal factors, was used to improve interpretability. Factor scores from the factor solution were analyzed to prove the groups of the independent variables. All of the independent variables belonged in the first group. Multiple regressions are used to demonstrate the independent variables have a positive relationship with online banking quality.

Internet technology has the potential of enabling the banks to enhance their internet offerings with features that improve customer-service interactions and supply them with options for increasing control of their internet banking experience. However, as with any new technology, online banking presents certain risks for banks. A host of liabilities, such as inadequate planning, faulty deployment, insufficient internal controls, legal and regulatory ambiguities and weak outsourcing standards, may pose significant risks to an online banking system. Data integrity, confidentiality, authentication and authorization issues also place stress on an immature online banking system (Stakelbeck, 2005). It is a fact that online banking of commercial banks in China has some flaws when compared with that of some developed countries. In an attempt to identify these issues, the following research question was formulated for the present study: What factors will affect the quality of commercial online banking in China? Based on the research question and an extensive literature review, a number of hypotheses would are tested to clearly exhibit the inter-relationships between the independent variables and dependent variables. These hypotheses are listed below: Each of the variables is hypothesized to have a positive relationship with online banking quality.

RESULTS

The survey was conducted in cooperation with the four state-owned commercial banks online banking in China, which mailed a questionnaire to 5,500 randomly selected customers. The scope of the study was explained in a cover letter and an enclosed return envelope guaranteed the anonymity of the results. After three weeks a total of 1,611 respondents (29.29 %) had replied, of which 171 questionnaires had more than 10% missing values and were excluded from further analyses. Missing EM-Algorithm was used for data imputation for the remaining 1,440 data records, leading to a final response rate of 26.18%. Demographic characteristics of the respondents are listed in the appendix. The characteristics of our sample were compared to those of the universe of Chinese Internet users published by the China Internet Network information Center (2009). No statistically significant differences were found. Furthermore, T-tests showed no significant difference between early and late respondents. The presence of a difference could indicate a non-response bias in quantitative surveys (Armstrong and Overton 1977). As non-normality of data occurred in the data file, the authors used bootstrapping for testing the effects of non-normal distributed variables on our structural equation model (Efron and Tibishiran, 1993). The analyses produced no significant changes in parameter estimation.

Empirically validated scales were adapted to the context of the study and used to measure the respective constructs. Additionally, a confirmatory factor analysis was used to assess construct measurement. Four items were removed based on inadequate factor loadings and theoretical arguments. A 7-point Likert scale was used to measure all items. In the case of Web site quality, item parceling was used to reduce the total of 11 items.

Table 2: Multiple Regression Results: Enter Methodology

Model	Standardized Coefficients Beta	t	Sig.
(Constant)		2.436*	.016
1. Reliability	.074	1.199	.232
2. Convenience	.092	1.390	.166
3. Efficiency	.050	.816	.416
4. Comfort	-.024	-.355	.723
5. Serviceability	.049	.690	.491
6. Security	.179	2.636*	.009
7. Privacy	.065	1.027	.306
8. Assurance	-.046	-.736	.462
9. Reputation	.214	3.064*	.003
10. Product Differentiation	-.023	-.436	.664
11. Customer Service	.393	7.634*	.000

*Note: *Coefficients significant to a level of 0.01.*

Table 3: Regression Coefficients: Stepwise Methodology

		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.677	0.227		7.385	0
	Customer Service	0.743	0.041	0.789	17.913	0
2	(Constant)	0.905	0.214		4.223	0
	Customer Service	0.487	0.047	0.517	10.471	0
	Reputation	0.386	0.045	0.421	8.528	0
3	(Constant)	0.709	0.201		3.517	0.001
	Customer Service	0.38	0.047	0.403	8.086	0
	Reputation	0.275	0.046	0.3	5.952	0
	Security	0.256	0.045	0.292	5.741	0
4	(Constant)	0.601	0.203		2.955	0.004
	Customer Service	0.368	0.047	0.39	7.893	0
	Reputation	0.226	0.05	0.246	4.542	0
	Security	0.211	0.048	0.241	4.443	0
	Convenience	0.123	0.049	0.136	2.503	0.013

The authors use the multiple regressions to test the model. From the ANOVA[b] table, the result shows significance in the overall model (sig. = .000[a]). It was also notable that this model has allowed us to explain at a very high amount of the variance of online service quality (R^2=0.778) in Table 2. Based on the standardized estimates online banking quality is clearly and positively influenced by customer service in handling personal data (β= 0.393) and reputation (β= 0.214), and to a lesser extent by security (β=0.179). At the same time, the authors find the indirect affect of online banking quality is convenience (β= 0.092) in Table 2. It validated in Table 3.

Next, The following regression equation was estimated to identify the determinants of E-banking Quality: E-banking Quality = 0.074（Reliability）+ 0.092（Convenience）+ 0.05（Efficiency）+ -0.024（Comfort）+ 0.049（Serviceability）+ 0.179（Security）+ 0.065（Privacy）+ -0.046（Assurance）+ 0.214（Reputation）+ -0.023（Product Differentiation and Customization + 0.393（Customer Service.

CONCLUDING COMMENTS

A properly configured online banking infrastructure will ensure orderly growth and sustainable economic progress for China. Consumers will evaluate online banking products and services based upon trust, confidence, user privacy, transaction legitimacy, security, system dependability and merchant acceptance and conveyance. To ensure success, a blueprint must be provided for all banks, customers and third-party vendors. Without such guidance, China may find itself with several conflicting e-banking standards which will ultimately inhibit the development and growth of the country's financial system. The result of the present study indicate that certain factors can affect the quality of China's commercial banks. One factor in particular-- online banking quality—was found in the present study to have influenced consumers' intent to use the internet banking. Research results such as this one will help China's commercial banks establish a blueprint which directs the internet bank's development and help the commercial banks to consummate online banking services. This, along with other goals, is what the present study is intended to achieve.

A 7-point Likert scale was used to measure all items. A confirmatory factor analysis was used to assess construct measurement. Four items were removed after the analysis showed inadequate factor loadings and theoretical arguments. The authors used the multiple regression enter and stepwise techniques to analyze the data.

In brief, the eleven hypotheses are real: Reliability, Convenience, Efficiency, Comfort, Serviceability, Security, Privacy, Assurance, Reputation, Customer Service, Product Differentiation and Customization are significantly and positively related to online banking quality. The result shows that customer service is the most important element of online banking quality for the commercial bank and online banking customer. Commercial bank's convenience, security and reputation are also important elements for commercial bank. These are important reasons for online banking customers to choose the service (CFCA report). Reliability, efficiency, comfort, serviceability, privacy, assurance, product differentiation and customization show positive relationship with online banking quality of Chinese commercial banks.

There are several limitations to the current study. First, the sample is China-focused with all of the respondents residing in China. The participants in this study may process attributes and behaviors that differ from those in other parts of the world. Next, as mentioned earlier in the data collection section, it was impossible to send follow-up surveys and thus no attempt was made to ascertain the existence of non-response bias by comparing responses from the first-wave surveys with those of a second wave.

Future research could provide several extensions of the current study. First, the measurement instrument constructed in this study can be used to investigate how consumer perceived online service quality affect customer satisfaction and in turn purchasing behaviors such as customer repurchase intentions and loyalty. Similarly, the antecedents of customer perceived online service quality may also be examined using the measurement instrument. Second, the current research focuses on service quality factors perceived by consumers who have conducted online transactions. However, a mass of individuals primarily utilize the Internet as information sources and have not conducted commercial transactions. These consumers may have some unique perceptions of service quality. Thus, further research can develop a more generalized service quality scale by include the perceptions from both groups. Finally, as the e-commerce field becomes increasingly mature, consumers will shape clear expectations for online service quality attributes. More and more industry-wide service standards will be set up and be accepted. Thus, future studies may utilize the expectation-disconfirmation paradigm to measure online service quality and customer satisfaction.

APPENDIX

Questionnaire about factors that influence colleges' students on adopting online banking service in China

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The questionnaire has two (2) parts. All questions are about fundamental services and functions of online banking which you use. Please answer all questions carefully. Note that all responses are handled anonymously!

Part 1 Personal Data

Gender: Female □ Male □
Education: High School or below□ Undergraduate □ Graduate □

Do you use online banking service in China? Yes □ NO □

Which bank's online banking service do you use?
Bank of China □ Industrial and Commercial Bank of China □ China Construction Bank □
Agricultural Bank of China□ Others _______________

How long time do you use online banking service in USA?
Less than 6 months □ 6-12 months □ 12-18 months □ more than 18months □

How often do you use online banking service in USA?
Less than 1 time/week □ 1-2 times/week □ 3-4 times/week □ 5 or more times/week □

Part 2: Please answer choosing a number that most describes you think. The smaller number you choose is the more you disagree, and the bigger number is the more you agree with the statement. (1=totally disagree, 7=totally agree)

Example	Totally disagree						Totally agree
	1	2	3	4	5	6	7
Please circle the number closest to you answer	1	2	3	4	5	6	7
1. My online banking provides accurate e-banking information and continuous improvement of financial records me.	1	2	3	4	5	6	7
2. I think I can access anytime and anywhere, and save time as compared to conventional banking.	1	2	3	4	5	6	7
3. I think to use e-banking to deal with my daily bank's events is very efficiency	1	2	3	4	5	6	7
4. I think my e-banking website is comfortable for me.	1	2	3	4	5	6	7
5. I think my e-banking website is Serviceability	1	2	3	4	5	6	7
6. I feel safe my in online transactions and secure in providing sensitive information 7. for my online transactions.	1	2	3	4	5	6	7
8. I think my e-banking companies keep customers information private and confidential	1	2	3	4	5	6	7
9. I think my e-banking provider is assurance	1	2	3	4	5	6	7
10. I think that reputation for e-bank provider is very important issue when I choose my 11. online banking service	1	2	3	4	5	6	7
12. I think e-banking's product differentiation and customization is very important issue 13. when I choose my online banking service.	1	2	3	4	5	6	7
14. I think customer service quality of e-banking is very important issue when I choose my online banking service.	1	2	3	4	5	6	7
ONLINE BANKING QUALITY							
15. I believe my online banking services provide good quality	1	2	3	4	5	6	7

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FORMS OF ASSOCIATION OF ITALIAN MUNICIPALITIES: EMPIRICAL EVIDENCE

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ABSTRACT

For several decades a process of transfer of functions and services from the highest levels of government to local authorities has occurred in Italy. This has resulted in new and broader responsibilities for Italian municipalities that are, in most cases, small (called "Dust Commons"). This presents new challenges for these municipalities who often have difficulty managing the sevies and in strategic planning to devellop appropriate strategies. A real risk in recent years is that functions transferred to lower levels of government can not be carried out quantitatively and qualitatively with incurring excessive costs. One pontential solution to this problem is implementation of associated forms of services and functions management whereby municipalities cooperate in providing the services. The aim of this paper is to show how this form of partnership can reduce costs and improving the effectiveness of services.

JEL: M10

KEYWORDS: Municipalities, Unions of Municipalities

INTRODUCTION

For the past two decades Italy, has transfered functions and services from higher levels of government to local authorities, which culminated in the reform of Title V, Part II of the Italian Constitution. This has resulted in new and broader responsibilities for the Italian municipalities. The municipalities have experienced some difficulties in the management of the functions assigned to them. Consequently, the functions transferred to them can not be effectively carried out, are inadequate in quantity and quality, and are expensive. In order to overcome these issues, the legislator intervened by providing various forms of association for the management of services and functions. This legislation is aimed at the association and cooperation of municipalities. The most common of these associations is the Unions of Municipalities.

This new vision of Unions of Municipalities led to the aggregation of local administrations. The toal was to respond to multiplicity and diversity of functions being exercised, to change in expectations of local society towards the quality of results and improved efficiency and economy of local public administration. Local authority is a strategic node of a network of public and private institutions to carry out tasks of delivery of public services, regulatory, licensing and monitoring (Ruffini, 2000, pp. 77-80).

The mechanism of development of forms of cooperation and inter-municipal associations can be based on technical-managerial reasons, including those circumstances that can be expressed in terms of affordability or improvement in municipal management functions, and on strategic and organizational reasons, which push the institution to improve its organizational arrangement or the definition of strategies (Giani, 2000, pp. 55-58).

The extreme fragmentation of Italian municipalities is highlighted by the fact that the very small ones, with less than 5.000 inhabitants, represent over 70% of surveyed institutions. For this reason, 291 Unions of municipalities have been established. These Unions include 1.368 Municipalities, of which 1.045 are small, distributed in 17 regions. A total of 5.792 Italian municipalities with less than 5.000 inhabitants exist. Thus, it can be noted that the percentage of small municipalities turning to a Union of municipalities is very low (about 17%). Moreover, the phenomenon of Unions of municipalities is not uniform in the national territory. Participation varies from the Umbria and Toscana Union to the Lombardia Union.

In Italy, many authors have identified forms of association as a necessary toolo for small municipalities to avoid problems of financial management often a result of financial difficulties in the past (Tenuta, pp. 1-20). In the writer's opinion, despite financial constraints and many limiations, small institutions play a vital role, in many cases with better results than the large ones. Building on this concept, this work aims to establish, through a series of empirical studies of 291 unions of municipalities in Italy during 2009, the impact this association form has had over the past decade in managing functions and services in association. This analysis aims to verify the many advantages which, in theory, the association should have experienced in terms of cost reductions, efficiency of service and promotion of the territorial identity of the associated municipalities.

LITERATURE REVIEW

The Italian public sector is divided into several entities distributed at different levels. The need to rationalize the available resources is always linked to the necessity of achieving satisfactory performance (Borgonovi, 2000; Anselmi, 2001). Also for this reason, in recent decades, local autonomies are the subject of a major reform process (Marino, 2002). Many studies conducted by experts in various social disciplines have listed advantages and disadvantages of decentralization of administrative functions. The studies try to provide justification for the existence of multiple levels of government.

According to traditional economic theories, the establishment of local governments is essential because they ensure benefits to individuals residing in a given area only (Oates, 1972). There are various forms of aggregation provided by the laws of every country. They may be voluntary or imposed by the government. Voluntary associations seem to be inspired by the latest theoretical developments, particularly by the theory of functional federalism (Frey & Eichenberger 1996, 1999). Economic theories, can be seen in the process of redesigning Italian public institutions, which began in the nineties (Law 142/90). According to Quagliani (2006), the Union has been regulated in order to provide municipalities with a tool to improve efficiency in managing their functions.

The Union is an alternative to conventions and consortiums. Compared to conventions, it has the advantage of giving birth to a new and different entity and to assign functions to it. Compared to consortiums, it is more flexible and respectful of local autonomy (tingling & Castronovo, 2001). The local authority has become, therefore, a strategic point in a network of public and private institutions to exercise functions of public service delivery, regulation, authorization and control (Ruffini, 2000).
Bartolini and Fiorillo (2006) and Fraschini and Osculati (2006) emphasize that the Union has its own strengths in being a form of aggregation that is high versatility and, therefore, it is suitable for very different territorial and demographic areas, and for the development of several policies: environmental, territorial, economic and social. However, the Unions of municipalities involve high administration and transaction costs due to the defense of the common's identity (Fiorillo & Pola, 2006). The Union does not imply a reduction in overall spending, but rather a possible increase of services provided to citizens as a result of rationalization of the same (Ermini & Salvucci, 2006). Taking into account the fact that not only skills of municipal functions, but also wide area functions can be attributed to the Union, the problem of financing these functions is crucial.

DATA AND METHODOLOGY

The concept of Unions of Municipalities entered Italian legislation with the Law June 8, 1990, n. 142. This law intended that *in anticipation of their merger, two or more neighboring municipalities, belonging to the same province each with a population not exceeding 5,000 inhabitants,* could constitute a Union *for the exercise of a plurality of functions or services.* The law included the requirement, unless disolved, of merging within ten years after their Union. Thus, Italian Government intended to solve the problem of territorial fragmentation of local authorities with small demographic size, reinforcing them through the mechanism of fusion (Caringella et al, 2007, p. 312).

The Institute of Unions that emerged from this first provision did not have any positive results, in fact, there were few associative experiences undertaken by Municipalities. This trend radically changed direction in 1999, when a reform of laws on local self-government, Legislative Decree (D.lgs.) 18 August 2000, n.267 (Consolidation Act of laws on local authorities), changed the outlooks and aims of unions. The new law no longer resulted in a forced merger, but concretely encouraged to the creation of new and more effective forms of associations among municipalities with small demographic size (Formiconi et al, 2001, p. 2). With the Legislative Decree 18 August 2000, n.267. Union ceased being a transitional form and became a permanent institution at the second level. It bcamce an alternative to consortiums, for the joint exercise of a plurality of functions which may, but not necessarily, lead to a merger.

The new legislation modifies earlier rules in the following ways: 1) it excludes the quantity parameter. There are no more references to demographic limits of the Union participants (instead, formerly, only one could count a population between 5.000 and 10.000 inhabitants, all the others could not exceed 5.000 units) in order to promote a search for optimal suitability areas for associated management of municipal services and functions; 2) it excludes the time parameter. There is no longer a maximum duration; 3) there is no longer the constraint of belonging to the same province or region to form a union and the need for territorial contiguity between municipalities (art. 32 Tuel, specifies that, "normally", they are neighboring municipalities); 4) it deletes references to future obligations of merger, therefore the institution of a "forced" union promoted by regions, which has negatively affected the diffusion of processes of unification, in the 90s; it, however, does not preclude that Unions can individually decide on a fusion processes, based on a proposal by the concerned municipal councils (Mordenti, 2003, p.104).

The real benefits derived from aggregating in unions involve not only citizens and administrations that are a part of them, but also companies and social and cultural institutions. Changes related to Unions of municipalities include: 1) an improved quality of life and citizens having equal dignity and access to services, equality in exercising civil, economic and social rights; 2) a largest aggregation of citizens; 3) an optimization of administrative services offered; 4) a differentiation and integration of local offerings in cultural, environmental, tourism and manufacturing; 5) short term cost reduction and sustainability in the medium and long term; 6) sharing of already available resources and technological equipment.

Therefore, Unions of Municipalities give provide, social and economic benefits. However, despite the numerous advantages related to unions, uniions have not always found fertile ground in Italian municipalities, which often prefer to avoid grouping into Unions for several reasons including: 1) lack of collaborative culture; 2) resistance to change; 3) orientation toward independence over the assets managed 4) different political expressions; 5) high social, economic and territorial differentiation even among neighboring institutions and 6) differentiation to various degrees of function development and activities to be conducted in associated form, because institutions are not always willing to transfer their knowledge.

