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Evaluating the Return on Marketing Effort Using a Customer Equity Approach

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ABSTRACT

This paper describes the development of a spreadsheet model (EFFMARK) for measuring the effectiveness of marketing effort in the conventions and meeting planning industry. The model quantifies the effectiveness of marketing effort by calculating the ROI on investments made in each of the customer equity drivers that were identified for the convention and meeting planning industry. The drivers were identified through a survey conducted of event managers of a major Convention Center in the United States. A total of 89 usable responses were analyzed using factor analysis and logit regressions. The parameter values derived from the analysis were used in the spreadsheet model for developing the profile of marketing effectiveness. The convention and exhibition planning industry was found to have the following CE drivers: special knowledge, relationship, price and value, information dissemination, and location. Marketing efforts that focused on enhancing communications were found to be the most effective in terms of increasing customer equity in the convention and meeting planning industry with about a 125% return.

1. EVALUATING THE RETURN ON MARKETING EFFORT USING A CUSTOMER EQUITY APPROACH

The nature of marketing has evolved into a complex set of activities, all designed to achieve a constructive change in the business. Such changes may range from enticing competitors' customers to developing innovative products that the customers might buy in large numbers. The diversity of marketing efforts a company can engage in is truly mind-boggling. Companies can develop an assortment of programs ranging from simple coupons to completely integrated marketing campaigns involving multiple channels such as radio, TV, newspapers, and the internet. The ultimate goal of all such programs is to increase sales and hence the profits of the company. However, gaining a clear understanding of the effectiveness of each individual effort has always been a challenge for marketing managers. Invariably, it becomes hard to justify an investment in a marketing effort and hence there is often a sense of ambivalence associated with undertaking expensive and uncertain projects. This paper proposes a methodology for evaluating the return on marketing program investments in the hospitality industry by considering the marginal improvement in customer equity achieved by undertaking such efforts. A decision

support system called EFFMARK has been specially developed for the purpose of such analysis.

Customer equity is a concept that has been gaining traction in recent marketing literature. Customer equity can be defined as the sum of the total discounted lifetime values of the current and potential customers of a company. With the evolution of relationship marketing, researchers have proposed the concept of customer equity as an overall measure of marketing success as it directly relates to shareholder value (e.g. Berger et al., 2006; Gupta et al., 2004; Rust et al., 2004; Srivastava et al., 1998; Wiesel and Skiera, 2005). The customer lifetime values itself has been a popular topic in marketing and in its simplest form, it can be calculated as the net present value of all the future cash flows (contribution margins) that can be generated from the customers. The concept of customer equity implies a shift from product and brand focus to an intimate customer focus. It also implies a long-term approach to evaluating the worth of a customer compared to using a gamut of traditional short-term matrices for evaluating marketing effectiveness. In order to understand the logic of using such an approach, it is useful to undertake a historic perspective of the marketing function.

Not unlike other functional activities, marketing has also been impacted by business environment changes over the decades. During the golden era of business directly following WWII, understandably, there was a surplus of demand for all products and services since people had made immense personal sacrifices and postponed their lives in order to accommodate the resource needs of the war. This also meant that immediately after the war, there was a seller's market where the producers could make a good profit by simply supplying generic products and performing marketing functions that focused on increasing awareness through advertising in mass media, such as newspapers and magazines, and ensuring that a dependable production and distribution schedule was maintained. The degree of anonymity of the customers was very high since companies often did not have any clue as to who the buyers of their products were. The technologies required to maintain such customer information was either non-existent or prohibitively expensive, thereby limiting the availability of customer information. Figure 1 illustrates the changing nature of marketing focus over the past few decades.

Figure 1: Change in marketing focus with time

With the shifting competitive landscape came the need to develop branded products that could differentiate themselves from the competition. This is analogous to a hotel patron asking for a hotel room reservation compared to asking for a specific brand hotel room (say, Hyatt or Marriott) while making a reservation. Research shows that brand recognition and reputation are perceived to be important factors for hospitality companies (Blumenthal and Bergstrom, 2003). The brand name may imbue the potential customers with holistic images of what the product might offer and consequently increase the probability of a booking. Even at this stage the focus was mostly on projecting the brand image and not on identifying the customers that might be attracted to the brand. Part of the reason for this undifferentiated approach was the technical cost of electronically storing and maintaining customer information. It was still expensive enough to limit such technologies to large corporations that could afford them. As the industries matured and became extremely competitive, companies used research to 'slice-and-dice' their markets into manageable segments, the needs of which they could individually suffice through the development of various sub-brands. Advances in affordable technologies enabled a majority of the companies to maintain and analyze segment-level customer data. Customer information at the segment level, however, made it impossible to analyze how individuals within a segment were reacting to specific

marketing efforts. During the 1980s as corporations shifted their focus inwards, critically evaluating each functional area for their individual contribution, there was increasing pressure on marketing managers to improve the returns on their investments as it became clear that an abundance of marketing dollars were being wasted on customers that may never be profitable for the company. This renewed focus demanded keeping track of detailed information about each individual customer's purchase behavior and the marketing dollars expensed on that customer each year. The rapidly declining cost of technology combined with the synergies of web-based database programs have enabled even small companies to create and store silos of customer information that they could analyze and combine with other syndicated databases to make strategic decisions. For the first time, the stars were all aligned and business' intent willingly merged with advances in technology to provide useful customer information at the individual level.

In this milieu, many researchers suggested that the new age of marketing demanded a paradigm shift from products or brands to customers. They argued that the customer was more central to a company than its brands or products since brands and products come and go while customers remain (with effective marketing). Since all marketing activity is driven by the intent to change customer purchase behavior, it would be prudent to focus on the relationships between the marketing effort and the potential change in the behavior of the customer. It was thought that the true measure of the effectiveness of a marketing program would be reflected in matrices that could quantify such relationships directly or indirectly.

Over the years, many researchers suggested various methods for quantifying the effectiveness of marketing effort. During the early years, Larreche and Srinivasan (1982) described their STRATPORT decision support model and used portfolio analysis to evaluate the impact of different strategic decisions on the long-term profits compared to the short-term resources available to a company. In the analysis, they considered the tradeoffs of marketing expenditures and their impact on the net present values of company revenues and costs. The model did not explicitly provide a means for calculating the returns on marketing expenses or the lifetime value of a customer. Berger and Nasr (1998) provided a series of mathematical models for calculating customer lifetime values based on accepted notions of consumer behavior. The paper argued that a systematic approach grounded in sound assumptions was needed in applying mathematical models for calculating customer lifetime values. A methodology for calculating the ROI on marketing expenses was also provided. Bolton, Lemon, and Verhoef (2004) proposed an integrated framework called CUSAMS (Customer Asset Management of Services) that considered the influence of marketing instruments on customer behavior and thereby change the value of customer assets. Reinartz and Kumar (2000) conducted an empirical study using a three-year window customer data from a major catalog company to evaluate the relationship between long-term customers and profitability. The study evaluated the influence of marketing instruments and determined that, contrary to common notions, long-term customers are not necessarily the most profitable. The authors suggest methods for calculating customer lifetime values and the return on marketing investments.