Italian local government is characterized by a large number of small municipalities, in 71% of cases with less than 5.000 inhabitants. In fact, there are 8101 municipalities with 5756 of them have populations of less than 5000 inhabitants. Table 1 provides a further breakdown of Municipality demographics.

Table 1: Breakdown of Italian Municipalities Demographics

Category	Demographic	Municipalities
I	LESS THAN 500	837
II	500 – 999	1.126
III	1.000 - 1.999	1.624
IV	2.000 - 2.999	1.011
V	3.000 - 4.999	1.158
VI	5.000 - 9.999	1.186
VII	10.000 - 19.999	662
VIII	20.000 - 59.999	397
IX	60.000 - 99.999	57
X	100.000 - 249.999	31
XI	250.000 - 499.999	6
XII	OVER 500.000	6
	National Total	8.101

Source: own elaboration – This table shows the breakdown that the legislator has made for local governments. As it is easily detectable, the Italian territory is strongly characterized by a distinct fragmentation. The small size entities (under 5.000 inhabitants) are more numerous than the medium-large size ones.

If one considers the creation of unions of municipalities in Italy in time, it is possible to notice how, after an initial propulsive momentum (from 16 unions in 1999 to 269 in 2005), in recent years there seems to be a stationary growth probably attributable to a legislative, regulatory and financial uncertainty. However, it remains an important reality. The facts indicate 1368 Italian municipalities over a total of 8101 are associated in a Union. This lead to a increase in the numbers of unions from 16 associations established before 1999 to the current 291, involving about 4.877 million people.

Table 2: Unions of Municipalities in Italy from 1999 to 2009

Year	Municipalities
1999	16
2000	67
2001	132
2002	179
2003	222
2004	244
2005	269
2006	271
2007	275
2008	286
2009	291

Source: "municipal associationism funding", www.anci.it – This table shows the evolution of the phenomenon of unions of municipalities in the last ten years. The peak of the phenomenon can be seen in the years 2000 to 2002. It is also remarkable the increase of the Unions of municipalities from 16 in 1999 to 291 in 2009.

The phenomenon varies by Italian geographical areas. In fact, most of the Unions (55%) are concentrated in the north, while the other half is almost equally divided between the center (14%), South (20%) and Islands (11%). Of 291 municipality Unionis currently in existence, 1368 municipalities, belonging to 17 regions, perform their functions. Table 3 shows the number of municipalities involved in unions by year.

Table 3: Number of Institutions Involved in Unions per Year

Year	Municipalities
2000	306
2001	596
2002	798
2003	983
2004	1.106
2005	1.225
2006	1.217
2007	1.308
2008	1.309
2009	1.368

Source: "municipal associationism funding in 2005 - Ministry of Interior", www.anci.it – This table shows the trend in the number of entities associated in Unions of municipalities in the last decade. In recent years, it can be observed a static phenomenon, which had, however, a significant increase in the years 2000 to 2005.

In Regional analysis of the phenomenon, it is evident that Lombardia, Piemonte, Veneto and Emilia Romagna include: 1) approximately 53% of Unions; 2) approximately 53% of all municipalities concerned; 3) approximately 29% of the total population. Also significant its spread in the southern, central and islands, where the record is held by Sicilia with 112 municipalities in 26 unions, followed by Puglia with 96 municipalities in 21 unions, Campania with 65 municipalities in 12 unions and Lazio with 114 municipalities in 25 unions. What these data highlight is that Unions of Municipalities are concentrated in regions with a large number of the so-called "commons dust", namely very small municipalities which are encouraged to join for technical and economic reasons.If average values are examined from the aggregate data, it is possible to estimate the average size of Italian Unions in 2009 is 4.7 municipalities, with an average population of about 16,762 inhabitants (A. Quagliani, 2006, p. 27). Additional data are provided in Table 4.

Table 4: Breakdown of Unions of Municipalities per Region

Region	Municipalities
LOMBARDIA	56
PIEMONTE	48
VENETO	29
LAZIO	25
EMILIA ROMAGNA	20
TRENTINO	2
FRIULI	6
MARCHE	13
UMBRIA	1
ABRUZZO	6
CAMPANIA	12
MOLISE	10
PUGLIA	21
CALABRIA	9
SICILIA	26
SARDEGNA	6
TOSCANA	1

Source: own elaboration of Anci data (May 2009) – This table shows the impact of the phenomenon in Italian regions. The phenomenon of Unions of municipalities is more common in the North (for example in Lombardia and Piemonte) than in the South (for example in Campania and Calabria).

EMPIRICAL RESULTS

The population of Unions is variable within the national territory, but it can be compared to the average in Toscana, Emilia Romagna, Puglia, Campania, Sicilia, Abruzzo and Umbria. There are ten regions where Unions of Municipalities have populations below the average, with particularly low values for Piemonte and Lombardia.

Data on the average population of municipalities belonging to Unions highlight that high values in Emilia Romagna, Toscana and southern regions such as Puglia, Campania, Sicilia, whereas it appears much less pronounced than in some regions of the North, such as Trentino, Piemonte and Lombardia. On the contrary, the central regions show a larger variability of population, given regions like Umbria and Abruzzo, with a high average population of both Unions and member Municipalities, and others, such as Lazio and Molise, with values lower than the national average. The analysis of Union associated services is very important because it provides information about functional aggregations and therefore, presents itself as one of the most significant indicators for the association assessment. From 2000 to 2005 the numerical growth of Unions has been accompanied by an increase in the number of services operated in associated forms. In those years, services run by Unions (social and technical services, schools, accounting and municipal police, etc.) increased exponentially from 318 to 2090.

Table 5: Regional Distribution of Unions of Municipalities and Managed Services (Year 2005)

Regions	N. of Unions	Associated Population	Associated Municipalities	N. of Services
Abruzzo	7	243.402	49	56
Calabria	9	100.844	37	22
Campania	13	544.279	63	47
Emilia Romagna	8	201.403	36	128
Lazio	24	238.907	114	160
Lombardia	59	338.271	207	703
Marche	12	148.742	52	122
Molise	9	92.075	52	39
Piemonte	44	390.518	285	334
Puglia	18	506.038	81	96
Sardegna	4	56.652	16	21
Sicilia	31	608.706	125	127
Umbria	1	36.191	8	3
Veneto	30	399.108	100	232
Total Italy	269	3.905.136	1.225	2.090
Average size of Unions	-	14.517	4.55	7.77

Source: Ministry of Interior – This table shows, for each Italian region, the number of Unions, the total population, the number of associated municipalities and of services to citizens. The regions of northern Italy (especially Lombardia and Piemonte) provide the greatest number of services to citizens. It is, instead, reduced the number of services provided from the southern regions (particularly in Calabria and Campania).

The Italian northern regions are undoubtedly the most active in terms of offered services, but the best result are obtained by Lombardia, Piemonte, Veneto, Lazio, Emilia Romagna and Sicilia with 15,98%, 11,10%, 7,66%, 6,12% and 6,08% of total services offered in association respectively. With a total of 80 (58%) the phenomenon of services associated by Unions is basically concentrated in the above six regions, whereas it is much less pronounced in regions like Puglia and Campania despite a significant population. So, in the southern regions the number of services managed in association is relatively low, and much lower than the result obtained, for example, in Lazio and Emilia Romagna which together have enabled about 14% of all associated management identified.

Finally, in terms of average number of services operated by each Union, the performance of Unions of Emilia Romagna and Lombardia is remarkable managing on average 16 and 12 services compared to the national level average of 7,77 services. Furthermore, in order to verify whether any structural features of the Unions may have affected the use of an associated management, the Table 6 indicates the correlation between the number of services activated in each region and other indicators.

Table 6: Correlation between the Number of Active Services and Some Features of Unions in 2005

Correlation between the Number of Associated Services and:	Correlation Index
Number of Unions	0.920
Number of Entities	0.779
Average size of the municipality in Union	-0.434
Average size of the Union	-0.500
Average number of institutions in Union	-0.327

Source: "own elaboration of data from Ministry of Interior" – This table shows the correlation between the number of associated services and some features of the Unions. What is immediately understandable is that, for small size institutions, associativity is probably the only way to satisfy the needs of citizens.

It is clear that a scale effect is predominant so the higher the number of Unions and associated institutions in a region, the higher the number of managed services. The resulting negative correlation between the average size of associated institutions and the number of associated management seems to confirm the thesis that, for smaller municipalities, size is an obstacle to the will of activating services in a cost-efficient manner. For these municipalities association represents an ideal instrument to overcome dimensional constraints and to increase their supply of services to appropriate conditions. Increasing the average size of municipalities in the Union, the number per capita of associated services decreases as medium-large municipalities do not have any difficulty operating services independently. So, they do not have any pressing need to activate new services in a union.

Less direct is the interpretation of the negative correlation between the average size of Union and the number of services. In this connection, if the final size of the Union is the result of the accession of medium-large municipalities, the latter do not have any problem to operate services as an independent municipality. Then, once a Union is created, the need and urgency of providing new services are less pressing. Otherwise, if the final size is the result of the union of several small municipalities, it is possible that the costs of contract to agree about the activation of services are higher than the benefits of associationism and of the resulting increased base of users. The latter interpretation could also justify the result of the highlighted negative correlation between the number of active services and of associated municipalities. Finally, another factor that may explain the increased industry and activity of Unions is their maturity: from an empirical analysis performed on a sample of 253 Unions it was found that Unions of longer duration, which have established organizations, encounter fewer difficulties to confer functions and services to their Union (Ermini, 2006). Therefore, municipalities, knowing that associations work, confer to the Union new services and functions over time. Services operated in associated form by the above-mentioned regions are specified in the Table 7.

Current regulations tend to promote and encourage the creation of new Unions, providing for the payment of financial incentives which provide added regional funding. Among the reasons why many municipalities decide to join, include financial incentives that creating a Union guarantees to them. These incentives, with regulatory changes, provided a decisive impetus to the growth and development of Unions (Spalla, 2006, pp. 119-132).

Table 7: "Associated Services"

Type of Provided Services (Year 2006)	Total Number of Services Rendered	% on Total Impact of Services Rendered
Municipal Police	75	6.76%
General Secretary, Personnel and Organization	73	6.58%
Assistance, public charity and various services to people	67	6.04%
Educational assistance, transportation, lunches and other services	58	5.23%
Waste disposal service	55	4.96%
Institutional bodies, participation and decentralization	50	4.51%
Economic and financial, planning, and management control	49	4.42%
Road conditions, traffic and related services	49	4.42%
Other general services	47	4.24%
Technical Office	42	3.79%
Parks and services for environmental protection	41	3.70%
Street lighting and related services	37	3.34%
Necropsy and cemetery service	36	3.25%
Libraries, museums and art galleries	36	3.25%
Revenues management	34	3.07%
State Property and assets management	33	2.98%
Civil protection services	33	2.98%
Theatres, cultural activities and other cultural services	28	2.52%
Integrated water service	26	2.34%
Day nurseries, childcare and to children services	22	1.98%
Urban Planning and Land Management	22	1.98%
Travel Services	21	1.89%
Various events in the sports and recreational	19	1.71%
Primary Education	15	1.35%
Nursery school	15	1.35%
Tourist Events	14	1.26%
Municipal Stadium, Sports Palace and other facilities	13	1.17%
Other	99	8.91%
TOTAL	**1.109**	**100.00%**

Source: "state funding for local associations in 2006" - Ministry of Interior – This table shows that the services operated in associated form are numerous and based primarily on security of territory and personal and social services and on administrative departments of secretariat and economic and financial management. Specifically, the services mainly operated in associated form are: Municipal Police, General Secretariat, personnel and organization, social services, schools, waste-disposal services, economic management, roads condition, etc.

A recent empirical analysis examined balance-sheet data of 278 Unions of the total 291 municipalities surveyed by ANCI (Racca, 2009). A reading of the numbers above shows a clear dominance of current expenditure over capital expenditures. Total current expenditures for the year 2007 represents 77.9% of the total expenditure incurred by Unions, representing about 334 million euro, while only 12.1%, or about 52 million, consists of investment expenditure. On average, capital expenditure for each of the 278 Unions amounted to 186 thousand euro. In some regions, the average investment per institution are insignificant: in particular in Sicilia and Calabria, where Unions invested an average of 32,330 euro and 25,330 euro respectively, and in Lazio, where Unions commit to capital spending on average 6,504 euro. Also in Unions of Emilia-Romagna, which recorded the best performance, the average investment per Union is about 715,000 euro, equivalent to the annual investment of a town of about one thousand inhabitants.Table 8 provides additional information on Expenditures of Unions of Municipalities.

Table 8: Expenditure of Unions of Municipalities

Third-Party Services	Current Expenditure	Investment	Loans Repayment	Total
33.231	333.513	51.914	9.527	428.185

Source: Racca E., Il Sole 24 Ore, August 17, 2009 – This table shows the breakdown of expenditure of the Unions of municipalities. It shows that 77.9% of the expenditure of the Unions of municipalities is used for current expenses, whereas third party services, investment and loan repayment weigh less.

Resources on current accounts come from: 1) government transfers which help with 19.821 million; 2) regions that provide 33.3 million for current transfers, and 6.3 million for delegate functions; and 3) the wider public sector that cover 177 million, mainly consisting of transfers of associated municipalities. Even if income generated from taxes on services entrusted to unions are due to them (Article 32, paragraph 5, Legislative Decree n. 267/2000) tax revenues do not exceed 10 million arising primarily from 8.7 million of Tarsu. Resources for investment are mainly given by regions with nearly 20 million. Municipalities rely on Unions for about 12 million of investment, just over 43,000 euro per institution. Table 9 shows additional revenue sources of Unions of Municipalities.

Table 9: "Revenues of Unions of Municipalities"

Transfer	Services (extra-tax revenues)	Alienation	Third-party Services	Tax	Total
243.678	85.655	38.100	33.275	9.931	410.639

Source: Racca E., Il Sole 24 Ore, August 17, 2009 – This table shows the distribution of income of the Unions of Italian Municipalities. About 60% of their income is represented by transfers. The costs of services (about 20%) and disposals (about 9%) are also remarkable. However, revenues from third-party services (about 8%) and taxes (about 2%) have little relevance in the budget of municipalities.

An examination of resources devoted to the exercise of functions and associated services, provides a descriptive framework of Union activity. An analysis of current expenditure shows that Unions focus primarily on functions and routine services in order to reduce costs and achieve high quality standards: 1) administrative functions relative to the institution (25,9%); 2) territory and environment management (20,2%); 3) local police (16,7%); 4) social policies (12,4%) and 5) public education (12,4%).

Since such a function can be voluntarily completed through other instruments (conventions, associations, etc.), there is an increasingly common practice of giving the Unions the new and stronger role of propeller of local economic development (Giani, 2003, p. 155). The Union of Municipalities, among the forms of association provided for in Italian legislation, would seem to be better able to fulfill this function to promote transformation and development of public services related to territory because it can jointly deal with all issues related to territory and determine the lines of development of an area (Marini, 2008). The Union of Municipalities can: 1) make joint analysis of peculiarities, needs and problematic aspects of more institutions; 2) facilitate agreements among the municipalities that are part of it and, especially, among them and other territorial authorities (Mountain Community, Province, Region); and 3) contribute to the planning activities of regional institutions of the higher level. It is, in other words, "the place given to territories to establish a plan for a future in which they can recognize themselves" (Fraschini et al, 2006).

CONCLUSIONS

This work aims to verify the results expereinced by Unions of municipalities in the last decade. Specifically with regard to the management of functions and services in associated form. The primary advantages of this approach are cost savings and effectiveness of service and promotion of the territorial identity of the associated municipalities.

The economic development of a territory is a result of efficient, timely and proper economic planning, in relation to the characteristics and peculiarities of the area concerned. From this comes the local authority's responsibility to have a central role in formulating strategies of that area. Italian reality, however, is characterized by the presence of a myriad of small local authorities which complicates the preparation of territorial planning instruments. Therefore, the identification of entities that are able, for their territorial and demographic size and for their homogeneity of characteristics and economic and social needs are reqiored to initiate and encourage the development of an area. This way, it is possible to make joint analysis of peculiarities as well as needs and problematic aspects of many institutions, so as to define the lines of action to be taken. This allows on one hand, a greater economy of scale and, secondly, a conjugation of efforts to achieve results otherwise difficult to reach. Unions facilitate agreements among the member municipalities and, facilitate the planning activities of Provinces and Regions. They are single institutions that aggregates the will of many municipalities, because they have already built a consensus among multiple actors.

However, most Italian Unions are limited to the management of functions and services of a "routine", nature in order to reduce costs and achieve high quality standards. Furthermore, the preponderance of current expenditure over capital expendures, highlights the willingness of municipalities to associate services to be provided with continuity. Such a characteristic could also be an indicator of the instability of this institution, greatly subject to influences of partner managers. Parner managers can change configuration, prefer to use immediate transfers, instead of thinking about investing, planning long-term strategies.

Unions enable citizens to improve delivery of municipal services (otherwise at the risk of closure or even absent), putting together the resources of individual municipalities and without removing their identities which, by contrast, are strengthened. Financial incentives, in the form of transfers from higher levels of government, seem to be decisive in promoting the formation of associations that, otherwise, could not arise. These claims are based largely on the maintenance and enhancement of the transfer based on costs and indexation of transfers allocated in relation to the structural characteristics of Unions, to the ratio between the share of resources transferred from the common to the Unions and the taxes of Commons.
Although there is no longer the obligation to merge, Union of municipalities have been increasingly recognized as a substitute. Many people still hesitate to share this idea because they propose merger as a solution that offers the greatest advantages over both the Union and specific forms of cooperation, such as the Consortium, in terms of economy of scale and variety, fiscal equivalence, institutional simplification and democracy.

Often small municipalities are considered devoid of economic rationality, to be overcome through Unions. In fact, this may be incorrect, as it must be considered that the principal purpose of a territorial public institution is political and social, to protect interests and promote the development of its community. Moreover, a small common, due to its greater flexibility and contact with people, may be, despite financial constraints, more capable than a medium-large size common to meet its community and produce high added value to citizens. Small municipalities play an irreplaceable role of "territorial protection" that must be preserved to avoid the damaging consequences of depopulation; but it is also important that small municipalities adopt new and innovative arrangement that may be instrumental in their duties. As previously indicated, for many reasons, the phenomenon of the Union of municipalities is not very common among the Italian local entities.

This work's principal limitation derives from a small number of possible observations, especially in recent years, because of the resistance of local authorities to join a union. A greater number of observations would certainly permit the use of other statistical tools with more meaningful results.
Future research on the subject may, however, might examine the course of financial stability of the single local authorities in the light of the global financial crisis and of the concrete possibility of limiting these difficulties by the aggregation in Unions of municipalities.

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DID EXIT PRICING UNDER FASB 157 CONTRIBUTE TO THE SUBPRIME MORTGAGE CRISIS?

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ABSTRACT

The current financial crisis has revived the debate surrounding fair value accounting especially in the case of illiquid markets and for assets that lack marketability. Many analysts argue that it was issuance of FASB 157 (ASC 820) and the use of fair value accounting that caused the financial crisis to spread from the subprime mortgage market to the rest of the economy. The move by FASB to present all financial assets at fair market value is appropriate as this improves the reliability, relevance and transparency of the financial statements. Presenting assets at historical cost when unrealized losses are material is not proper financial reporting and distorts the current financial position of a firm. However, the exit price requirement under FASB 157 is too strict and results in an overly conservative financial presentation. The use of exit prices to define fair value was the problem, had a negative effect on the economy, and contributed to the financial crisis as it forced firms to overstate their losses. Instead of exit prices, the IFRS definition of fair market value should be adopted. The IFRS definition does not use entry or exit price but is an arm's length exchange price between unrelated parties.

JEL: G10, G21, M41

KEYWORDS: Fair-value accounting, FASB 157, ASC 820, IFRS definition of fair value, mark-to-market, subprime mortgage crisis

INTRODUCTION

The current economic recession and financial crisis can be traced to the collapse of the subprime mortgage market caused by a sharp decline in housing prices that began in 2007 (Wingall, 2008). What surprised many market participants is how the crisis spread from the subprime mortgage market to the rest of the financial market and then the overall economy.What caused the crisis to become so serious? Should we blame individual borrowers, overleveraged financial institutions, exotic financial products or a failure in regulation? In fact, many questions about the effectiveness of the accounting and regulatory framework for banks have been raised. In particular, the role played by fair value accounting has been the source of much debate. Banks and many Wall Street professionals argue that it was the implementation of FASB 157 (ASC 820) that accentuated the financial and economic crisis. The argument is that fair value accounting resulted in large unnecessary write-downs of assets, distorted the value of assets on the balance sheet of financial firms and caused the demise of the entire investment banking industry. This is especially true for the many exotic financial instruments and securitized products created during the mortgage boom. These products were especially difficult to value under FASB 157. The write-downs caused by FASB 157 (ASC 820) created a vicious cycle of falling prices that caused the subprime mortgage crisis to spread throughout the economy.

In recent studies, Harris and Kutasovic (2011 and 2010) examined the role played by FASB 157 and concluded that fair value accounting and FASB 157 (ASC 820) played only a small role in the financial and economic crisis. In fact, the results indicate that fair value accounting is the preferred accounting framework over other approaches such as historic cost accounting. Using other accounting methodologies such as historic cost accounting during the financial crisis would have probably increased the severity of the crisis due to a lack of transparency involved in the valuation of complex mortgage securities. However, there is another important issue dealing with FASB 157 that may have contributed to the crisis.

The issue that needs to be examined is in implementation of FASB 157 and specifically the use of exit prices to define fair value. The question is whether the use of exit prices caused firms to overstate their losses and thus increased the severity of the financial crisis.

This paper examines the role played by FASB 157 (ASC 820) in the crisis focusing on the role of exit prices. The study looks at alternative definitions of fair value focusing on the definition of the International Financial Reporting Standard (IFRS). A comparison of FASB 157 with the IFRS definition of fair value is made. The study is organized as follows: section 2 provides a literature review of fair value accounting, section 3 discusses issues involving exit prices, section 4 discusses the impact on level 3 assets, and the paper ends with conclusions and suggestions for future research in section 5.

LITERATURE REVIEW

Contrary to views expressed in the media and by the critics, mark-to-market accounting is not new. For decades, financial institutions have used fair value accounting to value financial assets. In addition, financial institutions do not have to report all of their assets at fair value. For example, banks report trading and available-for-sales assets at fair value while assets held-to-maturity are reported at historic costs. Prior to FASB 157 (ASC 820), there was no single consistent measure of fair value and the guidance for applying these definitions was limited and inconsistent. What is new is that FASB 157 (ASC 820) issued new guidelines on how to measure fair value, especially in the case where there is not much of a market for the assets. Under FASB 157 (ASC 820), firms should report the fair value of their assets and liabilities using a three-level hierarchy starting with observable prices and moving to unobservable inputs and the use of models.

- Level 1 assets are traded in active markets with observable quoted prices. An example of this would be the stock of Exxon. Exxon is traded on the NYSE, its price is easily and objectively observed and thus a mark-to-market approach can be used.

- Level 2 assets are those which do not have a quoted price but whose price can be observed either directly or indirectly. This would include assets, which have similar assets traded in an active market, as well as assets traded in a market with low liquidity.

- Level 3 assets have unobservable inputs due to their illiquid nature and have traditionally been valued by companies by the use of internal sophisticated models, which require the use of many assumptions. These assets are largely the complicated mortgage-related securities developed by Wall Street firms and showed rapid growth over the last decade. Now, under FASB 157(ASC 820), these assets must be reported at a fair market value along with enhanced disclosure about the processes used to arrive at a fair value.

The accountancy board to define fair market value established a framework for measuring fair value and expanded disclosure about fair market value measurements issued FASB 157, effective for fiscal years ending after November 15, 2007. Under 157, the definition of fair market value retains the exchange price notion in earlier definitions. “This Statement clarifies that the exchange price is the price in an orderly transaction between market participants to sell the asset or transfer the liability in a market in which the reporting entity would transact for the asset or liability, that is, the principal or most advantageous market for the asset or liability. The transaction to sell the asset or transfer the liability is a hypothetical transaction at the measurement date, considered from the perspective of a market participant that holds the asset or owes the liability. Therefore, the definition focuses on the price that would be received to sell the asset or paid to transfer the liability (an exit price), not the price that would be paid to acquire the asset or received to assume the liability (entry price)” (FASB 157 Section 5:15).

As an alternative, there are other possible measures of fair value using entry value (the acquisition price that would be paid to buy an asset or received from issuing a liability) or value in use (the entity-specific value to the current holder of an asset or liability). Private equity and hedge funds, prior to FASB 157, used an entry price approach to value unquoted holding of illiquid securities and complex derivative products. FASB argues that the use of exit prices most closely corresponds to the firm's solvency. This means that if assets and liabilities on a firm's balance sheet are measured at fair value, then owner's equity equals the cash generated if the firm liquidated all the items on the balance sheet. However, the use of exit prices can be problematic in the case of illiquid markets and disorderly transactions in a dysfunctional market.

FASB 157 versus IFRS

In the international literature, International Financial Reporting Standard (IFRS) defines fair value as the amount for which an asset would be exchanged or a liability settled between knowledgeable, willing parties in an arm's length transaction. There are five differences between the FASB and IFRS definitions of fair value (PricewaterhouseCoopers, 2007, White, 2008):

First and most important, FASB 157 specifically uses exit price in its determination, whereas the IFRS does not specifically refer to either an entry or exit price but is an arm's length exchange price between unrelated parties. Second, IFRS does not provide guidance about which market should be used to measure fair value when more than one exists. FASB 157 assumes the transaction occurs in the principal market or the most advantageous market.

Third, fair value measurements under FASB 157 (ASC 820) include the concept of highest and best use, which refers to how market participants would use the asset to maximize the value of the asset. IFRS has no equivalent definition. Fourth, the fair value definition of a liability under FASB 157 (ASC 820) is based on a transfer concept. The fair value definition of a liability under IFRS uses a settlement concept.

Finally, under IFRS the fair value of a financial instrument should account for the credit quality of the instrument and the credit risk of the firm. FASB 157 (ASC 820) has no equivalent definition.

Because of these differences, fair values for assets and liabilities can differ under FASB 157 (ASC 820) and IFRS. The most important difference and the focus of this study is the role of exit prices. The question is whether the use of exit prices under FASB 157 contributed to the financial crisis that began in 2007.

ISSUES INVOLVING EXIT PRICES

The critical issue that arises is that the use of the exit pricing procedure may lead to fair value estimates that are different from other methods such as entry prices. Using exit prices as a proxy for fair market value would always result in a lower value than entry prices or any other definition of fair market value. The extent of the difference in the measurement of fair value would depend on the marketability and the liquidity of the asset in question. Marketability refers to the ability to sell an asset in an established market place. Brockman (2009) has shown that the lack of marketability discount ranges from 25%-40%.

Liquidity refers to the asset selling below the prevailing market value as measured by the rate price of an instantaneous sale versus holding the asset for a better sales price. The spread between bid and ask prices measures a cost of liquidity. A wide bid-ask spread indicates a lack of liquidity in the market. The study by Officer (2006) provides strong evidence supporting the notion that the lack of liquidity affects sales prices. As shown by Block (2007) and Officer (2006), discounts for liquidity typically can range from 15%-30% and in the extreme case discounts of up to 70% are possible. Trading volume is essential to a liquidity discount with large publicly traded firms having an insignificant discount while thinly traded firms having a much greater discount. The issue of marketability and liquidity is critically important in the pricing of bank assets. During the housing boom from 2002 to 2007, the relative importance of real estate assets in the average bank's balance sheet increased significantly. These assets consisted of mortgage loans held on the balance sheet and mortgage related securities. Thus, bank capital became very sensitive to the value of real estate and housing prices. Under FASB 157 (ASC 820), many of these assets were classified as level 3 assets. This resulted in the following issues:

First, commercial banks were large holders of mortgage-backed-securities (MBS) backed by subprime and Alt-A loans. These MBS trade in the OTC market with other financial institutions and the markets are thin and very illiquid. Pooling thousands of mortgage loans together and repackaging them repeatedly created securities that were difficult to trace to their underlying cash flow and thus made it almost impossible to find their value. Furthermore, these securities are extremely illiquid and essentially have no trading activity. The illiquidity of MBS backed by subprime loans created a problem for fair value accounting. Table 1 provides data from the Federal Reserve flow of funds on US bank holding of MBS.

In 2008, US commercial banks held over one trillion dollars of MBS and $3.7 trillion of mortgage loans. These securities include both collateralized debt obligations (CDOs) and residential mortgage backed securities (RMBS) and represented over 10% of total bank assets in 2008.

Table 1: US Commercial Bank Holdings of Mortgage Backed Securities (MBS) (Billions of Dollars)

	2000	**2005**	**2006**	**2007**	**2008**
Mortgage-backed-securities	$626.5	$992.7	$1040.3	$928.9	$1068.7
Mortgage loans	$1627.0	$2902.1	$3338.9	$3564.6	$3754.7
Total bank assets	$4998.6	$7392.5	$8189.5	$8840.8	$10247.7
MBS % of total assets	12.5%	13.4%	12.7%	10.5%	10.5%
Loans % of Total assets	32.5%	39.3%	40.8%	40.3%	36.6%

This table presents data on the level of MBS and mortgage loans held on the balance sheet of banks for selected years from 2000 to 2008. It also presents the data as a percentage of total bank assets. The data was taken from the Federal Reserve flow of funds database from June2010.

The amount of mortgage-backed-securities held by US commercial banks increased by over $440 billion from 2000 to 2008. Mortgage loans rose sharply between 2000 and 2006 and accounted for 40.8% of all assets in 2006. At its peak in 2006, mortgage related assets accounted for 53.5% of all bank assets compared to 45% in 2000.

The problem was that size of the mortgage-backed-securities held on the balance sheets of the commercial banks far exceeded their level of bank capital. Levels of bank capital from the Federal Reserve flow of funds data are provided in Table 2. In 2008, bank capital for US commercial banks was $494.4 billion and less than half of the value of MBS held by the commercial banks. Large losses on MBS caused significant write-downs of bank capital and forced banks to raise equity externally and restrict lending in order to meet global Basel capital requirements.

Second, banks also had large holdings and exposure to collateralized debt obligations (CDOs) and structured investment vehicles (SIV). Bonds that are backed by pools of bonds are CDOs. SIVs are similar to CDOs except they are financed through short-term debt (asset-backed commercial paper, rather than the long-term debt of most CDOs). The problem is that there is essentially no market for CDO or SIV assets. Thus, in valuing these assets one would expect a large marketability and liquidity discount.

Table 3 provides data on US bank holdings of CDOs and structured investment vehicles. Banks held over $379 billion in CDOs and SIVs in 2008.

Table 2: Levels of Capital at US Commercial Banks (Billions of Dollars)

	2003	2005	2006	2007	2008
Bank Capital	$209.9	$273.0	$429.3	$470.7	$494.4
Capital % of total assets	4.2%	$3.7%	5.2%	$5.3%	4.8%

This table presents data on the level of bank capital and bank capital as a percentage of total bank assets for selected years from 200 to 2008. The data was taken from the Federal Reserve flow of funds database from June2010.

Table 3: Commercial Bank Holdings of CDOs and Structured Investment Vehicles (Billions of Dollars)

	2000	2005	2006	2007	2008
CDOs and SIV	$111.0	$298.5	$306.0	$366.5	$379.3
CDOs and SIVs % of Assets	2.2%	4.0%	3.7%	4.1%	3.7%

This table presents data on the level of CDOs and SIVs held on the balance sheet of banks for selected years from 2000 to 2008. It also presents the data as a percentage of total bank assets. The data was taken from the Federal Reserve flow of funds database from June2010.

What is important to note is the rapid rate of increase in the holdings of these securities since 2000. CDO and SIV holding by US commercial banks increased by over 240% or almost $270 billion between the years 2000 and 2008. These financial securities suffered large losses during the financial crisis and were a major factor contributing to failure of a number of large US banks such as Countrywide Financial, Washington Mutual and Wachovia.

Third, the lack of liquidity exacerbated the downward move in the price of mortgage related securities held on the balance sheet of the US commercial banks. The process worked as follows: Banks were forced to sell assets to avoid violating regulatory capital requirements and to remove the perceived tainted assets from their balance sheets. The dumping of mortgage products created an excess supply in the mortgage market. This excess supply would push prices down. Lack of liquidity would further add to the downward spiral in prices.

Fourth, the exit price of Level 3 assets would be substantially lower in poor economic times as opposed to good economic periods, as demand would be much lower. Thus, fair values based on exit prices are "crushed" during a financial meltdown.

Estimated Impact

We can estimate that the effect of marketability and illiquidity on these assets in an economic meltdown can result in a discount of 40% and 65%; the product of discounts for marketability and liquidity (high ranges to low ranges of discounted values).

In addition, there would be an additional discount when one enters the added costs relating to the sale of the assets. These may include other transaction costs such as commission costs, bid-ask differentials, legal and regulatory costs, taxation costs and/or currency costs if applicable. Bid-ask differentials for thinly traded assets may amount to as much as ten percent (Block, 2007 and Officer, 2006). The result here is that an additional cost, known as the cost of exit, will increase cost by more than ten percent. This is in addition to the costs for marketability and liquidity, resulting in a total marketability, liquidity plus exit price discount of 45% to over 70%.

IMPACT ON LEVEL 3 ASSETS

For the level 3 assets, a decrease in fair value will occur under any model. However, measuring fair value using exit prices will exacerbate and overstate the decline. During a market decline as experienced in the subprime crisis, not only will asset values fall but also the spread between exit and entry prices will widen. Thus, the question is what is the appropriate method to value tier 3 assets in a depressed market environment? Below, four possible means of presentation are discussed.

The first case looks at the method use to estimate fair value prior to FASB 157. In this case, securities that were intended to be held-to-maturity were recorded at historical cost (net of amortization). No gain or loss was created by changes in fair market value. For available-for-sale and trading securities, gains and losses were taken on a yearly basis as these securities were recorded at fair market value. In the case of tier 3 assets, most of these securities were industry invented and valued at cost, derived from a present value of cash flow model and the intent was to hold these securities until maturity, as there was no liquid market for trade.

The result absent FASB 157 (ASC 820) would be that losses would be low and immaterial, as historical cost would continue to be the balance sheet value as most of these level 3 assets were classified as held to maturity securities. This is a problem since it ignores the problem assets and overstates the health of the financial institutions. This situation occurred in Japan in the 1990s. Japanese banks were permitted to keep nonperforming loans on their balance sheet and essentially ignored the problem of the bad assets. The result of this action was that the Japanese banks were effectively insolvent and were forced to restrict lending. Without bank lending, the Japanese economy suffered through a lost decade of extremely weak GDP growth.

The second case estimates fair value under the methodology of FASB 157. FASB 157, which was implemented in November 2007, imposed a requirement to value all assets at fair market value based on exit prices. As stated in this paper, exit price would reduce the fair market value of a highly illiquid asset in excess of 10 percent when compared to an entry price (Block, 2007 and Officer, 2006). Consequently, FASB 157 increased the losses to the financial institutions by significant amounts when compared to a different fair market definition.

The third case is the IFRS implication of fair value accounting. As discussed earlier in our paper, since IFRS defines fair market value less conservatively than its US counterpart does, tier 3 assets would have a 10 percent plus higher balance sheet value than under US GAAP and the losses, although material, would be significantly lower.

Finally, the last case estimates fair value based on the present value of cash flow model. Under this case, significant company assumptions would be the basis for financial statement presentation. Allowing companies to value their assets based on internally prepared models is not appropriate and would only lead to more investor concerns.

The following example illustrates the above four cases. Let us assume that a financial institution created tier 3 securities in a totally illiquid market, and based on their model the present value of the cash flows is 150 US dollars. This is the cost of the investment and the initial balance sheet amount for this asset. Further, by year-end the fair market value based on entry prices drops to 100 US Dollars. The exit price would then be 90 US Dollars as we assume a 10 percent discount. This is a held-to-maturity security.

The impact of the four cases on the balance sheet and income statement of a financial institution are presented in Table 4.

Table 4: Impact of Valuing Level 3 Assets on Financial Institutions

Fair Value Estimates Under Different Accounting Methods	Balance Sheet	Loss on Income Statement
Pre FASB 157	150	0
IFRS definition of Fair Value	100	50
US GAAP definition (FASB 157 Result)	90	60
Fair value based on company model	Varies and based on a company's model	

The table examines different methods used to estimate fair value for tier 3 assets. The impact on the balance sheet and income statement of financial institutions is presented.

The effect of using an exit price exaggerates the loss significantly, and the results suggest that FASB should consider other measures of fair value. Changes in market liquidity, marketability and especially, the bid–ask spreads should not be allowed to have a significant effect on the financial statements and the underlying value of a firm.