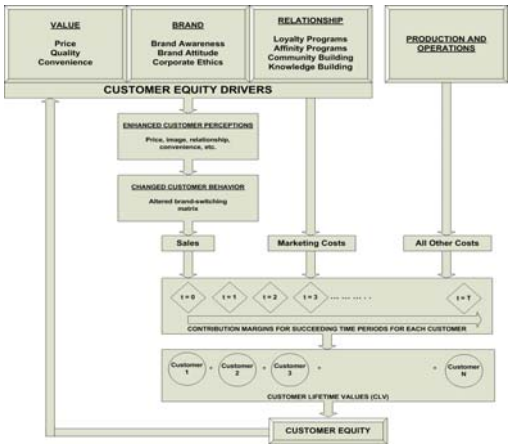
In a seminal book Rust, Zeithaml, and Lemon (2000) while providing layman's definitions of customer equity, also showed how to determine the return on marketing expenditures using customer equity as the benchmark. In a subsequent book Rust, Lemon and Narayandas (2005) and a paper (Rust, Lemon and Zeithaml 2005), the authors expanded the evaluations to individual level by using the individual brand-switching probabilities as the means to explain the potential changes in customer equity.

2. The Conceptual Framework:

The conceptual framework illustrated in Figure 2 brings together a myriad of thoughts about the marketing function. At its core, the framework emphasizes the importance of customer behavior as the ultimate source of profit. The framework integrates the concepts of value equity, brand equity, and relationship equity into ten marketing instruments that may have an influence on

consumer behavior. Value is the keystone of a customer's relationship with a company (Rust, Lemon, Narayandas, 2005). Customer value can be defined in terms of getting benefit and giving sacrifice (Woodruff, 1997; Slater, 1997; Day, 1994; Hamel and Prahalad, 1994). The benefits are what the customer perceives as the advantages of using the product, and the sacrifice is the tradeoff the customer is willing to make in order to achieve the benefits (Dodds, et al. 1991). The key drivers that influence value are quality, price and convenience (Gale, 1994). Quality encompasses all tangible and intangible aspects of the product that can be controlled by the company. Price is a measure of what the customer gives up in order to gain the benefits of the product. Convenience is the actions that the company can undertake in order to reduce the cost or effort made by the customer in doing business with the company (Rust, et al, 2005).

Figure 2: Conceptual Framework



Brand equity gives meaning and produces holistic images of the product in the minds of the customer. Brand equity is a core concept concerning brand management and it is viewed from different perspectives (Aaker, 1996; Keller, 2003; Lassar, Mittal, & Sharma, 1995; Motameni & Shahrokhi, 1998; Park & Srinivasan, 1994; Simon & Sullivan, 1993; Yoo & Donthu, 2001). The key drivers of brand equity are brand awareness, brand attitude, and corporate ethics (Aaker, 1996). Companies can influence the awareness and attitudes towards their brands through various marketing efforts such as advertising, promotion, and public relations. The ethical standard by which the company lives also sets a stage for public perceptions about the brand of the company (Woodruff, 1997; Zeithaml, 1998).

Maintaining meaningful relationships with customers form the basis for retaining customers for the long-haul. A company can build its relationship equity by engaging in many valuable activities that are of interest to the customers (Blattberg, Getz, and Thomas, 2001). If a company provides information to the customer on an ongoing basis that will educate and help them make better purchase choices, the customer will perceive the relationship to be strong. The opt-in email service used by many online travel service companies to inform them about impending low prices is an excellent example of building useful relationships. The key relationship equity drivers include loyalty programs, affinity programs, knowledge-building programs, and community building programs (Rust et al, 2005). The ubiquitous loyalty programs are all designed to make the customer more loyal and to reward them for their continued patronage. The idea is to provide a greater value to the customer by improving relationships. Affinity programs entail that the company provide an assortments of related benefits that are valuable to the customer and make them return for more. Community building programs are designed to enhance emotional involvement with all stakeholders in the hope of building lasting relationships.

The framework proposes that engagement in marketing drivers will enhance customer perceptions about the company. The marketing effort might improve the customer's perception about the company's quality, value, image, or any other similar factor. Consequently, the customer's behavior may change by showing a higher preference to purchase from the company on the next buying occasion. In a given market with a set of competitors, a brand-switching matrix can be generated. A brand switching matrix is a two-way table that indicates which brands a sample of people purchased in one period and which brands they purchased in a subsequent period, thus highlighting the switches occurring among brands as well as the number of persons who purchased the same brand in both

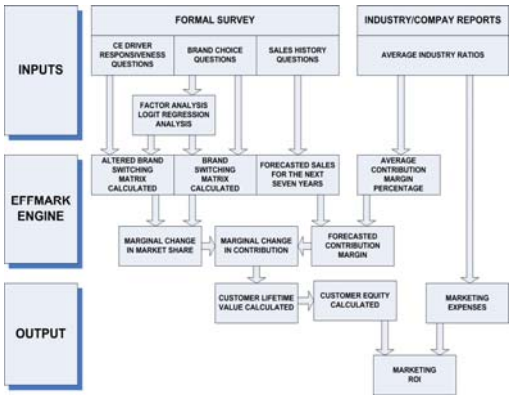
periods. Because of the marketing effort, the customer may project a different brand switching matrix that is more favorable to the company. Such changes in the brand switching can be quantified and a new revenues stream can be projected for each customer. If the cost structure of the company is known, the expected contribution margin from each individual customer can also be determined. When the expected contributions of each customer is discounted using an appropriate discount rate, the lifetime value of the customer can be determined. The sum of all the expected lifetime values of all the customers gives the customer equity of the company.

Comparing the change in customer equity with the marginal changes in marketing effort (marketing investments made) will give marketing managers the expected return on the marketing investment (Marketing ROI). The dynamic process of determining the best investment can then be achieved iteratively by applying different levels of marketing investments on the customer-equity drivers.

3. The EFFMARK Model:

The EFFMARK model is a spreadsheet decision support system that operationalizes the customer equity framework for the convention industry. Figure 3 illustrates the EFFMARK model. In order to have realistic results, the model uses input parameter values directly from a customer survey conducted especially for this project. The survey instrument consisted of four major sections, the first of which sought to elicit the brand preference information of the customers. This is achieved by asking the customers which convention center brand in the market they recently used and what the chances were of them switching to a different brand on the next purchase occasion. The second section of the instrument included a series of questions that indicate the customers' opinions about the ten equity drivers discussed in the previous section. This is achieved by having the customers mark their degree of agreement or disagreement with statements about the brands' customer equity drivers. For example, a statement about image could state, "I have a very positive image about Brand X." A 5-point Likert scale was used with 1 being Strongly Disagree and 5 being Strongly Agree.