CONCLUSIONS

Harris and Kutasovic (2011, 2010) provide evidence to support FASB's position to present all financial securities at fair market value, regardless of its intent, as this improves reliability, relevance and transparency of the financial statements. Reliability and relevance are the underlying goals of the FASB. Presenting assets at historical cost when unrealized losses are material is not proper financial reporting and distorts the current financial position of a firm. Additionally, it would allow a firm to pick when to sell a distressed asset, which in effect would create a loss. Firms may choose to take the losses when the financials are otherwise good and keep the assets in bad financial times. As Harris and Kutasovic (2011, 2010) show, fair value accounting is the preferred accounting framework used to value financial firms. The SEC (2008), mandated by the Emergency Economic Stabilization Act of 2008, conducted a study and found that the economic meltdown and financial crisis was due to poor internal decisions by banks and not due to fair value accounting.

However, despite the advantages of fair value accounting, making the exit price the basis for fair market value is far too strict and results in an over-conservative financial presentation. Defining fair market value based on exit prices is a problem that contributed to the financial crisis, as investment and banking firms had their asset and capital ratios reduced causing liquidity constraints. Furthermore, valuing assets that the firm has no intent to sell at fair value can be justified, but there is no justification for using the lower exit price value.

Rather than using exit prices, we favor the IFRS definition of fair market value, which if implemented would still have resulted in significant losses to the investment firms. However, the losses would have been significantly lower than under exit pricing. FASB 157 (ASC 820) was in our opinion too aggressive in its requirement of fair value application and resulted in an exit price difference of about 10 percent. The blame placed on FASB by many banks and analysts would have been mitigated simply by not imposing the exit-pricing requirement.

An interesting question for further research is whether US financial firms would have suffered the same level of losses and write-offs under the IFRS definition of fair value and whether the use of the IFRS definition would have limited the spreading of the crisis from the subprime mortgage market to the rest of the financial market. The possibility that exit prices contributed to a bank contagion needs to be addressed and is an area for future research. In addition, a comparison of the banking crisis in the US versus Europe with a focus on the different definitions of fair value is a question that needs to be examined.

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ENABLING TRIPLE BOTTOM LINE COMPLIANCE VIA PRINCIPAL-AGENT INCENTIVE MECHANISMS

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ABSTRACT

A corporation that wants to fully embrace sustainability must address all three pillars of the triple bottom line. Among profit, planet, and people, it is this last category that is hardest to measure directly. When a company has remote locations and cannot directly observe effort, the compliance must be inferred from other metrics. We introduce a game-theoretic model to influence plant compliance to corporate goals.

JEL: C02, C61, M10, O21

KEYWORDS: Sustainability, Triple-Bottom-Line, Principal-Agent

INTRODUCTION

Of the triple bottom line areas (people, profit, planet), profit is the easiest to determine for all branch locations of a company. However, environmental (planet) performance is less easily monitored, but possible with pollution measurements for example. The third area, social performance (people), is a difficult one to measure and thus requires offering incentives to managers at remote location to take positive actions towards improving the social performance (or people aspect) of business.

Our model shows various incentive schemes that a Principal (Corporate) can offer to remote Branches/Plants (Agents) to have those locations invest high effort in providing good people health and wellbeing options. A branch may offer healthier choices in vending machines, provide speakers and fliers on healthy eating and exercise, offer smoking cessation assistance, and other efforts to improve overall wellbeing. Because Corporate cannot monitor the efforts each branch puts forward in providing health guidance, opportunities, and environments for its workforce, the number of sick days and health insurance claims can be used as a proxy for what effort the branch is exerting towards creating healthy and happy employees. Clearly, individual employee motivation is a confounding factor, but a baseline of claims and sick days can be compared to those data at time intervals after the supposed commencement of a new program to improve the triple bottom line. Non-trivial sized (n>30) employee workforce levels at a plant reduce the effect of outliers, e.g. a single individual that is extremely gung ho to improve, or conversely, an employee that is passive aggressive against any and all efforts to change their lifestyle.

Sustainability is a new, but important area being investigated by companies. Ho and Taylor (2007) reported on disclosures of 50 of the largest US and Japanese corporations based on the GRI (The Global Reporting Initiative) Reporting Guidelines. Firms with poor financial performance, in the manufacturing industry, were more likely to disclose social (people) performance, perhaps to offset profitability concerns. However, on average they reported only half of the people indices. There is not yet reporting standards for all aspects of the triple bottom line, other than voluntary disclosure. In addition, it is hard to quantify financial benefits to shareholders for environmental compliance and employee treatment beyond legal standards. Since compliance in all three pillars of the triple bottom line is not widely publicized, we are justified in assuming that improvement may be made in many companies worldwide. We next cover literature in this area, then introduce our model and its notation. We provide numerical examples to clarify the differences in incentive schemes, and conclude with managerial implications.

LITERATURE REVIEW

The first well-known definition of sustainable development appeared in *Our Common Future* (World Commission on Economic Development, 1987, p. 8)—sustainable development was defined as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs." Later, authors such as Elkington (1994, 1998) expanded the definition of sustainability to include the triple bottom line of economic, environmental, and social performance. Economic and environmental performance are relatively easy to measure directly (e.g., net profits, mass of landfill waste, PPM in solution, emission composition). For example, Verfaillie and Bidwell (2000) tested a framework of eco-efficiency measures with 22 companies from around the world to create a guide for companies to report their economic and environmental performance. The third measure of the triple bottom line, social performance, is more difficult to assess. Norman and MacDonald (2004) questioned whether social performance indicators (e.g., diversity, union relations, health and safety, child labor, and community relations) could be measured in objective ways and whether those measures could be aggregated into a net social profit or loss score.

Maccarrone (2009) proposed that the triple bottom line is one scheme for defining corporate social responsibility. Another scheme proposed by the European Union (cited in Maccarrone, 2009) defined corporate social responsibility as a concept for companies to integrate their social and environmental concerns. This scheme includes two categories: an internal dimension (human resources, health and safety, environmental management) and an external dimension (local communities, partners, suppliers, customer, human rights, and global environmental management). Cartwright and Craig (2006) argued that corporate social responsibility must shift to ethical stances that recognize the rights of stakeholders, encourage cooperation between corporations and their stakeholders, and ensure the accurate and timely disclosure of all material issues.

Implementation of corporate social responsibility requires hiring socially responsible managers with well-developed ideals for social responsibility to avoid dilemmas created by the errant actions of staff (Svensson & Wood, 2008). These ideals could include ethics and social responsibility, which should be manifest in a social contract between employer and employees (Karnes, 2009). Giacalone and Promislo (2010) postulated that unethical behavior could result in decreases in well-being from the stress of being victimized by, witnessing, or being associated with those involved in that behavior. Ethics forms a necessary, but not sufficient, condition for implementation of corporate social responsibility and at the same time can affect a company's social performance regarding employee well-being. A secondary challenge is how to ensure social performance at remote locations in the company. This problem can be modeled as a principal-agent problem as described in the next section.

The principal-agent is a special-case game-theoretic model in which one party (the agent) agrees to perform some actions on behalf of another party (the principal), and this agreement is normally formalized in a contract. The agent will exert some level of effort that is not directly observable by the principal and costly to the agent. The principal can observe only the outcomes of the agent. After observing the outcomes, the principal pays the agent a fee or seeks to impose a penalty (Elitzur & Wensley, 1997). One potential problem is that agents have an incentive to shirk on their effort; therefore, a contractual agreement with appropriate incentive schemes that mitigate shirking is required (Gachter & Konigstein, 2009). In the next section, we present a model of various incentive schemes that a Principal (Corporate) can offer an Agent (Branch) to induce higher effort in achieve triple bottom line results.

MODEL

The model involves a Principal (Corporate) and Agent (Branch) that both wish to maximize their respective expected profit. The probabilities of achieving good, medium, and bad results are related to the effort exerted by the Agent. We investigate different scenarios to demonstrate under what conditions the Agent prefers to exert high effort, and the best incentive scheme for the Principal to use. Table 1 shows the variables used in our model.

Table 1: Variables used in Model

p_g^H	**the probability of achieving good results if the Agent exerts high effort**
p_m^H	the probability of achieving medium results if the Agent exerts high effort
p_b^H	the probability of achieving bad results if the Agent exerts high effort
p_g^L	the probability of achieving good results if the Agent exerts low effort
p_m^L	the probability of achieving medium results if the Agent exerts low effort
p_b^L	the probability of achieving bad results if the Agent exerts low effort
b_g	benefit to Principal from good results
b_m	benefit to Principal from medium results
b_b	benefit to Principal from bad results
w_g	wage paid to Agent by Principal if good results are observed
w_m	wage paid to Agent by Principal if medium results are observed
w_b	wage paid to Agent by Principal if bad results are observed
d_H	disutility to Agent for exerting high effort
d_L	disutility to Agent for exerting low effort
$u(w_g)$	utility to Agent from wage paid by Principal for good results
$u(w_m)$	utility to Agent from wage paid by Principal for medium results
$u(w_b)$	utility to Agent from wage paid by Principal for bad results
$u(w_H)$	utility to Agent from wage paid by Principal who observes high effort
$u(w_L)$	utility to Agent from wage paid by Principal who observes low effort
f	franchise fee (if applicable) paid by Agent to Principal regardless of results
i_g	bonus incentive from Corporate to Branch for good results
i_m	bonus incentive from Corporate to Branch for medium results

subject to the following assumptions:

$p_g^H > p_g^L$, the probability of achieving a high result is strictly greater when the Agent exerts high effort

$p_b^H < p_b^L$, the probability of achieving a bad result is strictly lower when the Agent exerts high effort

$p_g^H + p_m^H + p_b^H = 1$, the probabilities of outcomes sum to 100%

$p_g^L + p_m^L + p_b^L = 1$, the probabilities of outcomes sum to 100%

$u(w_g) > u(w_m) > u(w_b)$, the Agent receives positive increase in utility for better results

$b_g > b_m > b_b$, Corporate benefits more from good Branch results than medium results, which is greater than the benefit from bad results.

The sequence of decisions is; 1) Principal determine incentive scheme, 2) Principal communicates incentive scheme to Agent, 3) Agent decided on either high or low effort, 4) Agent exerts effort, 5) Principal and Agent observe results, and 6) Principal provides Agent with wages and/or bonus based on observed results. We now will outline four incentive schemes that may be offered by Corporate (Principal) to the Agent, starting first with a scheme that would require the ability to directly observe Agent effort. We follow this with three feasible schemes for comparisons.

Infeasible Scheme: Effort Based Wage

To establish a baseline solution, we will first examine the wages required to induce the desired behavior in the Agent (Branch) if their effort could be directly observed.

$$u(w_H) - d_H \geq u(w_L) - d_L \tag{1}$$

If effort was directly observable, the Principal could perfectly predict Agent behavior and induce accordingly using (1). However, in the scenario addressed in this paper, effort cannot be directly observed, but rather must be inferred from the observable results that are stochastically distributed for each Agent effort level. Equation (1) is intuitive in that only the difference in disutility to the Agent by exerting more effort needs to be overcome with extra utility provided by wage given for high effort contrasted with that offered for low effort.

A Pure Wage Scheme: Principal Incurs All Risk

Often companies reward employees at a preset compensation level. This pure wage is independent of the results demonstrated by the employees or branch. Hence: $w_g = w_m = w_b = w$ is the wage paid by Corporate to the Branch. The Agent's utility is therefore constant at *u(w)*. The disutility for the Agent differs based upon his effort level. The expected total utility to the Agent is:

For high effort: $u(w) - d_H$ (2)

For low effort: $u(w) - d_L$ (3)

From our assumption that higher effort produces more disutility to the Agent, $d_H > d_L$, the Agent will always choose to exert low effort, achieving the payoff in (3).

If $p_g^L b_g + p_m^L b_m + p_b^L b_b - w < p_g^H b_g + p_m^H b_m + p_b^H b_b - w$, then Corporate (Principal) would not logically chose this pure wage scheme.

This result makes intuitive sense, if an employee will not get any additional benefit for exerting high effort, they will not make the extra effort. In simpler terms, if your branch management is paid strictly via salary, they are unlikely to exert high effort. They can achieve the same wage utility from low or high effort, but clearly obtain more disutility from having to work harder. This does not preclude the rare possibility of a branch or individual workers who may be self motivated through pride or for other reasons to always exert high effort. However, the long term compliance of wishing your locations and employees will exert extra effort out of pride is tenuous at best.

A Pure Franchise Scheme: Agent Incurs All Risk

If each branch is a profit center, rather than a cost center, a franchise fee f might be required of the branch (Agent) to be paid to Corporate (Principal). The Branch receives the g, m or b rather than Corporate.
The utility for the Agent is necessarily lowered by the franchise fee f regardless of effort or results achieved. The Agent will exert high effort if the inequality in (4) holds.

$$[p_g^H - p_g^L]u(w_g - f) + [p_m^H - p_m^L]u(w_m - f) + [p_b^H - p_b^L]u(w_b - f) > d_H - d_L \tag{4}$$

The branch incurs the franchise fee f regardless of outcome, and with high or low effort probabilistically has their efforts result in a good, medium, or bad result. The difference in high versus low probability of achieving each of the three results multiplied by the utility received per outcome must exceed the Agent's effort disutility difference in order to induce the branch to exert high effort. One often thinks of a common franchise such as McDonald's, where each store pays a fee to corporate regardless of how well they do. Therefore, it is incumbent on the individual location to achieve good results to more than cover the fixed fee arrangement. In bad economic times, or other reasons not inherently related to the effort at the location, the store (Agent) loses, and corporate does not share in this risk.

Shared Risk Scheme: Wage Plus Bonus

Sharing the risk of the uncertainty of results between Corporate and the Branch is an intuitively equitable solution. The Agent is given a base wage, w_B, regardless of output plus a bonus if either medium or high results are observed. Table 2 shows that incremental bonus incentives may be used to induce effort such that the branch is rewarded for non-bad results. From our assumptions, Corporate benefits from better Branch results as well. In this way, the risks and rewards are shared by both Corporate (Principal) and Branch (Agent).

Table 2: Bonus and Benefit per Result

Results Observed	Bonus Paid to Branch	Gross Benefit to Corporate
Good	i_g	b_g
Medium	i_m	b_m
Bad	0	b_b

The Branch (Agent) incurs risk because the bonus may be zero, but is potentially non-zero. Corporate (Principal) incurs risk due to the different benefits, given that $b_g > b_m > b_b$.
The Branch's expected profit from exerting high effort is

$$p_g^H u(w_g + i_g) + p_m^H u(w_m + i_m) + p_b^H u(w_b) - d_H \tag{5}$$

The Branch's expected profit from exerting low effort is

$$p_g^L u(w_g + i_g) + p_m^L u(w_m + i_m) + p_b^L u(w_b) - d_L \tag{6}$$

If the following inequality holds, the Branch will exert high effort in order to maximize its expected utility.

$$[p_g^H - p_g^L]u(w_g + i_g) + [p_m^H - p_m^L]u(w_m + i_m) + [p_b^H - p_b^L]u(w_b) \geq d_H - d_L \tag{7}$$

Corporate can select i_g and i_m in order to make (7) hold, thus providing incentive to the Branch to exert high effort. Clearly, for the Principal, the incremental bonuses i_g and i_m must be less than the expected increase in benefits to Corporate from b_g and b_m. Having a single incentive for either good or medium results, if it is sufficiently large, will induce high effort from the Branch.

If the Branch exerts high effort, Corporate can expect profits of

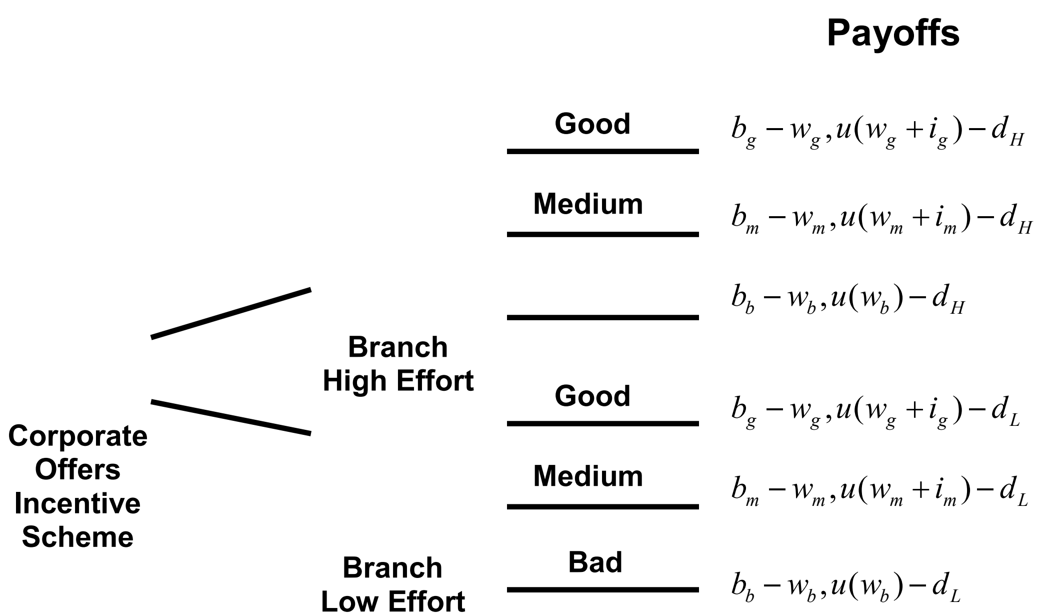
$$p_g^H (b_g - w_g - i_g) + p_m^H (b_m - w_m - i_m) + p_b^H (b_b - w_b) \tag{8}$$

If the Branch exerts high effort, Corporate can expect profits of

$$p_g^L (b_g - w_g - i_g) + p_m^L (b_m - w_m - i_m) + p_b^L (b_b - w_b) \tag{9}$$

Figure 1 shows the sequence of decisions taken by both Corporate and the Branch. Given each branch of this decision tree, the payoffs to Corporate and Branch can be viewed on the right hand side of the figure. Again, the effort by the Branch (middle decision in the figure) is not directly observable by Corporate.

Figure 1: Sequence of Decisions and Payoffs to Both Corporate and Branch After Good, Medium and Bad Results according to Branch High and Low effort.



We will demonstrate the three incentive mechanisms for non-directly observable effort in the next section via numerical examples.

NUMERICAL EXAMPLES

We now demonstrate the three feasible incentive schemes via numerical examples. Table 3 below shows the values for our variables.