Figure 3: The EFFMARK Model



The third section of the questionnaire sought to determine the historical purchase behavior of the customers. Customers were requested to state all the purchases they had made during the past three years from each of the convention brands. In the final section, the customers were requested to state their degree of responsiveness to fixed changes in the quantities of investments in the marketing drivers. Questions such as, "How much more likely are you to buy brand X if brand X increased its overall quality by 50%?" were used to elicit marketing effort responsiveness directly from the customers.

The brand switching matrix for each customer was easy to calculate from the brand preference data solicited in section one of the questionnaire. The probability of brand switching for a customer during any successive buying event was determined by considering the initial probabilities/share and calculating the new probability by taking into account such factors as: the customers that state that they would purchase again from the same brand, the number of customers that stated that they would switch to other brand, and finally, the number of customers that stated that they would switch from the other brand to the current brand. The functions were implemented in a spreadsheet for dynamic calculations.

Principle Component Analysis was be used to reduce the drivers to a more meaningful group that is relevant for the convention market being studied. The

altered brand switching matrix created because of investments in the drivers was modeled using multinominal logit regressions where the dependent variable was the likelihood of switching brands in the successive buying occasion, and the independent variables are the factors from the principle component analysis. The coefficients of the original independent drivers were obtained from the product of the coefficients from the logit regressions on the factors and the factor coefficients that relate the drivers to the factors (Rust et al, 2005).

Revenue was forecasted using the historic sales information solicited from the questionnaire and the changes in the brand switching matrix were determined. Estimates of the expected average contribution margin for the convention industry were used to calculate the streams of potential profits from each customer. Using a discount rate of 10%, the lifetime value of each customer was calculated by discounting five years of potential profits from each customer. The customer equity was then calculated by adding all the lifetime values of the customers. An estimate for the total population of the customers in the convention industry was made using syndicated industry reports. In the final step, the change in customer equity was compared as a percentage of the simulated marketing investment made in order to determine the return on the marketing effort.

4. Methodology:

The EFFMARK model was applied to the meeting planning industry in the current study as an example. Four major convention centers in the U.S. were identified for conducting the study. Two of the convention centers were in the south, one in the north and the other in Western United States. The convention centers were among the largest and most popular in the U.S.

The goal of the research was to apply the EFFMARK model in the hospitality industry. The research questions that were posed were as follows:

1. What are the main customer equity drivers that are relevant for the conventions industry?
2. What is the relative importance of the customer equity drivers in the conventions industry?
3. What is the relative effectiveness of the customer equity drivers in the conventions industry?

In order to develop credible customer equity drivers that can be included in the study, extensive interviews were conducted with convention industry managers to develop a list of value, brand and relationship drivers that were most critical for the industry from the managers' perspectives. The interview results were combined with relevant literature reviews to come up with the final list of customer equity drivers that could be used in the study. Table 1 shows the list of customer equity drivers solicited from the first phase of this study.

Using the list of customer equity drivers, a preliminary questionnaire was developed to solicit information from show managers of one of the convention centers in the southern U.S. The questionnaire was pilot tested for format, content, flow, and semantics before being administered on the web. The show managers' email addresses were obtained from the convention center's administrators and a request to respond to the survey was sent through their marketing office. However, because of the poor response rate, it was decided to conduct a telephone interview by making individual appointments with each potential respondent. Out of the population of 461 show managers spanning the previous five years, a total of 89 usable responses were received for a total response rate of 19.0%. The interviews were conducted during Fall of 2006.

Table 1. Initial Set of Customer Equity Drivers for the Conventions Industry

Customer Equity Drivers	Sub-Drivers	Variables
Value	Price Quality Convenience	Overall Quality Worth the Price Competitive Pricing Location Convenience Move-in, Move-Out Convenience Easy Booking Procedure Fair Prices Competitive Discounts
Brand	Brand Awareness Brand	Favorable Attitude Media Advertising Awareness

	Attitude Corporate Ethics	Information Dissemination Good Reputation High Ethical Standards Positive Image Positive Feeling
Relationship	Loyalty programs Affinity programs Knowledge Building Programs Community Building Programs	Developing Relationships Preferential Treatment Knowing Booking Procedures Knows a lot about Customers Recognize as Special Sense of Community

Data analysis involved a two-stage process. During the first phase, exploratory Factor Analysis with Varimax rotation was conducted to determine what, if any, underlying structure existed for the twenty-one measures of customer equity variables shown in Table 1. In the second phase, logit regression analysis was performed using the results of factor analysis as the independents variables. The results of the quantitative analysis (marketing responsiveness parameter values) were then input into the EFFMARK decision support model to generate the expected revenue and profits from the customers.

5. Results:

In the factor analysis, four criteria were used to determine the appropriate number of components to retain: eigenvalue (greater than one), variance, scree plot, and residuals (less than ,05). Criteria indicated that retaining five components should be investigated. Thus, Factor Analysis with Verimax rotations was used to increase the model fit by reducing the number of residuals exceeding the .05 criteria. Table 2 shows the results of the Factor Analysis.

After rotation, the first two components accounted for 21.23% and 20.79% of the total variance respectively. All five factors together accounted for 72.3% of the total variance, which is good for such analysis.

The factors from phase one were entered into a logit regression with the dependent variable indicating if the customer planned to use or switch brand on the next occasion. The dependent variable was entered as a dummy with "0" indicating a switch and a "1" indicating 'no switch.' The results of the regression are shown in Table 3. The regression results showed that the model is significant with a log likelihood of -5.58. The regression results were then input into the EFFMARK model to calculate the driver coefficient scores and the change in the customer equity given a fixed investment in the marketing driver, each taken separately. For the purpose of this research, it was assumed that the marketing expense would be $30 million over a span of seven years. This figure was arrived at by verifying the annual reports of the convention centers under study.

Figure 4 shows the change in customer equity with time for a given investment in each of the marketing drivers. The figure shows that the investment in communications has the highest increase in customer equity.

Table 2. Results of Factor Analysis

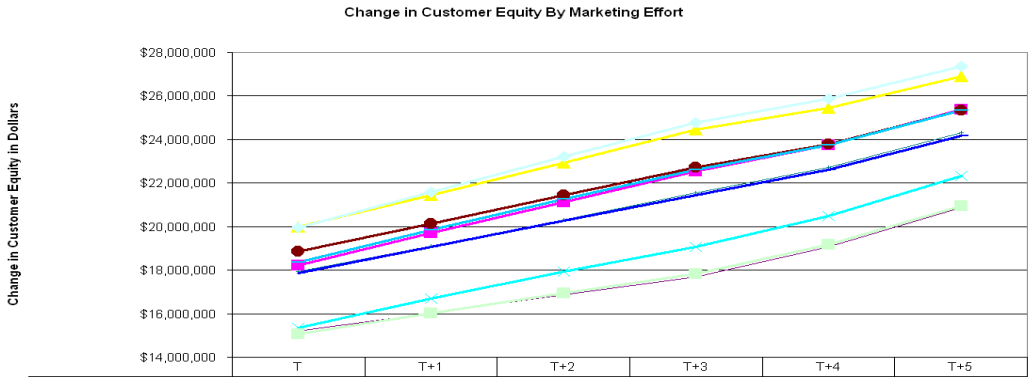
Factor	Component	Customer Equity Variable	Loadings	Variance
F1	Special Knowledge	20. The preferential treatment I get from the following convention centers is important to me.	0.899	21.23%
		19. I have invested a great deal of time developing a relationship with the staff of the following convention centers.	0.851	
		21. I know the following convention centers' sales and booking procedures well.	0.851	
		23. The following convention centers recognize me as being special.	0.760	
		22. The following convention centers know a lot about the type of shows I book.	0.745	
F2	Relationship Effort	18. I have positive feelings toward the following convention center.	0.890	20.79%
		17. The image of the following convention centers fit my event's purpose well.	0.750	
		16. The following convention centers have high ethical standards with respect to its customers and employees.	0.706	
		12. I have an extremely favorable attitude toward the following convention center.	0.671	
		15. The following convention center has a good reputation in this industry.	0.670	
F3	Price and value	6. The following convention centers provide a very competitive pricing structure.	0.832	14.31%
		11. The following convention centers provide extremely competitive discounts.	0.782	
		10. The following convention center's prices are extremely fair compared to other convention centers.	0.777	
		5. The quality of the following convention centers is well worth the price paid.	0.662	
F4	Information Dessimination	13. I often notice and pay attention to the following convention centers' media advertising in trade journals.	0.878	9.22%
		14. I often notice and pay close attention to the information the following convention centers send out.	0.851	
F5	Location	7. The following convention center's location is extremely convenient.	0.919	6.75%
			Total:	72.30%

Table 3. Logit Regression Results

Factor	Beta	Sig	
F1	0.2348	0.319	
F2	0.4638	0.041	**
F3	0.1508	0.513	
F4	0.4022	0.041	**
F5	0.4229	0.049	***

* $p < 0.05$; Log likelihood: -5.58; Sample size (n): 89

Figure 4: Change in Customer Equity by Driver



	T	T+1	T+2	T+3	T+4	T+5
Overall SQ	$18,209,274	$19,719,447	$21,133,006	$22,533,770	$23,752,311	$25,393,578
Perceived Value	$19,975,036	$21,437,841	$22,943,154	$24,444,558	$25,456,191	$26,899,237
Convenience Offered	$15,362,621	$16,686,191	$17,926,819	$19,058,728	$20,502,495	$22,342,319
Overall Image	$15,206,157	$16,030,602	$16,877,365	$17,701,168	$19,057,753	$20,863,836
Overall Reputation	$18,848,040	$20,138,587	$21,437,028	$22,712,430	$23,793,818	$25,325,523
Rewards Offered	$17,927,823	$19,115,271	$20,316,275	$21,543,094	$22,707,968	$24,312,631
Specially Recogition You	$17,868,666	$19,051,828	$20,257,171	$21,456,476	$22,596,292	$24,162,069
Build Relationships	$18,375,462	$19,847,367	$21,264,817	$22,613,329	$23,759,606	$25,324,888
Enhance Communications	$19,952,016	$21,594,607	$23,208,521	$24,792,087	$25,860,544	$27,359,109
Share Knowledge	$15,079,654	$16,023,158	$16,938,191	$17,824,013	$19,174,493	$20,945,833

Table 4. Marketing Effectiveness

Driver	CE	CE Index	ROI
No Marketing Effort	$ 105,320,868		
Overall SQ	$ 130,741,386	124	84.74%
Perceived Value	$ 141,156,017	134	119.45%
Convenience Offered	$ 111,879,172	106	21.86%
Overall Image	$ 105,736,881	100	1.39%
Overall Reputation	$ 132,255,428	126	89.78%
Rewards Offered	$ 125,923,062	120	68.67%
Special Recognition	$ 125,392,501	119	66.91%
Build Relationships	$ 131,185,468	125	86.22%
Enhance Communications	$ 142,766,884	136	124.82%
Share Knowledge	$ 105,985,343	101	2.21%

Table 4 shows a summary of the EFFMARK results. On the question whether all the drivers are critical in the conventon business, the research reveals that the ten drivers listed are most critical out of the total of twenty-one initially considered in the study. The Customer Equity Index Score shows that investment in communications will yield a 36% greater increase in customer equity compared to an unfocused marketing investment. The return on marketing investment will consequrently be highest for communication with an expected return of about 124%.

Conclusions:

This paper applied the customer equity framework to the conventions industry to gain a clearer understanding of the underlying customer equity drivers. Although the established CE drivers of Values, Relationship, and Brand, have been confirmed in many industries through other research, the Convention and Meeting Planning Industry has been found to have a different profile of CE drivers that included: Special Knowledge, Relationship Effort, Price and Value, Information Dissemination, and Location. Awareness of the convention industry-specific knowledge, such as the booking and event planning procedures, along with being treated as a special customer accounted for about 22% of the variance in marketing effectiveness. Another 20% of the variance in the marketing effectiveness is accounted for by building long-term relationships with the customers through intimate knowledge about the type of shows and events they organize. The event managers seem to be more interested in customized services for continued patronage of the convention services. Since the variety of events that are organized by the event managers are different, the need for customization is perennial in this industry. In addition, the demands put on the event

managers by their own customers also contribute to the magnification of the need for customizing each event with the help of the convention administrators.

Contrary to conventional wisdom, this research showed that the return on marketing effort was best obtained by focusing on developing enhanced communications with the show managers. Since event management's success depends on dynamically managing effective communications with all major stakeholders during a live event, the show managers seem to focus more on this driver for the purpose of distinguishing themselves from the competition and consequently think the return on any such investments would be most effective. Next to enhancing communications, the show managers are concerned with price-value relationships similar to managers in other industries.

This is the first research paper that applies the customer equity concept to the convention and meeting planning industry. It demonstrates the application of the model and provides paractical application by developing a user-friendly computer model that nay manager in the convention and meeting planning industry can use. It is hoped that this paper will stimulate a stream of research in the customer equity area in the convention indusrty.

References

Aaker, D.A. (1996). *Building Strong Brands*. New York: The Free Press.

Berger, Paul D., & Nada I. Nasr (1998), Customer Lifetime Value: Marketing Models and Applications, *Journal of Interactive Marketing, 12* (Winter), 17-30.

Berger, P.D., Eechambadi, N., George, M., Lehmann, D.R., Rizley, R., & Venkatesan, R. (2006). From customer lifetime value to shareholder value: theory, empirical evidence, and issues for future research. *Journal of Service Research, 9*(2), 156-167.

Blattberg, Robert C., & John Deighton (1996), Manage Marketing by the Customer Equity Test, *Harvard Business Review, 74* (July-August), 136-144.

Blumental, D., & Bergstrom, A.J. (2003). Brand councils that care: towards the convergence of branding and corporate social responsibility. *Brand Management, 10*(4-5), 327-341.