Table 3: Variable Values for the Numerical Examples

p_g^H	60%	the probability of achieving good results if the Agent exerts high effort
p_m^H	30%	the probability of achieving medium results if the Agent exerts high effort
p_b^H	10%	the probability of achieving bad results if the Agent exerts high effort
p_g^L	15%	the probability of achieving good results if the Agent exerts low effort
p_m^L	35%	the probability of achieving medium results if the Agent exerts low effort
p_b^L	50%	the probability of achieving bad results if the Agent exerts low effort
b_g	2000	benefit to Principal from good results
b_m	1200	benefit to Principal from medium results
b_b	1000	benefit to Principal from bad results
w_g	2000	wage paid to Agent by Principal if good results are observed
w_m	800	wage paid to Agent by Principal if medium results are observed
w_b	500	wage paid to Agent by Principal if bad results are observed
w	600	wage paid to Agent without regard to results
d_H	500	disutility to Agent for exerting high effort
d_L	100	disutility to Agent for exerting low effort
$u(w_g)$	1000	utility to Agent from wage paid by Principal for good results
$u(w_m)$	800	utility to Agent from wage paid by Principal for medium results
$u(w_b)$	500	utility to Agent from wage paid by Principal for bad results
f	400	franchise fee (if applicable) paid by Agent to Principal regardless of results

A Pure Wage Scheme: Principal Incurs All Risk

The wage, w, is the same (600), therefore the utility is the same, and the difference in payoffs for the Agent comes from the difference in the disutility of effort.

$$u(w) - d_H = 600 - 500 = 100$$
$$u(w) - d_L = 600 - 100 = 500$$

Clearly, the Agent achieves a higher payoff by having low disutility (d_L) and thus will not exert high effort towards the Corporate sustainability goals. The Corporate inequality $p_g^L b_g + p_m^L b_m + p_b^L b_b - w < p_g^H b_g + p_m^H b_m + p_b^H b_b - w$ (570 < 1050) holds, indicating that this scheme should not be chosen by Corporate because the Agent will exert low effort and the benefit to Corporate will thus be reduced.

A Pure Franchise Scheme: Agent Incurs All Risk

Regardless of outcome, the Branch must pay the fixed franchise fee (*f = 400*) to Corporate.
Equation (4), $[p_g^H - p_g^L]u(w_g - f) + [p_m^H - p_m^L]u(w_m - f) + [p_b^H - p_b^L]u(w_b - f) > d_H - d_L$, becomes 210 > 400, which does not hold. Since the left hand side does not exceed the effort utility difference on the right hand side, the Branch will chose to exert low effort.

Shared Risk Scheme: Wage Plus Bonus

For the Branch's expected profit for high effort from equation (5) we get 690. For the Branch's expected profit for low effort from equation (6) we get 710. Therefore, with this incentive scheme, the Branch would choose low effort. However, Corporate would see a benefit of 460 from (8) versus 360 from (9) so would expect to benefit more if the Branch exerted high effort. Therefore, Corporate needs to change the incremental bonus such that the Branch also is motivated to high effort.

At approximately, 445.45 for the incremental incentive for good outcomes (i_g), the Branch would be neutral between high and low effort. For values above 445.45, the Branch will rationally choose to exert high effort in order to maximize its expected payoff. Assume that the incentive for good results at the branch was increased from 400 to 450, then the Branch would exert high effort because equation (5) yields an expected profit of 720, and (6) gives 717.50. Similarly, Corporate sees its benefit rise from 353.50 if the Branch had exerted low effort, to 430 from equation (8) given that the Branch will exert high effort.

MANGERIAL IMPLICATIONS AND CONCLUSIONS

Sustainability is of growing concernt to customers and therefore, companies. Businesses may implement sustainability through the triple bottom line (people, profit, and planet). Profit is repoted by remote locations of a company, and compliance to environmental and pollution may be ascertained through monitoring. However, ensuring employees are in non-bullying environments, with opportunities for healthy food, breaks, and/or exercise time is more difficult to assess at a distance.

We have shown that the problem of encouraging remote branches to engage in desired behavior can be modeled as a Principal-Agent, game theoretic model. In order for Corporate to achieve the desired results when the actions cannot be directly observed, the risks and rewards need to be shared with the branches. We have shown via the Princpal-Agent model that this sharing of risk produces the best possible outcome for scenarios where effort cannot be observed directly.

The people aspect of the triple bottom line is difficult to measure directly, so often has to be inffered by outcomes. Compliance from all locations is esential to meet company wide triple bottom line goals. The incentive for all locations, acting as agents to the corporate principal, can be driven by the shared risk bonus schedule that was shown in Table 1. The entire enterprise can benefit from compliance induced by the shared incentive system outlined in this paper.

A limitation of this approach, and this paper, is that we must assume that there are observable outcomes that serve as a proxy for effort. There does not need to be a direct correlation, but rather probabilities should decrease for these measures as effort increases. Possible observable outcomes are calls to a stress hotline, sick days taken, employee turnover, medical claims, etc.

Future research with emprical results demonstrating exactly which measures (e.g. sick days) are best predictors, for different industries and geographies, would allow application of our model to real business scenarios where the results could be tabulated.

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LESSONS FOR LATIN AMERICA FROM THE ASIAN TEXTILE INDUSTRY EXPERIENCE

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ABSTRACT

This paper examines recent statistics in US textile and clothing trade with selected Latin American and Asian economies, comparing data on textile exports from the top 10 suppliers between 1995 and 2003. It evaluates the initial effects of the Agreement on Textiles and Clothing (ATC) of 1995, which provided for a 10-year quota phase-out process for WTO member countries. Since its accession into WTO, China has replaced Mexico as the top supplier of goods to the US. In addition, a brief comparison with other international experience of emerging economies is provided in order to elucidate the relevance of the textile industry in the region and world economy. This empirical work can be the starting point for policy-makers to design long-term policies that are needed for Latin America to compete successfully in the US market and promote the restructuring of clothing and textile production at the country level.

JEL: F13, F14

KEY WORDS: Textile Industry, Asian Economies, Latin America, International Trade

INTRODUCTION

With the formation of WTO in 1995, trade analysts around the world expected that the removal of import restrictions would foster an increased growth in clothing and textile trade, as well as a reorganization of production at the country level. In particular some experts anticipated a dramatic shift of production to China to the detriment of exports from other developing nations (Martin 2007:1), such as Mexico, South Korea and Turkey. In the influential *The Travels of a T-shirt in the Global Economy*, Pietra Rivoli (2005), an economics professor at George Town University, discussed how the lifting of trade tariffs would lead to Chinese dominance in international trade and a backlash against it in the Western world, particularly the US.

While Latin America's comparative advantage lies mostly in garment production made by cheaper labor, the US's lies in textile manufacture and brand retailing (Dicken, 2003: 351). Within this context, the emergence of East Asia, particularly China, as a key textile and clothing exporter highlights some of the factors that help explain the growth experience of Asia, especially since the elimination of the quota system in 2005. This has certainly become a constraint on US's ability to adjust effectively to the rising competition in the global and regional environments. As global production, revenues and exports are elevated, there are increased pressures to reduce costs and eliminate jobs. These issues are especially alarming in developing countries such as Mexico and have been more pronounced because of greater competition from China and other Asian economies.

This paper discusses the impact of the phase out of quotas on clothing imports/exports, examining data on exports from the top 10 suppliers to the US market between 1995-2003. In particular, it examines the US-China experience and provides recommendations for Latin America. Did the gradual lifting of import restrictions foster an increased growth in Chinese exports to the US market at the expense of Latin American exports? This paper argues that Latin America will retain a sufficient critical edge in textile business with the US and that the impact of a "surge" in Chinese exports has been exaggerated. While the rising competition from China is evident in salient trends in US trade balance with Asia, the net effect of this competition on US imports from Latin America is unclear and subject to market dynamics and particular trade strategies of respective governments in the region and globally. These factors have the potential to mitigate some of the negative impacts of Chinese competition on Mexican exports. After examining internal and external macroeconomic factors that have shaped textile trading since 1995, the paper recommends policies necessary to maintain Latin America's access to the US market and adjust to the rising competition from China.

LITERATURE REVIEW

In the 1970's, several analysts examined textile production in developing countries within the context of import-substitution industrialization as the primary development strategy (Perez-Stable, 2006; Wilson 1992; Safa, 1981; Bonancich and David, 1994). The ISI "involved the local production of previously imported manufactured goods" which was mainly characterized by an active role of the state in promoting industrialization (Chandra, 1992:95). Following the rapid liberalization of international trade and the increasing number of overseas suppliers in the early 1980's, the majority of the trade research has been oriented towards a successor development strategy known as export-led industrialization. Unlike import substitution geared towards the protection of domestic industries through trade barriers, export-led industrialization aimed to promote industrialization of a country through export of manufactured goods destined for sale in overseas rather than domestic markets. Its strategy included lifting of tariff barriers along with opening domestic markets to foreign investment and competition in exchange for access to other markets. Export-led industrialization fostered the development of Asian economies, including those regarded as successful models such as Hong Kong, South Korea, Taiwan and Singapore, and most recently China.

Wilson (1992) suggested that global factors, such as the needs of US multi-national corporations to expand production and reduce labor costs, triggered the emergence of export-led industrialization. This was a period when the US "was keen to protect and foster successful examples of capitalism in a region thought to be turning communist" (Smith, 1992:149). In the presence of greater international competition during the early 1970's, multi-national firms were moving production offshore in order to set up "export-processing zones" for their foreign assembly operations. Out of 79 export zones in 35 countries, Asian countries accounted for 55% of the world's employment whereas Mexico, Caribbean and the Central America accounted for 30%--with Mexico employing over half-of that amount and South America, Brazil, Colombia, and Chile about 8%. In addition to electronics, textiles, apparel and footwear have been the main sources of export manufacturing in these zones (Wilson, 1992:9).

Global and economic factors figure prominently in comparative advantage theory, especially cheap labor and trade liberalization—the driving forces of export-led growth. The support for this view is largely prevalent among mainstream economists who conceptualize East Asian economies developing on the basis of free market, free-trade policies—the kind of policies that exist in the West, particularly the US. Adopting this interpretation, one IMF (2001) study has recently noted that "trade opening (along with opening to foreign direct investment) has been an important element in the economic success of East Asia, where the average import tariff has fallen from 30 percent to 10 percent over the past 20 years". Other experts, however, suggested that any convincing account of development should take into account local, social and political factors within a nation-state, especially those that involve the contribution of industrial policy to economic growth. In Asia, this is witnessed by the direct involvement of state in fostering exports, which ranged from the "creation of export processing zones to the manipulation of state finances through the banking system, to shaping the capital cities by influencing the planning process" (Smith, 1992:149).

The neo-classical growth theory, which emphasizes the contribution of efficient technology and low cost production, does not hold up well against the evidence of Asian exporters who increased market share in the face of wages higher than China's or Mexico's. As Gereffi suggested, East Asian NICs were able to mobilize and attract capital investment even in the presence of uncertain economic circumstances, such as oil price increases, labor shortages, currency crises and even protectionist barriers in their major export markets (Gereffi, 1999:38).

Furthermore, a competitive market is a function of changes in the supply-demand chain at the firm level. From an organizational point of view, vertically integrated firms are becoming the world's leading suppliers. For example, major retailers in the US are working with two types of suppliers in Asia. The first are "mega companies with management headquarters in Asia and production networks around the world…. The other types are highly skilled, flexible companies located near buyers, which could also benefit from preferential market access" (Knappe, 2005). Furthermore, the global market is dominated by large firms in the major importing countries such as high-volume discount chains that develop their own brands and outsource clothing from subcontractors in the developing world. This was made possible by a transition of Asian manufacturers from mere assembly operations (like cutting fabrics) to more complex operations, such as lean retailing, that involved working with large retailers and utilizing information technology to speed up the delivery process (Hayashi, 2005:8). On the supplier side, such flexibility allowed Asian retailers to monitor every step of the product value chain, from raw material sourcing to manufacturing, design and even delivery of finished garments to the shop floor.

The Asian model has failed to produce the results that experts predicted, such as higher living standards, lower production costs and higher productivity. In an article disputing the "statistical realities" of the Asian model, Young (1995) estimated that "total factor productivity growth rates" in Asia were somewhat closer to the experience of OECD and Latin American economies. Except for the growth of output and manufacturing exports, however, total productivity growth was not exceptional by historical standards (Young, 1995:641). Other criticisms include the structural weakness of the model and its extreme dependence on foreign capital as a source of economic growth. Such exposure to exogenous factors make economies specialized in comparative advantage potentially unstable if demand for their products falls. As we saw in the recent Asian financial crisis, this was especially true of ASEAN, such as Indonesia and Malaysia, which experienced a sharp decline in import demand for capital and intermediate goods from Japan and Asian NICs. The net impact of financial crises in return affected other countries like China that experienced a sharp decline in private capital inflows and sluggish growth.

When measured by the amount of manufactured exports, the growth of Asian economies is undeniable. Those skeptical of this growth, however, pointed to the negative impact of Asian competition on exports from developing nations and the new challenges for US-Asian trade in the conclusion of the Uruguay Round that established the WTO in 1995. Some experts predicted strengthened multilateral trading at the expense of intensified trade competition since the elimination of quotas on January 1, 2005 (Barfield, 1997).

With global competition getting much sharper every day, there is a downward pressure on prices in the US; the overall impact of this competition is reflected in the decline in factories and manufacturing jobs brought on by outsourcing into lower-wage and lower-skilled countries, which are nonetheless moving to higher-valued production like Asia. US firms are exporting intermediate goods like fabric products that overseas suppliers are turning into final goods for re-exporting. Outsourcing has had major implications for small, vulnerable economies, with their low-value products and fragmented industries forced to compete at the same level with highly skilled Asian producers in the global environment.

THE WTO AGREEMENT ON TEXTILES AND CLOTHING (ATC)

From 1974 until the end of Uruguay Round in 1995, the Multi-Fiber Arrangement (MFA) governed the international regulation of textile goods. The MFA established a worldwide quota system, selective import restraints and bilateral agreements that permitted the use of imports quotas for countries facing damage from surging imports from developing countries. Under the system, a large portion of exports to the US and Europe were subject to a system of quotas that restricted importing of man-made and other non-cotton fibers, including all made-up textile products (synthetic fibers, wool) and clothing (Dicken, 2003:337-338, WTO, 2010).

In January 1995, the Agreement on Textiles and Clothing (ATC) replaced the MFA, establishing the WTO and a plan to eliminate quotas in three stages over a ten-year period by January 1, 2005 (Table 1). This ten year transitional program—also known as the WTO Agreement in Textiles and Clothing (ATC) 1995-2004—aimed to integrate the textile and garment sectors fully into GATT rules by phasing out the MFA over a ten-year period. A slow transition period would provide sufficient time for textile manufacturers to get ready for more competition in the post-ATC era. This included the three stages of the liberalization process for the integration of the textile and clothing products into the GATT rules by the beginning of 2005 (WTO, 2010). At the beginning of the years 1995, 1998, 2002 and 2005, it was required that parties to the ATC eliminate quotas for a certain percentage of trade in textiles and clothing. The ATC also "required that products from different categories—textiles, clothing, wool, cotton or man-made fibers, etc—to be included in each of the four stages of the quota phase-out, in part to make it more difficult to protect a particular segment of the clothing and textile industry during the transition" (Martin, 2007:3).

Table 1: Quota Elimination Stages of the ATC

Steps	Percentage of products to be brought under the GATT	Percentage of products to be brought under the GATT
Step 1: 01/1995 to 12/1997	16% (minimum)	6.96% per year
Step 2:01/1998 to 12/2001	17%	8.7%
Step 3: 01/2002 to 12/2004	18%	11.05%
Step 4: 1 Jan. 2005	49% (maximum)	Full integration into GATT

Source: WTO, 2010, Understanding the WTO: The Agreements, Textiles: Back in the Mainstream, Available at http://www.wto.org/english/thewto_e/whatis_e/tif_e/agrm5_e.htm

While the ATC was a step in the right direction, it did not bring about "free trade" for textiles and clothing as some experts predicted. The use of safeguard measures made the ATC an instrument of managed liberalization rather than a free market. In this regard, three factors reduced the full impact of trade liberalization after the termination of all ATC quotas On January 1, 2005. First, the ATC was limited to the "removal of quotas," meaning that countries could still impose tariffs on clothing and textiles in order to protect domestic manufacturers from foreign competition. For example, the US uses "peak tariffs rates" on imports in special circumstances whose range change from product to product—from a lowest 3.9% to highest 32%.

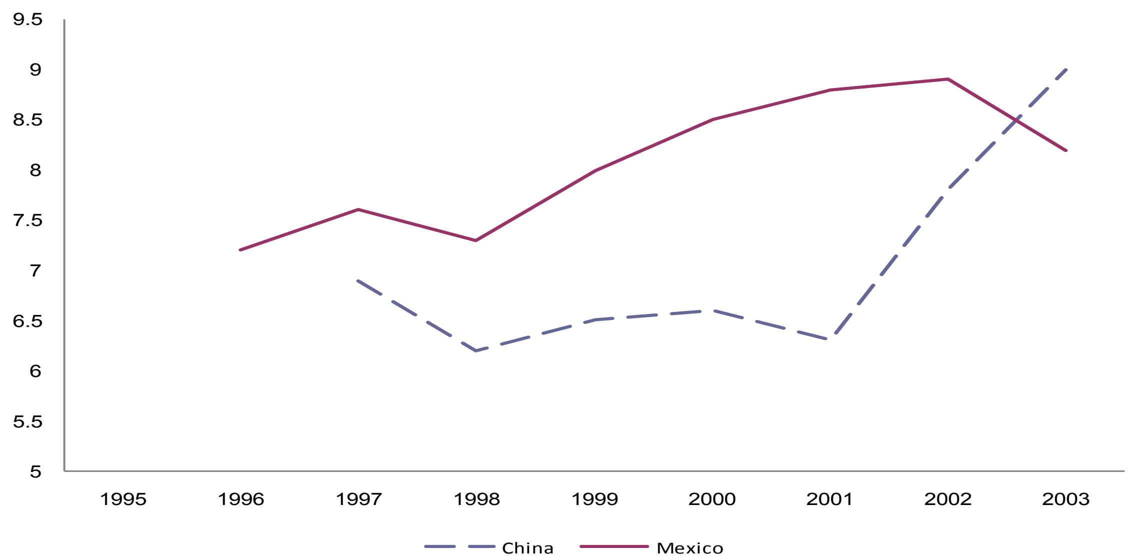
Second, the ATC was also limited because it did not prevent countries from using safeguard measures to restrain the import of certain products such as anti-dumping and counter-veiling duty cases. Third, there are particular requirements that member countries agreed to after China's accession to WTO in December 2001. Any WTO member can invoke a special safeguard mechanism if Chinese textile and clothing goods are causing "market disruption" to the importing country. If there is no agreement with China, the WTO member has the right to enforce the quota unilaterally. Available only until December 31, 2008, the safeguard mechanism for textile goods was invoked by a number of WTO members such as Brazil, Colombia, the European Union and the US (Martin, 2007:5).