Gupta, S., Lehmann, D.R., & Stuart, J.A. (2004). Valuing customers. *Journal of Marketing Research, 41*(1), 7-18.

Keller, K.L. (2003). Strategic brand management: Building, measuring, and managing brand equity. Upper Saddle River, NJ: Prientic-Hall.

Lassar, W., Mittal, B., & Sharma, A. (1995). Measuring customer-based brand equity. Journal of Consumer Marketing, 12(4), 11-19.

Motameni, R., & Shahrokhi, M. (1998). Brand equity valuation: a global perspective. *Journal of Product & Brand Management, 7*(4), 275-290.

Mulhern, Francis J. (1999), Customer Profitability Analysis: Measurement, Concentration, and Research Directions, *Journal of Interactive Marketing, 13* (Winter), 25-40.

Park, C.S., & Srinivasan, V. (1994). A survey-based method for measuring & understanding brand equity & its extendibility, *Journal of Marketing Research, 31*(2), 271-288.

Reinartz, Werner (1999), Customer Lifetime Value: An Integrated Empirical Framework for Measurement, Antecedents, and Consequences, doctoral dissertation, University of Houston.

Rust, R.T., Lemon, K.N., & Zeithaml, V.A. (2004). Return on marketing: using customer equity to focus marketing strategy. *Journal of Marketing, 68*(1), 109-127.

Rust, Roland T., Valarie A. Zeithaml, & Katherine N. Lemon (2000), Driving Customer Equity: How Customer Lifetime Value Is Reshaping Corporate Strategy, The Free Press.

Simon, C.J., & Sullivan, M.W. (1993). The measurement & determinants of brand equity: a financial approach. *Marketing Science, 12*(1), 28-52.

Srivastava, R.K., Shervani, T.A., & Fahey, L. (1998). Market-based assets and shareholder value: a framework for analysis. *Journal of Marketing, 62*(1), 2-18.

Storbacka, Kaj (1994), The Nature of Customer Relationship Profitability, Swedish School of Economics and Business Administration.

Yoo, B., & Donthu, N. (2001). Developing & validating a multidimensional consumer based brand equity scale. *Journal of Business Research, 52*, 1-14.

Wiesel, T., & Skiera, B. (2005). Linking Customer Metrics to Shareholder Value. Johann Wolfgang Goethe University, Frankfurt, Germany.

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Organizational Forms and Agency Costs

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bonding expenditures

ABSTRACT

An agency relationship is found whenever one or more persons engage another person to undertake some service on his/their behalf. Positive agency theory seeks to explain patterns that characterize for instance, industrial or organizational forms and other contractual relations. The paper deals with a firm's choice of organizational form, building on agency cost arguments to explain why a certain type of organization form is observed.

I. Introduction

Economic literature is replete with studies and research on agency problems and capital structure choice and on the financial choices that a firm faces. It was Jensen and Meckling (1976) who formalized the agency problem in the context of the firm and defined the agency relationship as a contract between a principal and an agent.[1] They defined agency costs as the sum of monitoring expenses, bonding expenditures and a residual loss since contracts cannot always be perfectly written and enforced. Jensen and Meckling's paper, as well as several others, were in response to Modigliani and Miller's (1958) proposition that a firm's capital structure policy is of no consequence to its market valuation under perfect market conditions.

Fama and Jensen (1983a, 1983b, 1985) published a paper on the nature of residual claims, investment decisions, and the agency costs of the separation of decision and risk-bearing functions (or the separation of ownership and control). In these papers, they looked into the agency costs under alternative organizational forms.

The economic theory of agency focuses on the relationship between a principal who engages an agent to undertake some services on his behalf. The principal provides capital, in the process becoming a residual claimant with a claim on the end-of-period value of the firm. The financial theory of agency as an application of the economic theory focuses on the relationship between different groups of security holders, e.g., equity and bondholders in the context of optimal financing for the firm. Agency problems may thus be classified based on their origin, e.g., partial or concentrated ownership of the firm by owner-managers or the financial asset, i.e., debt or equity, that is subject to a particular agency problem.

1 Agency theory can be said to have originated from Coase (1937) who looked at the firm as a legal relationship between master and servant. The servant has the duty of performing personal services for the master or for others on behalf of the master while the master has the right to monitor the servant's behavior, either by himself or by another servant.

The agency relationship is premised on two behavioral assumptions: (I) all individuals choose actions to maximize their welfare and (ii) since all individuals are rational, they are assumed to be capable of forming unbiased expectations about the impact of agency problems on the future value of their wealth. Principals are aware of the self-interest motivation of agents and will anticipate that future decisions to be made by the agents will be based on their interests.

Fama and Jensen's (1983b) paper on the nature of residual claims is an example on the use of positive agency theory to account for the organizational forms of different firms. Their explanation using agency costs helps explain the variation in contractual forms across organizations in different activities.

The objectives of the paper are: to summarize the features of the major types of organizational forms and to identify the various agency problems that may arise in each form, to expound on the theory on the choice of organizational form and to propose a methodology to empirically explain the choice of organizational form of Philippine firms based on this theory and the agency problems of Fama and Jensen.[2]

II. Typology of Organizational Forms

Fama and Jensen (1983b) argue that the organization that survives is the form that delivers the product or service demanded at the lowest price while covering costs, including agency costs. They argued that the nature of residual claims and the kind of decision system that firms employ can account for the survival of different organizational forms. Based on this, they present the following typology of organizational forms:

- Open Corporations
- Partnerships
- Professional Partnerships
- Financial Mutuals
- Non-profit Organizations
- Closed Corporations

Open Corporations[3]

The role of stockholders in an open corporation is basically passive; the emphasis being placed on the investment function as provider of capital. Furthermore, the common stock residual claims of publicly-listed corporations are relatively unrestricted in nature; hence, the claims are freely alienable, i.e., shareholders can dispose of their shares without having to get approval from someone. These twin features of common stock residual claims thus allow for unrestricted risk sharing among stockholders. Likewise, there is a complete separation of decision functions and residual risk-bearing. Managers can take care of the initiation and implementation of ratified decisions while shareholders, aside from ratifying those decisions, also monitor performance.

The activities of open corporations are typically complicated, involving contracts with many agents and factors of production. While common stock residual claims have the advantage of unrestricted risk-sharing among the claimants, the unrestricted nature of the claims gives rise to an agency problem of separation of residual risk-bearing from decision functions. Professional managers who have little or no ownership in the firm run the organization and make decisions which may be not in the best interests of the residual claimants or are not consistent with both shareholder's or bondholder's interests.

Open corporations are mostly found in the manufacturing, mining, construction, public utilities and transportation industries where the benefits of unrestricted risk sharing and specialized management are great.

2 A possible extension of the paper is to look at the choice of financing mode by firms. It could examine not only whether new funds are in the form of debt or equity, but also whether funds are publicly or privately raised.

3 I define open corporations throughout this paper as corporations that are listed in the exchanges or have gone public by listing their shares.

Proprietorships/Partnerships/Professional Partnerships

In terms of the number of residual claimants, proprietorships have a single residual claimant while partnerships and professional partnerships have multiple residual claimants. However, in specifying the rights to the organization's net cash flows and to control whatever agency problems may arise, the residual claims are largely restricted to important decision agents. This restriction allows these forms of organizations to control if not avoid the agency problems arising from the separation of risk-bearing and decision functions; the decision process at the same time, however, suffers efficiency losses since decision agents are chosen on the basis of their wealth and willingness to bear risk and not decision skills.

Like proprietorships and partnerships, the residual claims in professional partnerships are limited to important decision agents, but a partner's share in the net cash flows are oftentimes limited to his length of service in the organization. Moreover, this share is generally renegotiated annually based on past performance and estimates of likely contributions to the firm's future net cash flows. This is done to minimize if not to altogether dispense with the temptation on the part of the partner to free-rise on the efforts of his colleagues.

Since a partner brings a depleting asset to the partnership – human capital, the shares in net cash flows reflect the current and expected future contributions of the human capital, and when this human capital is withdrawn or used up, contributions to net cash flows stop and thus the partner's residual claim is terminated.

Professional partnerships are predominant in the medical, accounting, consulting and legal professions where the value of human capital is most sensitive to performance.

Financial Mutuals

The residual claimants of financial mutuals are its customers, e.g., depositors of mutual savings banks and the shareholders of mutual funds. The claims are redeemable on demand at a price set by a prespecified rule. Since claimants can withdraw their claims anytime, the assets of financial mutuals are not organization specific and can be traded with low transaction costs. When claimholders withdraw their claims, this action deprives management of control over the assets and is a form of partial takeover or liquidation. Policyholders, depositors, and mutual fund shareholders do not usually participate in the internal decision-making process; there is separation of decision management and control functions.

Mutuals are found mostly in organizations that deal with investment funds or the management of portfolios of financial assets, e.g., mutual insurance companies and mutual savings banks.

Non-profit Organizations

The term non-profit does not imply that this type of organization does not make profits. It only means that alienable rights or claims to profits do not exist in this form of organization. This is so because non-profits are found mostly in donor-financed activities where donors forgo on their rights to the net cash flows of the organization. Thus, non-profit organizations are found among groups involved in cultural, educational, religious, and health-related undertakings, among others, which are mostly funded by contributions from generous members of society.

The decision system in non-profits is characterized by the separation of decision management and residual risk-bearing. This separation assures donors that the donations they have given are used properly and are not easily expropriated by the organization's management. The predominance of non-profits in donor funded activities serves as a solution to the agency problem posed by private donations.

Closed Corporations[4]

Like professional partnerships, closed corporations have multiple residual claimants. Moreover, the restriction of claims to important decision agents gives rise to concentrated decision systems. The major

4 Closed corporations are defined throughout the paper as corporations that are not listed in the exchanges and therefore remain privately-held.

decision makers are also the major residual risk bearers. Thus, just like professional partnerships, privately-held corporations, by combining decision management and decision control in a few decision agents, avoid the costly mechanisms for separating management and control of business, but at the same time forgo the benefits of unrestricted common stock. Once more, decision agents are chosen on the basis of wealth and willingness to bear risks, and not on the basis of their managerial and decision skills. Optimal portfolio diversification is sacrificed when risk taking and decision making functions are combined in a small number of agents. The value of the residual claims in closed corporations are typically lower than those of open or publicly-listed corporations because of the restrictive features of these claims, such as non-transferability for some period of time.

Both closed and open corporations are limited-liability companies. It denotes an incorporated group of persons with property and powers as well as liabilities separate and distinct from those of its members. These companies are legally separate from the individuals who work for them. They can enter into legal relations, make contracts, sue and be sued by shareholders or employees or the public at large.

Table 1 documents the main features of the organizational forms and highlights their differences in terms of the nature of their residual claims, activity, ownership /control features, and monitoring systems. For instance, in terms of the nature of assets, open corporations employ relatively more specific assets, which are hard to trade, while the assets of financial mutuals can be traded with low transaction costs since these assets are not organization specific. On the other hand, the primary asset of professional partnerships is human capital. Thus, professional partnerships benefit from mutual monitoring by peers and decision agents in as much as the value of human capital is sensitive to performance. Publicly-held corporations can be targeted for unfriendly takeovers while closed corporations and non-profit organizations are generally immune from such attempts due to the nature of their residual claims.

III. Agency Problems[5]

Agency problems arise when conflicts of interest between or among principals and agents affect the operation of the firm. Agency problems considered in the literature look at the relationships between different groups of financial claimholders, i.e., equity or bondholders.

There is conflict associated with equity capital between the majority owner and external shareholders. Debt capital also causes conflicts between bondholders and stockholders. Outside shareholders are concerned with consumption of on the job perquisites by the entrepreneur/manager while bondholders are concerned with the expropriation of their wealth by stockholders/entrepreneurs who may want to assume unwarranted risks, forgo profitable investment opportunities and engage in costly bankruptcy proceedings.[6]

Excessive Perk Consumption

Excessive perquisite consumption arises when a firm has no sole owner. When a firm has a sole owner, the costs associated with perquisite consumption are borne solely by the individual. However, once a fraction of the firm's shares are sold to outsiders, the owner-manager shoulders only a fraction of the costs but enjoys the full benefits of the consumption. Excessive perquisite consumption is an agency problem because perquisite consumption is equivalent to shirking.

The loss of value or the decline in utility due to excessive perquisite consumption becomes larger as more outside capital is required to finance the firm, i.e., agency costs of equity associated with excessive perk consumption by owner-mangers increase as the owner-manager's fraction of total equity falls. As sole owner, the manager has an optimal combination of perquisite consumption and wealth. With the sale of common stock

5 This section is condensed from Barnea, Haugen and Senbet, c. 1985.

6 Throughout the paper, inside equity is defined as equity held by the owner-manager/entrepreneur. Outside equity refers to the equity contributed by shareholders who have no other role except that of providers of capital.

to outsiders, the manager is left with a combination of benefits and consumption perquisites that is undesirable relative to the optimal combination.

The Incentive to Bear Unwarranted Risk

Shareholders in a firm with an outstanding debt can be regarded as holders of a European call option[7] to buy back the bonds at a price equal to the face value of the debt if the firm's value exceeds the face value of the debt. Thus, shareholders of a firm with an outstanding debt have an incentive to invest in excessively risky projects in order to expropriate wealth from the bondholders because the value of the call option, i.e., the value of the firm rises with an increase in the variance of its cash flows. Agency costs of debt related with risk incentives may thus result from the decrease in firm value which is caused by investing in more risky projects.

The incentive to bear unwarranted risk becomes an agency problem when the firm is partly financed with debt capital. Shareholders may engage in high risk activities that transfer wealth from the bondholders to shareholders, a practice known as asset substitution and which results in lower firm value. If bondholders are rational and anticipate the risk-shifting, they will offer a price for the bonds which reflects the distribution of wealth given adoption of the high variance project, resulting in a decline in firm value (due to a lower share price) which is borne by shareholders.