METHODOLOGY AND DATA

The Analysis of Variance (or ANOVA) is a powerful and well-known statistical procedure in the social sciences. It can test a variety of situations. In statistics, ANOVA is a combination of statistical models, and their related procedures, in which the observed variance is divided into components due to different sources of variation. By generalizing two-sample t-test to more than two groups, ANOVA can test whether or not the means of several groups are all equal. ANOVAs have certain advantages over a two-sample t-test. If multiple two-sample t-tests are conducted, for example, there is a higher possibility of committing a type I error. Hence, ANOVAs are effective in comparing three or more means.

The comparison between the actual variation of the group averages and the expected are expressed in terms of the F ratio: the F-test (F= Variance between countries/variance within countries). This is used for comparisons of the components of the total deviation. As in most other analyses, time series analysis presumes that the data display a "systematic pattern" ("usually a set of identifiable components") and "random noise" ("error"), which usually makes a pattern difficult to identify. Time series techniques are useful in involving some form of "filtering out noise" in order to make the pattern more relevant (Hill and Lewicki, 2006)

Figure 1: Mexico-China Share of the US Textile Market (%)



This figure discusses trends in Mexico-China competition as measured by the supply of textile goods to the US market in 1995-2003. This information, consistent with the data in other Figures, captures the impact of China's accession to WTO on Mexico and Asian competition in the US market. Early during this decade, Mexico has lost grounds in the textile market and it seems that this trend will continue over time.

The difference between textile and clothing is crucial to understanding countries' production advantages and availability of resources in different commodity groups. Textile is distinguished by any material made of interlocking natural or artificial fibers that are similar to lengths of thread or yarn. On the other hand, clothing refers to a finished piece of fabric that can be used for wearing, covering a body or certain parts of things. In this comparison, Mexico and China are given special consideration as the two largest suppliers of goods to the U.S, even as China replaces Mexico as the chief source of US imports since 2003 (Godoy, 2010) (refer to Figure 1). The details of merchandise trade by product and trade in commodity groups identify the most relevant trends in the data and illustrate them with Figures 2 through 4.

This paper utilizes time series analysis and other statistical tools in order to identify most salient trends in US merchandise trade within the textile and clothing sectors. Overall, Figure 2, Figure 3 and Figure 4 detail important trends in US bilateral and multilateral trade and highlight leading changes in industry/commodity groups for each of the 10 larger trading partners in 1995-2003. This period focuses on the data through three stages of the quota elimination process (Table 1). The shifts in trade flows (exports, imports) reflect internal and external macroeconomic conditions that influenced US merchandise trade performance with Asia and Latin America during this period. Some of the trading partners, such as Mexico, the Dominican Republic and Brazil are members of the free trade agreements that enjoy preferential market access to the US market (NAFTA, CAFTA-DR) or to other markets of Latin America (MERCOSUR). Regional trade agreements indicate emerging centers of production within the region (as a direct competition to Mexico and other low cost producing countries).

EMPIRICAL ANALYSIS: FACTORS AFFECTING TRENDS IN US TEXTILE TRADE WITH LATIN AMERICA AND ASIA

The increase in the volume of textile and clothing trade has intensified competition between Asia and Latin America, especially between Mexico and China as two largest garment suppliers to the US market. Consistent with the trend in trade balance from 1995 to 2002, US imports from China increased while those from Mexico gradually declined in the top 25 import items. While US imports from Mexico ($130.8 billion) still exceeded US imports from China ($109.2 billion) in 2001, Mexico's share declined by 3.2% and China is increased by 1.9%. In 2002, US imports from China increased at a faster rate than imports from Mexico (GAO, 2003:63). Although both countries experienced economic growth during this period, the Asian competition increasingly altered maquila trade—the largest component of the US-Mexico trading relationship and the driving engine of the economies of both US and Mexican border states, such as Baja California, Juarez, Tijuana, El Paso, etc. This competition is increasingly evident in US trade balance with China and Mexico. Whereas Mexico had a positive trade balance of only $4.8 billion with the US in February 2010, China maintained a trade surplus of $16.5 billion (Godoy, 2010).

One GAO (2003) study on the maquila crisis noted that Mexico is losing market share in the US not only because of China's cost advantages, but also due to declining maquiladora employment, factory closings in Mexico and impending financial crisis in the US since 1998. Between 1995 and 2002, the share of US imports from Mexico declined for 47 of the 152 categories of items. Whereas China appeared to have gained market shares in the US in all categories of imports, Mexico lost ground in major import items, especially garments of textile fabrics. For these 47 categories in 2002, the total value of imports from Mexico was $25.5 billion compared to the value of imports from China that was $23.4 billion, reflecting China's production cost advantages. Although it is difficult to estimate growth from this disparity, Mexico has lost ground to China in major export items such as toys, furniture, electrical household appliances, television and video equipment and parts and apparel and textiles (GAO, 2003:63-64).

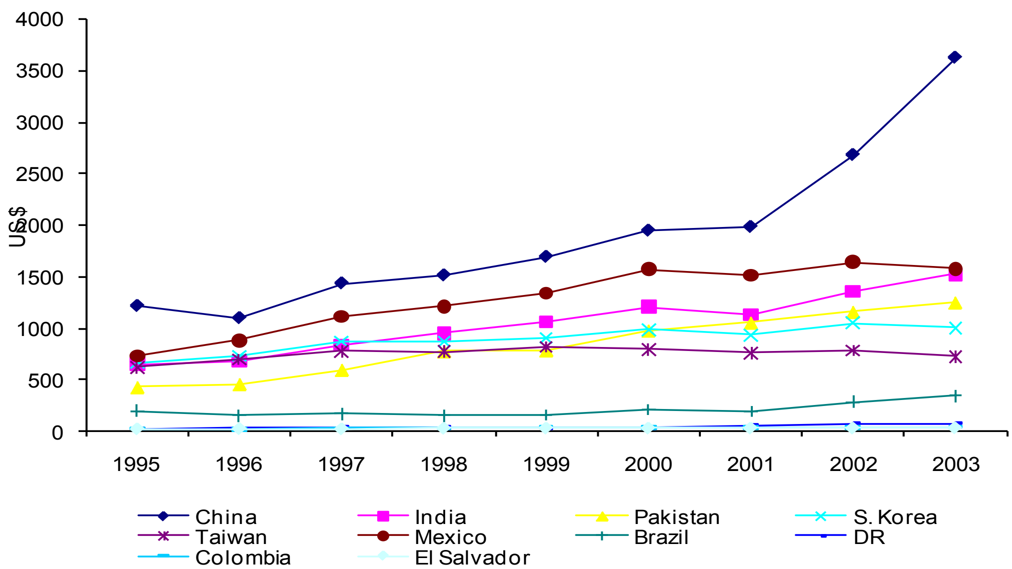
The increasing competition in the US market for imports came at a time when labor productivity levels in Mexico were declining in comparison to newly industrializing economies of Asia. This has been function of emerging centers of production globally as well as regionally, such as Central America and the Caribbean. Secondly, a particular effect on Mexican competitiveness was the rising value of peso in 1995, which made the Mexican exports products by maquila more expensive in world markets. Third, the restrictive provisions of NAFTA with respect to Mexico's trade with non-NAFTA members created particular disadvantages for Mexican producers. Under NAFTA, the US required Mexico to restrict the duty-free importation of inputs from non-NAFTA countries, therefore a creating a problem for maquila operations dependent on raw materials from non-NAFTA sources, so the "tightening of imports from these non-NAFTA produced supplies came precisely at the time that the current crisis started" (Pacheco, 2003).

Most importantly, Latin American exports are directly affected by a US policy of promoting non-NAFTA countries' access to the US market. The US actively promoted liberalization in textile assembly trade on several occasions, including the Doha Round among the 146 members of the WTO, the Free Trade Agreement of the Americas (FTAA) involving 34 nations of the Western Hemisphere, the US-Dominican Republic Central America Free Trade Agreement (CAFTA) involving the US, Costa Rica, Dominican

Republic, El Salvador, Guatemala, Honduras and Nicaragua. By reducing barriers to non-NAFTA countries' goods to levels similar to those enjoyed by NAFTA participants, CAFTA largely benefited the US textile manufacturers and exporters of yarns and fabrics. For example, in the FTAA, the US agreed to eliminate textile and apparel tariffs within 5 years after the implementation of the agreement. Like FTAA, CAFTA provides duty free entry of US textile and appeal inputs entering the DR-CAFTA market. In return, apparel assembled in the CAFTA region enters the US duty-free. This provision protects US textile manufactures by allowing the free importation of US made yarns and fabrics in the apparel into the US market (GAO, 2003:42; OTEXA, 2010).

Concerns remain that while benefiting consumers, textile manufacturers and exporters of intermediate goods in the US, an expansion of trade benefits to a numbers of competitors erodes the benefits of prior trade agreements, such as those provided to Mexican suppliers in the US market under NAFTA. In their analyses of "cluster-oriented policies" in Latin America, Altenburg and Meyer-Stamer (1999) demonstrate how "micro-enterprises" and "mass producers", so essential for creating jobs, lack the dynamism and expertise necessary to compete with global suppliers in the transition to open trade. Although agreements like FTAA and CAFTA have the potential to improve regional competitiveness relative to China by integrating domestic firms to the supply-chain of global economy, their benefits are subject to ever changing dynamics in US trade performance.

Figure2: 10 Larger Exports to The U.S.



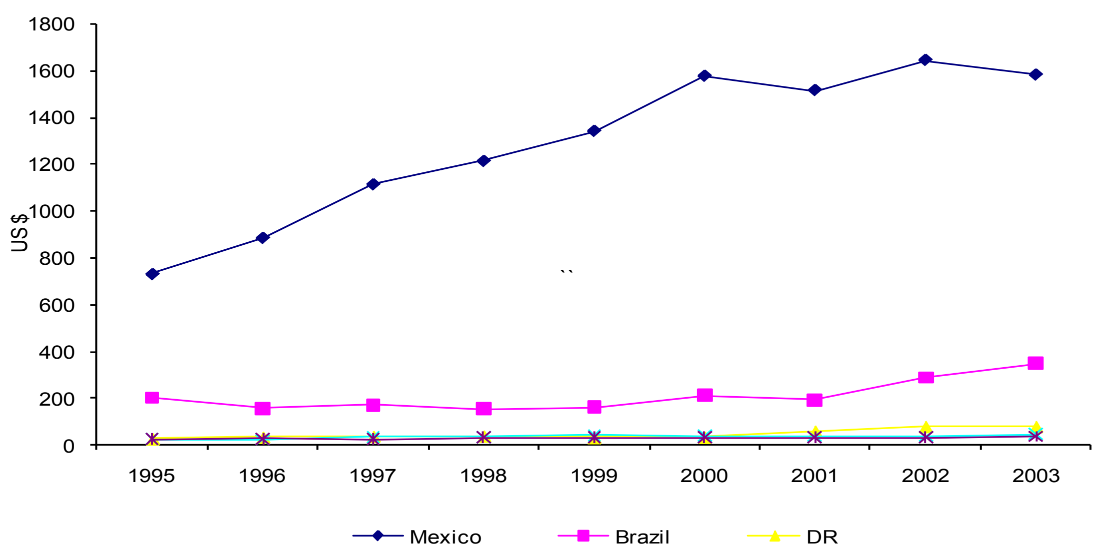
This figure shows the 10 largest textile exporters in Latin America and Asia to the United States. Simple statistics demonstrate that the average exports from Asian countries are $1,087.5 million (Standard Deviation = 299.6) and from Latin American nations are $323.0 million (Standard Deviation = 78.9). The maximum value of exports is represented by China ($1,910.0) and the minumum value is for El Salvador ($31.1). An analysis of variance (ANOVA) reveals that our sample is highly significant with an F-test very close to zero at one degree of freedom. In a simple regression the R-Square is 0.97 and the P-Value is equal to zero.

Figure 2 shows 10 large exporters to the US, indicating Chinese resurgence in world textile and clothing trade after joining the WTO in 2001. Greater competition from China is evident in the widening of US trade deficit with Asia and a noticeable increase in Chinese exports compared to exports from traditional suppliers of assembled goods that typically use US textile inputs such as Mexico, or even high-value added producers such as Taiwan and South Korea. From 2001 to 2002, the US trade deficit in textile and apparel increased by $2.5 billion (4%) to $64.3 billion whereas the overall trade deficit with China increased by $20.1 billion (24%) to $104.2 billion and with Mexico by $8.1 billion (20%) to $48 billion. Apparel accounted for 78% of total textile and apparel imports in 2002, with Mexico is share declining by 2.9%, Dominican Republic is decreasing by 4%, Taiwan is decreasing by 8.1% and China is increasing by 13.3% (USITC, 2003:8-9).

What then accounts for shifts in US world trade in textiles and apparel? Historical trends indicate a number of variables other than China's resurgence in WTO in 2001. As the USITC (2003) has recently reported, the performance of the manufacturing sector in the US is closely linked to changes in US assembly trade with Mexico and exchange rate policies. This reflects the dynamics of maquiladoras that are essentially labor-intensive factories assembling imported materials for re-export to the US market. While textiles did not account for a large share of US imports from China in 2001-2002 (unlike electronic products, games and furniture, for example), the decline in US textile imports from Mexico was only indirectly related to China's entry to WTO.

The other factor was the relative strength of the dollar in 2002, which reduced foreign demand for US inputs used in the production of apparel exports to the US. Against the background of artificially low value of China's currency, the continued relative strength of the dollar reduced US exports of fabrics (intermediate goods) into assembly plants in Mexico. Although the majority of Mexican goods imported into the US appear to come from Mexico, they are made in assembly plants (maquiladoras) that either are subsidiaries of US manufacturers or have contracts with them. These assembly plants, directly established by US companies in Mexico to reduce labor costs, also supply the Mexican market with US inputs of textiles. Whenever foreign or domestic demand for US manufactured goods weakens, this automatically decreases US imports from Mexican assembly plants as well as US exports of inputs to those plants. In this regard, the decrease in US-Mexico trade in 2002 was partly attributable to a 1.5% in US shipments of textile materials to Mexico (USITC, 2003:13-14).

Figure 3: U.S. Imports from Latin America



This figure illustrates the relative importance of Mexican exports in the US Market within the Latin American region. Simple statistics demonstrate that the average exports are $323.0 million (Standard Deviation = 78.9) . The maximum value of exports as an average of the period under consideration is represented by Mexico ($1,289.7) and the minumum value is for El Salvador ($31.1). An analysis of variance reveals that our sample is highly significant with an F-test very close to zero at one degree of freedom. In a simple regression the R-Square is 0.94 with a p-value is equal to zero.

As Figure 2 indicates, one of the key reasons for Mexico's declining share of imports in the US market is not only China's resurgence. It is also the emergence of competing zones of outsourcing in the region and decline in foreign investment. Paradoxically, the gradual phase of global quotas that started in 1995 did not boost Mexico's exports even under its status as part of NAFTA. The phase out of quotas under the Multi-Fiber Arrangement on January 2005 led to a decrease in US imports of Mexican textiles and apparel of $189 million (2%) to $8.8 billion in 2004 (USTIC, 2005:37). This can also be witnessed in increased competition from CBERA members and other lower-cost producers in Latin America and Asia, mainly Honduras, China, India and Indonesia. Yet, according to Figure 3, Mexico has remained as one of the largest suppliers of textile and clothing goods to the US market. While textile exports have traditionally maintained Mexico's competitiveness in the region, declines in employments, foreign investment and higher energy costs have constrained Mexico's ability to compete globally. In addition, China's labor costs are about one-fourth of Mexico's, reflecting comparative advantages in low cost production (USITC, 2007:145).

The import increase from Asian countries other than South Korea and Hong Kong can be explained by the impact of the Asian financial crisis of 1997 (see Figure 4). Facing major currency devaluations and slower economic growth that reduced the dollar price of their goods to the US market, late developers in Asia had to boost exports in an effort to earn foreign exchange. On the other hand, the slower rates of growth and increased unemployment in South Korea effectively weakened demand for US products and contributed to a "doubling" of the US trade deficit with five Asian countries affected by the Asian financial crisis—Indonesia, South Korea, Malaysia, the Philippines and Thailand. The trade deficit rose by $19.2 billion (99%) to $38.7 billion during 1997-98 (USITC, 1999:3-1). After 2001, however, much of the shift in US trade balance largely reflects China's entry to WTO and the third phase of quota elimination under the Agreement on Textiles and Clothing (ATC), which established the WTO on January 1, 1995. Since then, garment imports have made up a significant part of the US trade deficit centered on textiles, apparel and footwear. The widening of trade deficit stemmed from a relatively weak US dollar and the growth of imports from Asia, particularly China. As US imports rose faster than US exports between 2005 and 2006, the trade deficit in textiles widened by $3.9 billion (5%) to $86.5 billion.

Figure 4: U.S. Imports from Asia

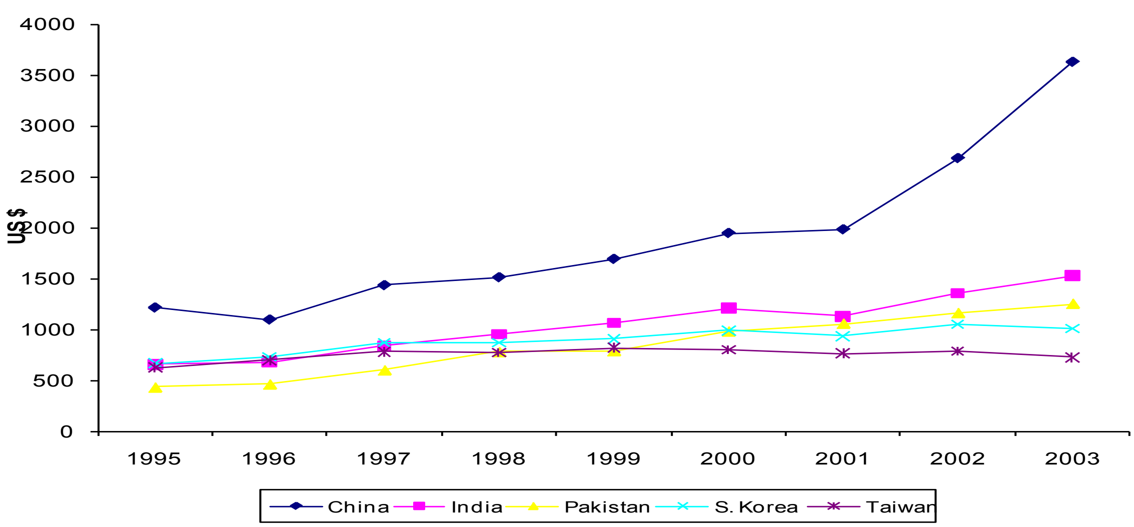


Figure 4 explains the behavior of Asian exports to the United States textile market. Simple statistics express that the average exports from this subsample is $1,087.5 million (Standard Deviation = 299.6). The maximum value of exports is represented by China ($1,910.0) and the minumum value is for Taiwan($753.0). In the aggregate and individually, An analysis of variance reveals that our sample is highly significant with an F-test very close to zero at one degree of freedom. In a simple regression the R-Square is 0.82 with a p-value is equal to zero.