Stockholders are primarily concerned with the upper part of the probability distribution of possible performance outcomes, i.e., over and above the amount required to repay debt while bondholders are concerned with only the lower end of the probability distribution of outcomes or the specified payment in the debt contract. Riskier projects can reduce the expected pay-offs to bondholders and when bondholders see the incentive of stockholders to take on projects that are riskier than what the bondholders prefer, bondholders will charge a higher price for debt capital (Balakrishnan and Fox, 1993).

The Incentive to Forgo Profitable Investments

An agency problem arises when stockholders forgo on new profitable investments because of previously issued risky debt. The value of the firm is reduced when bondholders factor into the price of the bonds they will offer to the public the increased likelihood of default. The decline in firm value is an agency cost of debt due to forgone profitable investments.

In the absence of debt financing, the firm accepts any investment for which the market value net of the required investment is positive, or if the present value of the expected cash flows from the project exceeds the required investment. However, if there is an outstanding risky debt, stockholders maximize their wealth only if the market value of the investment exceeds the debt obligation. Otherwise, if the market value of the investment is less than the amount of the outstanding debt, shareholders are better off if they default. The presence of an outstanding risky debt which will mature after the true nature of growth opportunities is revealed may lead the firm's management to abandon an investment with positive net market value which is less than the face value of the debt.

The Agency Problem of Informational Asymmetry

In many cases, management possesses information that is unavailable to the market. Suppose a firm seeks to finance a project by selling securities. The true nature of the return distribution is known by management but not by the outside market. If this information were revealed to the market without ambiguity, the market would value the project at V_A. Otherwise, the market will remain unable to distinguish the project from another less profitable project with a value V_B.

The asymmetry in information may be resolved with signaling mechanisms, but without an unambiguous signal, management will not be able to get the "fair value" for its securities as reflected in the true nature of project A. The difference between the "fair price" and the actual

7 A European call option gives its holder the right to purchase a share of stock with current price S, at an exercise price X on an expiration date T periods from now. The call option owner will exercise the right to buy only if it is to his advantage, i.e., when the stock price is greater than the exercise price.

price is an agency cost of equity and this difference exists as well in the issuance of debt securities. Stockholders suffer a loss at the time of sale of the securities because of an agency cost of debt or equity due to information asymmetry.

Agency Costs Arising From Bankruptcy Problems

Bankruptcy problems arise with increased resort to debt capital by the firm. If the transfer of ownership from stockholders to bondholders under bankruptcy proceedings is costless, there should be no agency problem. However, because it is impossible to write contracts which clearly specify the rights of claimholders under all events, one or more of the parties may initiate a dispute that may only be resolved in formal bankruptcy proceedings. Bankruptcy proceedings are costly; they involve a legal process which consumes a portion of the remaining value of the firm's assets. The formal process of transferring ownership may also disrupt the firm's day-to-day activities, affecting long-standing customer and supplier relationships. Bankruptcy costs are borne by the firm's shareholders if the firm's debt is sold to rational investors who discount it in the price they offer for the firm's securities.

Resolving Agency Problems

An efficient operation of both financial and labor markets can greatly reduce the agency problems mentioned in the previous section. Furthermore, complex financial contractual arrangements such as convertible securities can mitigate the unresolved agency problems. However, any remaining residual agency problems, which are unresolved by either the marketplace or financial contracting are manifested in the reduction in the value of financial securities which give rise to offsetting costs against the benefits of external financing. A trade-off situation then leads to an optimal corporate financial arrangement.

The different agency problems of risk shifting, foregone growth opportunities, information asymmetry, and excessive perquisite consumption exist simultaneously, thus calling for the coexistence of various complex features in financial contracts. This reasoning is the rationale for the existence of complex capital structures consisting not only of straight debt or equity capital, but of structures combining debt/equity features in the same financial instrument.

The issuance of convertible debt or warrants can reduce a manager's incentives to engage in risky investment. Since they have a right to convert their debt claims, warrant and convertible debt holders can share in a shift in wealth from bondholders to stockholders arising from investments in risky projects. Likewise, the agency problems caused by excessive perquisite consumption can be alleviated by issuing managerial stock options or convertible debt. Managerial stock options can reduce a manager's incentive of excessive perquisite consumption if it aligns the interests of the owner-manager with those of external shareholders. Risky debt contracts with the right of conversion into stock claims can also overcome the manager's incentive to appropriate perquisites since it forces the owner-manager to hold a fraction of the convertible debt. Another possible solution to the risk incentive problem is the design of a call price such that the change in equity value is exactly offset by the change in the value of the call privilege. The risk incentive problem may also be reduced by shortening the debt maturity because the value of the shorter term debt is less sensitive to a shift into high risk investments.

IV. Modeling the Choice of Organizational Form

Agency problems, whether they are of debt or equity, can be found in any organization. While the nature of residual claims, the kind of decision system and organizational structure employed by the firm may help lessen the scope of these problems, the potential for agency conflicts still exists. The potential for and the nature of agency problems is linked to the characteristics of the firm. Therefore, firms that are similar or operating under comparable environments will likely have the same nature and maybe even degree of agency problems,

while firms that are totally distinct may be expected to have different agency problems in different degrees.

Following an inductive method of developing theories, the paper first presents a list of the variables or characteristics which typify two organizational forms: open and closed corporations. These characteristics may also be called "stylized facts" in the sense that they describe persistent features of patterns which have been observed to obtain over time. Aside from describing an organizational form, these clusters of characteristics are also assumed to be indicative of the potential for agency conflicts.

The major characteristics that may indicate the potential for agency conflicts are: industry or activity, firm size, firm structure, managerial ownership, business risk, research and development expenditures, amount of fixed assets, depreciation rate, and leverage. These variables capture the components of potential agency conflicts such as ease and cost of monitoring, probability of shirking, presence of growth opportunities, and riskiness of cash flows.

Industry or Activity: Open corporations are mostly found in industries with relatively more complicated production technologies employing several factors of production, whereas closed corporations are predominant in small-scale production and in the service industries, especially family managed businesses.

Firm Size: Open corporations by virtue of their having multiple unrestricted claimants are bigger than closed corporations. They employ more employees and have a bigger asset base. Smaller-sized firms have higher monitoring costs relative to bigger-sized firms.

Firm Structure – Since agency problems come about when there is information asymmetry and when individuals act opportunistically, minimizing agency costs requires improvements both in the flow of information and the mitigation of opportunistic behavior. The M-form structure is more likely to be found among open corporations while the U-form structure will be more commonly observed among closed corporations. Open corporations are better able to control agency problems if they adopt a unitary form of structure since decision-making is centralized and tight control is imposed on daily activities. Closed corporations are able to take advantage of reduced communication and bureaucratic costs if they adopt an M-form structure.