While a relatively weak dollar played a role in limiting foreign imports and stimulating American exports during the period of quota liberalization, the overall trade deficit with Asia did not level off. In textiles and apparel, the trade deficit rose by $6.2 billion (10%) to $67.2 billion in 2006. US imports from China rose by 16% in 2006 to $31.3 billion, making China the largest supplier of US imports (30%), up from 27% in 2005. Most of the increase in China's exports was concentrated in cotton apparel such as knit shirts and blouses, trousers and slacks, sweaters, robes, dressing gowns and nightwear, sweaters, etc. Despite the moderate pace of growth in Chinese exports due to *U.S-China Memorandum of Understanding* that imposed safeguards on certain textile and apparel imports from China during 2006-2008, US retailer and apparel companies continue to outsource services from China. This has been mainly due to "country's abundant labor force, low production costs, ability to make almost any type of textile product or garment at any quality level and in large volumes and strong customer service" (USITC, 2007:141).

IMPACT OF THE POST-ATC QUOTA LIBERALIZATION: LESSONS FOR LATIN AMERICA

Despite East Asia's comparative advantage in garment production, two factors highlight the shifting patterns of garment production from Asia toward Latin America and Caribbean since the phase out of quotas: Lower wages, preferential trade agreements and the need for market proximity to older-established producing countries of Europe and North America. This regional dynamic is evident in the fact that each of the core regions of the world economy—North America, the European Union and the Southeast Asia—is looking for lower cost and specialized production within their respective regions. Regionalization is part of a "production migration" trend where each new country entering the market reduces wages in order to increase its share of world exports at the expense of its rivals.

In this context, China's resurgence was a function of the decline in Asian NICs' share of exports during the 1990's that involved "third production migration" from the Asian "Big Three"—Hong Kong, South Korea, Taiwan—to other Asian economies, including Indonesia, Thailand, Malaysia, Philippines, Sri Lanka. In the 1990's, the new suppliers included Latin American garment and apparel manufacturers, as increasingly evident in the growth of non-Asian exports to the US market from Central America, Caribbean (from 8% in 1990 to 15% in 2001) and Mexico (from 3% in 1990 to 15% in 2001) (Gereffi and Memodovic, 2003:9). Between 1993 and 1997, while East Asia's share of US apparel imports fell from 70.4% to 57.9%, Mexico's share grew from 16% to 26.8% and almost to 30% in 1998 (Heron, 2002:756). In addition, global trade flows during 2004 and 2005 reveal a shift of textile production to countries other than China, even though this was not as pronounced as experts have proclaimed. Figure 3 indicates a relocation of production to India as the main competitor to China and Taiwan in South Asia. As evident in recent trends as well, India rose among the top 5 suppliers after 2001, overtaking Hong Kong as the third largest source of U.S. clothing imports with a market share of 5.1% and 5.3% in 2005 and 2006. During this period, the US trade deficit with India increased from $5.1 billion to $5.5 billion. India's comparative advantage as supplier of raw materials and cheap labor, as well as its production capacity for spinning, weaving and appeal, has a major appeal to US outsourcing firms (USITC, 2007:145).

According to one CRS report, the most recent change in US import data is the rise of Vietnam and India and gradual disappearance of Hong Kong from the top 5 list of clothing suppliers in post-ATC trade. While China's total clothing exports increased by almost $12.3 billion (19.9%) in 2004-2005, India's exports rose considerably, up $1.7 billion (25%) over the year before. Together, India and China accounted 85% of the increase in world clothing trade between 2004 and 2005. The major clothing exporters that lost ground to China and India included Hong Kong, Mexico, Romania and the US. As Hong Kong's clothing exports declined by over $900 million (11%) between 2004 and 2005, Mexico's clothing exports fell by 2.9% and the US's declined by about $61 million (Martin 2007:6-7).

In the period examined, while China, and Asian countries overall, were able to increase their share of the US clothing and textile markets after 2005, Latin American nations, especially Mexico, were still able to maintain access at a moderate pace. For the initial years of the quota phase-out agreement (WTO) that came into force on January 1995, the data indicates that there has been a comparatively persistent increase in US textile and clothing imports from China, with the major increases starting after China's WTO accession in 2001. While gains made by Mexico in the US market were lost to China, Mexico largely retained the value of its exports, especially in clothing. Before China's accession, however, Mexico was the largest supplier of clothing to the US, with an average of 14.3% of the US clothing imports in 1998-2002 (Martin, 2007:11-12). Furthermore, Mexico's share of the US market is evident in Figure 4 where China did not supersede Mexico until 2003.

The report also indicates that Mexico's loss of market share is more pronounced for textiles than for clothing, especially after 2002. This has been due to the entry of low cost producers other than China, such as Vietnam, Indonesia and Bangladesh into the top 5 list. As reflected principally in Mexico's trade balance with Asia, the loss of market share has unfavorably affected growth rates in Latin America. According to a report published by the Economic Commission for Latin America and the Caribbean (ECLAC), Latin America has maintained a large trade deficit, mainly because of increasingly negative trade balance of Mexico and Central America with China. Starting in 2009, China has become the seventh largest supplier of textile materials to Mexico. Mexico's trade balance also reflects the financial crisis that started in the US in 2008 whereas China was marginally impacted. In 2009, Mexico's GDP fell by 7% whereas China's rose by 7.9%. This difference also confirms the major of insights of endogenous growth theory, namely that policy measures can have an impact on the long-run growth rate of an economy. The lack of an "active trade policy" to offset imports of "many inessential articles" and "boost national exports" is one of the factors behind Mexico's unfavorable trade balance with Asia (Godoy, 2010).

What lessons can be drawn from the end of ATC quotas for Latin American producers meant to ensure continued access to the US market and compete successfully with Asian suppliers? Since China can almost produce any textile good at any cost and quality, major retailers in the US are working with Asian "mega firms" which can supply basic products, such as t-shirts, sweaters, cotton trousers, in large quantities and on short notice (Knappe, 2005). Certainly, many mechanisms need to be in place to offset the negative impacts of post-ATC trade liberalization, including safeguard mechanisms to ensure fair competition and equity of access to the U.S market. While our analysis was limited by the absence of time-series data for growth indicators other than merchandise exports, a first-hand examination of the US trade data showed that the textile industry constitutes a steady source of income for Latin American countries. Textiles and clothing trade, as measured by US imports of merchandise for consumption, is still an important source of export-led growth for the top 5 garment suppliers. In 2005, for example, Latin America accounted for $20,274 billion of US merchandise trade balance in textile and apparel as the second largest producer after Asia (USITC, 2007:142).

In order to tackle increasing competition successfully, Latin American policy makers can learn from the US government's trade remedies, which safeguard their industries from foreign competition and promote restructuring of textile production at the country level. For example, legislation to ensure that a certain percentage of new textile products developed by host economies are directed towards the local economy may be one possible way forward. Because of the lack of financial incentives, Latin American producers have not directed a significant amount of attention to local development, jobs and industrial upgrading. Without resorting to direct protectionist measures like restrictive quotas or exchange rate manipulations, governments can grant financial rewards like export subsidies to increase exports. As the literature shows, export subsidies are the opposite of export tariffs: exporters are paid a percentage of the value of their exports, which works more like an incentive rather than a regulation.

However, other policies will need to be considered to address the safeguarding of domestic industries while keeping barriers to trade at a minimum, as NAFTA is unlikely to address these issues. For example, after China's WTO accession in 2001, the US demanded that a "special safeguard provision" be included in the agreement that was subject to consultations with China on an individual basis (Jones, 2006). Latin American countries like Mexico can demand the inclusion of a similar safeguard in their trade agreements with Asia. Such a provision is fully consistent with a "special transitional safeguard mechanism" in Article 6 of ATC intended to protect WTO members against surging imports of a trading partner if those imports cause a "serious damage" to domestic industry. The safeguard mechanism can be applied either by selectively, on a country-by-country-basis, by mutual agreement following consultations or unilaterally if agreement is not reached. The Textiles Monitoring Body is in charge of supervising the implementation of WTO rules (WTO, 2010).

Following Hanson (1994), we also recommend stronger industrial policy intervention to promote "innovative entrepreneurial capability" in the transition from mere assembly lines to higher-value added production. If the textile industry can be a stepping-stone to export-led industrialization capable of competing with Asia, this should offer more than the low-wage jobs typical of the maquiladora sector. This would require using public-private partnerships by decentralizing production and capturing design and distribution activities from the monopoly of larger markets. Another option is the development of new fashion centers that would involve the regional coordination of complex production, trade and financial networks. The Fashion and Design Center in Mexico City is a very good example of this policy intervention (Hanson, 1994:244). Mexican producers, however, need to make special efforts to increase competitiveness. One remedy is to develop a more coherent strategy for the industry that includes regionally integrated supply chains with production and management networks around the world.

CONCLUSIONS

This paper examined the impact of the phase out of quotas on clothing imports/exports during the three stages of the quota elimination process (1995-2003). In particular, it examined U.S.-China relations and provided recommendations for Latin America. Additionally, the paper discussed the recent lifting of quotas under the Agreement on Textiles and Clothing (ATC) over a ten-year period that would possibly lead to a massive influx of exports from China to the detriment of exports from other nations. This has especially made it difficult for Latin American producers, with their low-value products and fragmented industries, to compete with Asian suppliers in the US market.

This paper tested the proposition above by examining trends that have shaped US textile and clothing trade since 1995—the period during which the quota liberalization process and a "surge" in Chinese exports started. The data included figures on exports from the top 10 garment suppliers to the US market between 1995 and 2003. Using Analysis of Variance (ANOVA) as a statistical test for heterogeneity of means by analysis of group variance, we were able to establish meaningful trends in the US textile market. To apply the test, we assumed random sampling of a variate Y (US imports) with equal variances, independent errors, and a normal distribution.

This paper concluded that Latin American countries, particularly Mexico, have maintained their exports at a moderate pace. While China's exports are growing faster than Mexico's, especially in post-ATC trade, the US share of China's textile exports is not as pronounced as often predicted. This confirms expert prediction for China's gains in world trade although it does not necessarily explain the rate of growth in US imports. This study further demonstrated that Latin America will retain a sufficient critical edge in textile and clothing business with the US and that the impact of a "surge" in Chinese exports has been exaggerated. The US is still a major recipient of Latin American exports; particularly textile materials assembled in Mexico for re-export. In 1997-2002, for example, Mexico superseded China as the second and third largest textile supplier for the U.S. market (Martin 2007:13).

While it is clearly the case that the US has been importing more of its clothing and textiles from China, U.S. trade data for three phases of the ATC revealed a more *complicated* picture of the impact of quota liberalization on textile exports/imports. When sorted by the second or third phases of quota eliminations, for example, US import data did not show radical surges in Chinese exports as often predicted. In 2000, for example, China accounted for 13% of the US clothing market while EU (12%), Japan (32%), and other economies (40%) stood out as larger recipients of China's clothing exports (WTO, 2009:39). While gains made by Mexico in the US market were increasingly lost to China, especially after 2001, Mexico has by and large retained its status among the top 5 clothing suppliers between 1995 and 2001. Mexico's losses are more pronounced for textiles than for clothing, especially with the most recent rise of Vietnam and India to the top 5. Our findings support Martin's (2007) and WTO's (2008) conclusions that "preferential trade agreements" such as Caribbean Basin Initiative and US "safeguard measures" against certain categories of imports from China, helped developing countries like Mexico, Costa Rica and Honduras to maintain their exports.

One of the limitations of the study is the use of time-series data for growth indicators other than export by sector. While employment figures exist for the US, information about textile employment in developing countries is scattered and inconsistent. This has made it difficult to weigh the costs and benefits of export-led industrialization by country. Finally, the trade data should be interpreted with caution following the WTO Agreement on Textiles and Clothing, since it is more useful for analyzing countries on an individual basis than for comparison among countries, as the specialists have suggested (Nordas, 2004:11). Future research can benefit from the inclusion of endogenous factors in regression analysis, such as policy measures, that can affect the long-run growth of the textile industry at the country level. Endogenous growth theory highlights the contribution of public policy to economic growth. In order to give our findings a stronger basis for prediction, further research is needed on the relationship between textile labor market and endogenous variables since the full elimination of quotas in 2005.

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FOUNDATIONS FOR EFFECTIVE PORTAL SERVICE MANAGEMENT

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ABSTRACT

Organizational portals are vital parts of knowledge-intensive organizations. They play several critical roles: a) provide a platform for deployment of web-based services; b) envelop distributed internal resources; and c) present a centralized access to resources and services. Portal services often incorporate digitalized organizational business processes. Digitalization enables automation of business processes and facilitates improved management and operating efficiency of organizations. Despite advancements in technology and significant investments, it is commonly observed that web services implementing business processes have low usability. Generally, low usability results from misalignment between natural characteristics of human interactions with services in digital environments and their design and implementation. Human-service interaction analytics expose hidden difficulties and enable effective innovation and management of portal services. We present pertinent managerial implications of analytic findings from a case study of a large-scale organizational portal with a significant number of services. The findings provide actionable knowledge for effective evidence-based management, reengineering and innovation of portal services.

KEYWORDS: analytics, portals, web services, management, knowledge-intensive organizations, actionable knowledge discovery.

JEL: M15; O32; O33; L86; L89

INTRODUCTION

"The overwhelming majority of organizations, however, have neither a finely honed analytical capability nor a detailed plan to develop one." (Davenport and Harris, 2007). Absence of analytical capabilities represents missing opportunities in alleviated operating efficiency of organizations and working efficiency of their members. Conversely, it provides significant strategic advantage for a small number of organizations with analytical capabilities. This matter is notably pronounced in information technology domains. Organizations deploy internally a broad spectrum of information technologies. They include technologies such as intranets, web-based portals and decision support systems. Significant resources are devoted to management and maintenance of organizational information systems and infrastructures. Knowledge-intensive organizations and workers increasingly rely on services available at internal web portals (Alvesson, 2004; Davenport, 2005). The services often incorporate essential business processes that have been migrated to portal platforms. They play a vital role in functioning of organizations.

Contemporary organizational information systems have been employing service-oriented technologies (Sullivan, 2004). Service orientation enables efficient re-use of existing organizational information resources and economic deployment of new ones. There has been lack of coordination in early adoptions of information systems in organizations. Insufficient attention has been paid to the overall strategy. It has resulted in dispersing systems with overlapping functionalities within organization that have been largely incompatible. The need to coordinate the information technology resources has surfaced. Organizational portals have become the solution (Collins, 2000). They facilitate gateway to distributed resources.

Usability of portals and their services has been relatively low despite considerable advances in web technologies and organizational investments (Géczy et al., 2007). Services and resources on organizational portals are often underutilized. Implementations and executions of business processes via web services have been difficult. Progress and improvements in portal services, their usability, and innovation, have been relatively slow. Organizations have been extensively focusing on their external web presence (Petre et al., 2006; Park et al., 2004). Internal web presence and demands of knowledge workers for efficient portal interaction have been largely sidelined.

This work addresses the pressing needs for effective management, engineering and innovation of organizational portal services. We advocate evidence-based management approach drawing from viable and timely derived analytic evidence. The introduced material is complemented by a case study of a large-scale web portal of knowledge-intensive organization.

The manuscript is organized as follows. The literature review section is followed by the 'Analytics-based Management Strategy' section. It describes the essential four stages of analytically founded management strategy for portal service management. The next section, 'Data Collection and Case Study', presents concise overview of the organization in our case study and the analyzed data. Analytic and interaction framework is provided in the section 'Interaction and Usability Analytics Deployment'. The pertinent findings of analysis and identified problems with organizational portal services are described in the section 'Observation and Problem Identification'. The exploratory findings are constructive and translate directly to several implementable solutions. High priority management solutions are introduced in the section 'Solution Management'. The presentation finishes with a concise summary of the essential points, limitations and directions for future research in the section 'Conclusions'.

LITERATURE REVIEW

Organizational web portals have been at the forefront in increasing productivity of workers and efficiency of use of information technologies (Collins, 2000). Earlier adoptions of information technologies by organizations have led to distribution of resources and incompatibilities between implemented systems. Resources and services have been accessible locally within their implemented areas. Web portals have changed this. They have provided single point access to distributed resources and services within the whole organization via service-oriented technologies (Sullivan, 2004).

Usability of portals and their services plays an important role in alleviating operating and working efficiency. Various approaches to evaluating usability have been explored. Popular approaches are metric-based—surveyed by Dhyani and Ng (2002). Tullis and Albert (2008) have presented six categories of metrics: performance, issues-based, self-reported, web navigation, derived, and behavioral/physiological. They have also explored methods for collecting, analyzing and presenting the data. Metric-based approaches utilize measuring of several variables of human-web interaction process and constructing formulas for evaluating particular characteristics. Human interactions are divided with respect to temporal characteristics into sessions. Further measurements and metrics are performed within the temporal segments of sessions (Huntington et al., 2008; Géczy et al., 2007). Based on the acquired measurements and derived metrics, usability models for portals and their services are created. Bosov (2009) debates that proper observation and modeling of web portal functioning requires accounting for two characteristics: efficiency of information sources and user activity. He introduces technique for determining model parameters and presents mathematical models for portal operation. His model provides a plausible higher-order perspective on portal functioning. However, the usability of portals is significantly affected also by the quality of services they provide. Yang et al. (2005) have been suggesting evaluation of portal service quality according to five aspects: usability, usefulness of content, adequacy of information, accessibility and interaction. They argue that these five dimensions suitably expose service quality.

It has been observed that organizational portals and their services have relatively low usability. Géczy et al. (2007) have observed that users at large scale organizational portals often experience difficulties in executing tasks and locating relevant resources. These are two primary activities of users performed at organizational portals. Business processes implemented by web services have an extensive number of stages that are tedious to execute by users. Negative experience during the task execution significantly affects the perceived usability of a portal. Finding suitable resources in a timely manner has also been reported problematic. Among the most popular services on organizational portals are personal services. Telang and Mukhopadhyay (2005) have been investigating search, information and personal services on several portals and demographics. They argue that these three complementary categories of services lead to different portal uses. The results have shown that the strongest demand has been for personal services while the weakest demand has been for search services. Dissatisfaction with search results has negatively affected future user decisions. Personal and information services have led to prolonged length of portal visits.

Improving usability of organizational portals requires active management effort at several stages. Burton-Jones and Gallivan (2007) have suggested approaching information systems and their use in organizations through several levels. One level at a time may lead to incomplete and disjointed view of how information systems are used and managed in practice. Kotorov and Hsu (2001) have proposed a management model for organizational portals similar to the management model for newspaper production. They have argued that it provides the adequate organizational structure for overcoming the inherent limitations of enterprise portals. Significant efforts in managing organizational information systems and portals have been devoted to the best practices (Sullivan 2004). Best practices are a useful approach; however, they rely on knowledge accumulated over extended period of time that can be summarized in generalized terms. Rapid progress of information technologies necessitates a management approach capable of timely responding to issues. We advocate evidence-based management approach built on analytically obtained evidence. Davenport and Harris (2007) have recommended effective use of analytics. Analytics provide well-timed business intelligence suitable for gaining and maintaining competitive advantage. They are also pertinent for managing organizational information systems.

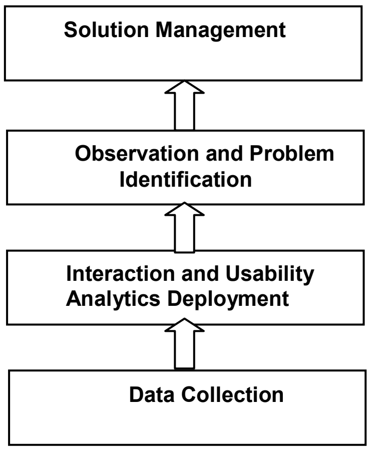
ANALYTICS-BASED MANAGEMENT STRATEGY

The study emphasizes evidence-based management strategy that relies on suitable utilization of analytics. The management strategy incorporates a sequence of steps leading toward relevant managerial action domains. The sequence is illustrated in Figure 1. It incorporates four essential stages: data collection, interaction and usability analytics deployment, observation and problem identification, and solution management. Note these are the core steps. Depending on particular case, the sequence may be expanded. Following paragraphs concisely describe the individual stages.

The initial stage is the collection of viable data on interaction and usability of services. The clean and preprocessed data is analyzed according to properly designed and deployed framework. The analytic findings expose usability and interaction characteristics that lead to the identification of problems. Constructive problem identification enables effective solution management.

Data Collection. The initial requirement is a suitable collection of data directly and indirectly relevant to web portal services and usability. Three pertinent issues should be addressed in data collection techniques: data quality, availability and voluminosity. Data quality is inherently related to the analytic targets and observations; thus, qualitative indicators may vary accordingly. Generally, higher quality data allows for greater depth and accuracy of observations. Availability of data relates to timelines. Data may be available for analysis immediately or after a certain period. Immediate data availability enables online analytics—processing directly after monitored interactions occur. The other approach is to collect data during a certain period and make it available then. For instance, data may be collected during the day and processed during the night—when greater computing power is accessible and energy costs are lower. Voluminosity relates to the quantity of data. Larger volumes of data may provide more details; however, they are also more costly in terms of collection and processing.

Figure 1: Progressive Sequence of Stages in the Analytically Founded Management Strategy



Interaction and Usability Analytics Deployment

Collected data should permit suitable exploratory analysis of interactions of users with portal services. Relevant analytics should encompass both temporal and navigational characteristics of users. Temporal analytics highlight interaction dynamics of users with services. It is important to account for temporal features of users' activity and inactivity.Inactivity periods may indicate bottlenecks in interaction efficiencies. Navigational analytics expose how users navigate through the navigational and hyperlink structures of portal services. Shorter navigational pathways are generally more desirable than longer ones. Important issue is also derivation of proper usability metrics from analytically obtained data. The metrics may serve as indicators for triggering corrective actions. Certain corrective actions may be automated while others may require further elucidation and identification of problems.

Observation and Problem Identification

Analytics enable observation of natural human-service interactions. The observations should encompass how users utilize different portal services and whether the use characteristics are aligned with the design goals and future expectations. It is suitable to observe both individuality of users and similarity among specific user groups. Although each user is different, some common human-service interaction patterns usually emerge. Usability observations shall expose which services are used often, or sporadically, as well as overall portal and service statistics. They may also indicate which services users use effectively and which not. Services that are used rarely, and/or ineffectively, signal potential problems. The problems may be wide ranging. Further analysis of such services reveals the problematic aspects and allows identification of viable solutions.

Solution Management

Identified problems and their solutions should be properly managed. Certain problems may necessitate immediate action; for instance, if the service is mission-critical or the problem is related to information security. In this case, a proper crisis management and guidelines are pertinent. Noncritical problems may be addressed in a planed manner—allowing optimal management of available resources while maintaining timely solution delivery. When managing solutions to noncritical service problems, it is beneficial to identify suitable action domains that reflect both commonly observed issues and novel ones. Identification of management action domains permits more efficient allocation of human, technological and other resources. The set of action domains should not be extensive, in order to avoid excessive fragmentation of available resources.

DATA COLLECTION AND CASE STUDY

Various data collection methods can be utilized for elucidating human-service interactions. There are two suitable techniques for organizational environments: server-side and client-side. Web servers on which services run have capability to store interaction information into log files—hence, the server-side collection. Scripts executed locally on users' computers do the client-side data collection. Both techniques provide reasonably accurate data. While server-side data collection is independent of user setup, client-side data collection requires enabled scripting.

The presented case study utilized server-side web logs of a large-scale distributed intranet web portal of The National Institute of Advanced Industrial Science and Technology. The portal hosts over eight-hundred services and over three-million resources. It provides extensive and rich set of real-world data.

Table 1: Summary of Data

Data Volume	**~60 GB**
Number of Services	855
Number of Servers	6
Number of Log Records	315,005,952
Number of Resources	3,015,848
Time Period	1 Year

Information on data used in our case study. Analyzed one-year web log data was large—in excess of sixty giga bytes. Six web servers collected the data. The data contained over three-hundred-million log records. There were significant numbers of services and resources. The organizational portal had eight-hundred-fifty-five services. The data analysis was computationally intensive.

Web logs contain sufficient information about users' interactions with portal services. However, web logs also contain information irrelevant for our analytic purposes; such as machine generated portal traffic. Web log data requires processing before it can be used for analyzing human-service interactions. The data preparation is detailed in (Géczy et al., 2007).

Portal services implement a broad range of business process in the organization. The services support resource management, administrative processes and accounting. They also include services facilitating cooperation with industry and other institutes. The primary users of portal services and resources are skilled knowledge workers. They include management and administrative personnel, researchers, engineers, technical staff, and assistants. Different knowledge workers utilize different services and resources. Some services and resources are restricted; however, majority is accessible to all users. Varying use of services by a large number of knowledge workers has been reflected in diverse interaction and usability characteristics.

INTERACTION AND USABILITY ANALYTICS DEPLOYMENT

Proper analytic and usability framework are pertinent for viable observations. Design and implementation of an analytic framework should be aligned with organizational requirements and available resources. Online and offline analytics may be implemented. Online analytics are desirable for critical aspects of organizational portals, such as mission-critical services and security issues. Offline analytics are suitable for planed improvements and updates.

Data collected about human behavior in portal environments and interactions with services should incorporate both temporal and navigational dimensions. Temporal dimension enables exploration of interaction dynamics while navigational dimension allows investigation of hyperlink structures and navigational pathways. These attributes are also appropriate for usability observations. Web log data collected by web servers contains both temporal and navigational information. After preprocessing and cleaning, it is well suited for analytics (Géczy et al., 2007).

Recent analysis of temporal dynamics of humans in digital environments revealed various significant features (Barabasi, 2005). Users exhibit rapid activity periods followed by longer inactivity periods (Dezso et al., 2006). Users execute certain interactive tasks rapidly while others they complete after a comparatively longer delay. These dynamics allow temporal segmentations of interactions. The interaction sequences can be divided into segments of various durations: longer segments are sessions that can be further divided into subsequences reflecting tasks of various complexities. Sessions and subsequences contain points through which users navigated to accomplish their browsing goals. These underlying findings are directly applicable to human-service interactions. They encompass essential temporal and navigational aspects. Extension of this concept to feasible human-service interaction analytics necessitates accounting for further specifics related to web services.

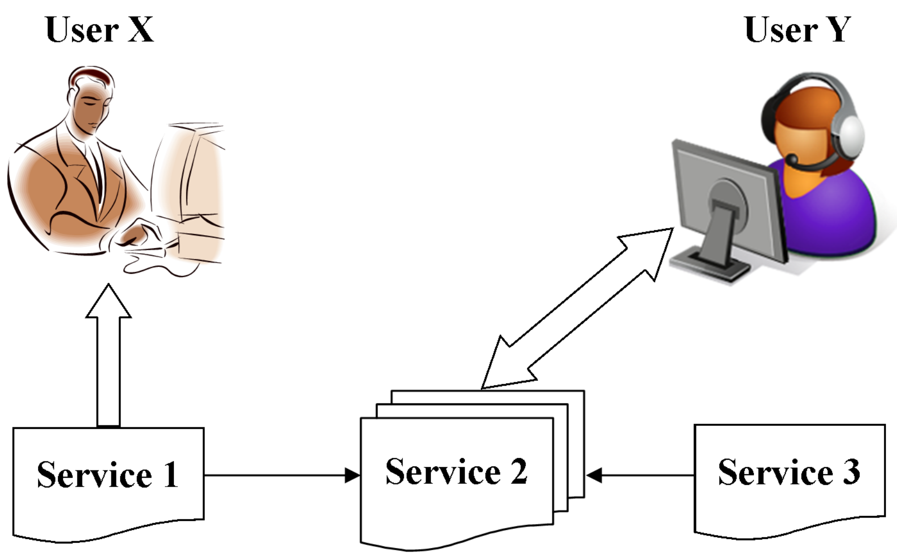
Web services interact with both humans and other services. Service-to-service interactions have been extensively modeled (Zaha et al., 2006; Vinoski, 2002). Explorations of human-service interactions have been performed relatively recently (Géczy et al., 2008). In observing human-service interactions, it is beneficial to categorize services with respect to their composition and interactivity. According to the service composition, we can distinguish two main categories: atomic and compound services. Atomic services are functional elements that do not utilize functionality of other services. Compound services are functional elements employing functionality of one or more atomic or compound services. According to human-service interaction dynamics, we differentiate two main groups: passive and active human-service interactions. Passive human-service interactions exhibit one-way interaction patterns: service→human, or human→service. Active human-service interactions exhibit two-way interactive pattern: service↔human.

The concept of interactive and compositional segregation is illustrated in Figure 2. Services 1 and 3 are atomic because they do not employ functionality of other services. Service 2 is a compound service employing functionalities of services 1 and 3. Service 3 interacts only with service 2; hence, it is a non-human interacting service. Service 1 interacts with user X monodirectionally—depicting passive human-service interactions (for instance, when user reads displayed information). Service 2 interacts with user Y bidirectionally—portraying active human-service interactions (for example, interactive multimedia). Services 1 and 3 supply their functionalities to service 2, which is outlined by monodirectional service-to-service interactions.

Services provide functionalities to other services or humans. Their functionalities may be atomic or compound. The atomic services do not utilize functionalities of other services (services 1 and 3). The compound servicers utilize other services (service 2). Services can interact with humans passively or actively. The passive human-service interactions are one-way interactions from services to humans (service 1→user X), or vice -versa. The active human-service interactions are two-way interactions between services and humans (service 2↔user Y).

Deployment of the described analytic concept within organizations should account for at least three primary issues: specific analytic needs, available resources and legal aspects. Analytic needs of an organization should be clearly outlined prior to deployment. It saves overhead and running costs. At large organizations and portals, data is voluminous. Analytic processing and utilization may require extra resources—both computational and human. Behavioral data is sensitive. Legal compliance with privacy and security regulations is required.

Figure 2: Illustration of Service Composition and Interactivity



OBSERVATION AND PROBLEM IDENTIFICATION

The presented interaction and usability analytic concept exposes numerous characteristics of portal users. Our case study revealed several important findings. Selected observations highlight interaction and use features of knowledge workers as well as problematic issues. Relevant findings are concisely described in the following paragraphs.

Underutilization. Knowledge workers have considerably underutilized available portal services. Approximately ten services have been frequently used (out of 855). More than half of the services have been used rarely. Almost 50% of use has been attributed to only three services.

Navigation Strategy. An interesting navigation strategy of knowledge workers has been exposed. They have been most familiar with the starting navigation points. General navigation strategy can be described as follows: knowledge of the starting point and recollection of the navigational path to the target.

Task Segmentation. Knowledge workers have divided their more complex interactive and navigation tasks into three subtasks. Complex interactive sessions have contained on average three subsequences. Within the subsequences, there have been approximately five interactions.
Active Human-Service Interactions: Active interactions have been within the range of seconds. Average interactive subsequence has lasted 30.68 seconds. During this half minute, users have made about five interactions, that is, one interaction per six seconds. This implies that effective active service interactions should be executable in a few seconds.

Passive Human-Service Interactions: Passive interactions have been in the range of minutes. Knowledge workers' inactivity periods exposed this finding. Average delay between transitions has been approximately 6 minutes 28 seconds. During this period, users have exhibited significant passivity, such as reading displayed information.

Usability and interaction observations display several important characteristics. They highlight how knowledge workers interact with web portal services, which services are used frequently and efficiently, and overall usability statistics. The findings also show problematic issues. They expose underutilized services and resources, and bring to light conflicting aspects requiring corrections.

SOLUTION MANAGEMENT

Analytics are the enabler of evidence-based management—a progressive step in information systems management and innovation (Hamel, 2007). Managerial activities and decisions are based on viable and timely generated evidence. Formerly, information technology management in organizations relied principally on tacit knowledge accumulated over the years of experience and/or mentoring. Although valuable, experience-based tacit knowledge takes relatively long time to gain and transfer. However, the progress in information technologies is fast. This discrepancy results in late deployment and mismanagement of new technologies due to tacit knowledge gaps—consequently, leading to losses for organizations.

Evidence-based management style is preferable in rapidly evolving information technology climate. Furthermore, it beneficially complements the experience-based management style. Analytically obtained evidence and well-identified problems substantially eliminate guesswork in critical decision-making. Human-service interaction observations translate to actionable knowledge. Desirable management action domains can be identified—allowing planning, allocating resources, and delivering timely solutions. Relevant domains originating from the case study are concisely described in the following paragraphs.

Outsourcing versus Reengineering Decision-Making

The case study revealed a significant underutilization of web portal services. Services that are unused or sporadically used contribute to waste of resources and information overload. Unused noncritical services should be eliminated. Critical services with problematic use should be reengineered based on available analytic evidence, in order to improve their usability. Occasionally accessed services with low usability require further decision-making. They can be outsourced or reengineered. Resource-intensive services may be economically outsourced. Infrequently used services with low usability may be economically reengineered.

Structural Reengineering. Structural complexity of portal services should be suitably managed. This relates to determining atomic and compound service structures as well as segmentation of complex business processes. Well-determined structures of compound services provide several benefits over a lifetime of services. The observations indicate that users divide their complex portal tasks into three subtasks. However, it is often the case that business processes are divided into more than three stages. While this may be proper in paper-based implementations, it is not recommended in web-based implementations. It is advisable to follow natural task segmentation of users obtained by analytics and reengineer services accordingly.

Interaction Reengineering. Aiming at efficient interaction dynamics is another important management action domain. Interaction reengineering of portal services should be aligned with the observed elemental characteristics of active and passive human-service interactions. Passive human-service interactions should be limited to 7 minutes. Depending on information presentation, 7 minutes translates to different amounts processable data. Consider text-based presentation. Average adult screen reading speed is 200 words per minute with comprehension of 60%, that is, effectively 120 words per minute. A user can effectively process approximately 840 words in 7 minutes. Analogously, active human-service interactions. Users should be able to interact with services within a few seconds.

Innovation. Operations within organizations and business processes often undergo changes. Successful management of portal services should account for changes during a service life cycle. Critical services should be closely monitored and properly innovated. They should be re-aligned with the observed use characteristics and organizational policies. Novel and/or existing information technologies can also alleviate usability of portal services. Assistance services may be deployed. Recommendation and collaborative filtering systems may offer help when interacting with a service. They also contribute to increased learning speed of new and/or inexperienced users. Personalization is also beneficial. Functionality and interactivity of services may reflect individual or group characteristics.

The introduced management action domains originate from the deployed analytics and identified problems. They address the essential matters in effective management of portal services and aim at improving usability and efficiency. Domain identification helps focusing both human and technology resources on vital aspects. Depending on availability of resources, managers can identify more or less specific domains—targeting particular issues for their organizations.

CONCLUSIONS

We presented evidence-based management of organizational portal services. The management strategy advocates incorporation of four stages: data collection, interaction and usability analytics deployment, observation and problem identification, and solution management. The first step is collection of reliable data about human-service interactions and portal usability. Noninvasive data collection methods are preferable. Deployment and utilization of analytics is the second step. Suitable analytics provide pertinent evidence on how users interact with portals and their services—they highlight behavioral and usability aspects. Observation of characteristics of human interactions in web environments helps to identify problematic aspects of services to a substantial detail. Having identified concrete problems, managers can supervise innovation and timely deployment of suitable solutions. Identification of specific action domains allows for efficient solution management and critical decision-making. The work is supported by a case study of a large-scale portal of knowledge-intensive organization. The outlined stages in evidence-based management style are complemented with examples from the case study. Possible limitation of the study is the reliance on web log data only. Additional data can be collected using client-side scripts. However, this requires enabled scripting in browsers. Without it, client-side scripts would not run and no data would be collected. Client-side scripting should be approached with caution in organizational environments since its enabling has security risks. Future directions of the study shall include extensions of analytic capabilities, solution management, and elucidation of interlinks with business intelligence systems.

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