In the U-form structure, a clear line of authority or managerial hierarchy originates or emanates from the top. The principal operating or functional units of the firm all report to the chief executive. Decision-making is centralized and information flows are of the top-down nature. Data are summarized from the top and instructions are operationalized from the top too. Thus, the U-form structure is best suited to organizations engaged in activities where tight control must be imposed on day-to-day operations. Furthermore, organizations with a U-form structure are organized around business functions, none of which can conduct an entire business independently.

The multidivisional or M-form operates with considerable managerial independence, especially in terms of day-to-day decision making. Adopting the M-form, which consists of partially diversified business divisions, speeds up decision making and reduces bureaucracy. The M-form structure is based on the principle of decomposition. An extreme example of this kind of set-up is the holding company which is a decentralized collection of entirely separate firms under common ownership. Senior management and a support staff coordinate and oversee the activities of the subsidiary companies. Each of the subsidiaries is treated as a profit or investment center and a general manager is given responsibility for each center.

Managerial Ownership – The percentage of managerial ownership is higher among closed corporations relative to open corporations. We expect this to be so because residual claims are restricted to important decision-makers.

Business Risk: Although it is tempting to say that because open corporations contract with many factors of production and employ a more complicated production

process, they are riskier ventures than closed corporations and face more severe agency problems, the strength of the positive correlation between business risk and different forms of organization is indeterminate. Among closed corporations, there is a need to spread the risks among the different principals who have contributed equity capital to the firm and at the same time, there is a need to monitor management. It is more costly for external investors to monitor a firm, hence making for higher value to insider ownership. A proxy measure of business risk is the stability of earnings.

Amount of Fixed Assets: Fixed assets are assumed easier to monitor than intangible assets. Bondholders and equity holders can monitor more cheaply those firms with a large proportion of fixed assets in their balance sheets for changes in investment policy. Hence, firms with a large amount of fixed assets would have lower costs of debt relative to equity and would have an easier time financing these assets with debt. A high proportion of intangible assets, meanwhile, increases management's flexibility with respect to investment policy decisions, making for greater monitoring costs for bondholders and other residual claimants.

Research and Development Expenditures: Research and development expenditures proxy for future investment or growth opportunities. A company with large expenditures on R & D should encounter relatively more future investment opportunities and therefore face greater possibilities for the agency problem of underinvestment to occur as well as greater opportunities to bear unwarranted risk.

Leverage: The more leveraged a firm is, the greater the potential for the agency costs of debt and the threat of bankruptcy. All organizational forms can undertake debt financing and are therefore potentially subject to the risk to bear unwarranted risks, forgoing profitable investments, and the agency costs generated by bankruptcy proceedings.

Depreciation Rate: The economic life or the depreciation rate of an asset indicates the potential for asset substitution; the possibility of a wealth transfer through asset substitution is greater if a firm's assets are short term in nature. This greater possibility of risk shifting implies larger monitoring costs for the firm's shareholders and bondholders.

We adopt an agency cost framework within a profit-maximizing environment to explain the choice of organizational form by firms; i.e., the firms explicitly take into account the agency costs they generate. Thus, firms are thought of as facing the following profit maximizing equation:

$\pi^{OC,CC}$ = Max TR - TC (inclusive of agency costs of debt and equity)

Agency costs arising from the use of equity or debt are reflected in the declines in the price of the equity share or debt instrument. The difference in the value of the equity share or debt instrument following an equity or debt offering is due to the reduced price that rational shareholders or bondholders are willing to pay for the share or debt instrument after they factor in the increased probability of shirking, asset substitution, information asymmetry, et.al.

Thus, in their choice of the type of organization, the firms organize themselves either as open or closed depending on which form gives them the highest level of profits or conversely, the lowest level of costs, net of agency costs. Because of the categorical nature of the dependent variable, we can use logistic regression to find out which of the characteristics with the potential to indicate or proxy for agency conflicts are most important in defining the firm's organizational form.

Data will be sourced from the audited financial statements submitted to the Philippine Securities and Exchange Commission, company annual reports, various publications of the Philippine Stock Exchange. The independent variables are defined as follows:

Shares: percentage of common shares held directly by officers and directors

Industry: a dummy variable of 0 for firms engaged in agriculture, manufacturing, mining, construction, utilities and the regulated industries and 1 for community, social and personal services and trade industries

Fixed Assets: ratio of fixed assets over total assets

Business Risk: first difference in earnings before interest and taxes scaled by total assets

R & D: research and development expenditures over total sales

Leverage: total debt scaled by total assets

Depreciation: depreciation expense over net fixed assets

Size: a dummy variable of 0 for firms with assets of at least Php 1 billion and 1 for firms with assets of less than Php 1 billion

Structure: an index of organizational complexity, a dummy variable of 0 for firms with a multi-divisional structure and 1 for firms with a unitary structure

A previous study (using 1990-1991 data) conducted found that business risk and leverage were significant predictors. When an interaction term (fixed assets * depreciation) is added, size becomes significant. All three variables have a positive impact on the odds of being a privately-held corporation than being an open corporation. These findings echo the conclusions of Demsetz and Lehn (1985), Bergstrom and Rydqvist (1990) and Jensen, Solberg and Zorn (1992) in their studies on ownership concentration. Firm size affects ownership concentration in a negative manner since the controlling shareholder's wealth (and managerial risk aversion) serves as constraint in increasing or maintaining ownership concentration in the firm. The significance of leverage for closed corporations may be due to the potential high costs of outside equity and the desire to maintain corporate control. Privately-held firms incur more debt, probably because the cost of raising outside equity is too prohibitive for the smaller closed corporation. In addition, incurring more debt shares does not alter the firm's ownership structure because debt is an instrument that must be repaid at a stated time and at agreed upon terms. Firm size, leverage and risk also influence the probability of the firm incurring agency costs of debt, problems of asset substitution, information asymmetry, and the risk of rejecting profitable investments.

V. Conclusion

The agency relationship is pervasive in business. Firms, workers, suppliers, and consumers struggle to deal with the problems that continually arise in an agency relationship. Overtime, organizations and practices have developed to deal with these problems but the challenge in structuring the agency relationship still remains to be how to minimize agency costs. Agency problems have shaped financial decisions and management structures. The nature and magnitude of agency costs that a firm faces help account for the variety and mix of structures and practices that have evolved and at the same time, these structures and practices help solve, reduce or mitigate the conflicting interests among the personalities in the firm.

References

Balakrishnan, S. and I. Fox. 1993. “Asset Specificity, Firm Heterogeneity and Capital Structure.” *Strategic Management Journal*. 14(1) 3-16.

Barnea, A., R. Haugen and L. Senbet. c. 1985. *Agency Problems and Financial Contracting*. New Jersey: Prentice-Hall, Inc.

Bergstrom, C. and K. Rydqvist. 1990. “The Determinants of Corporate Ownership: An Empirical Study on Swedish Data.” *Journal of Banking and Finance*. 14(2 and 3) 237-253.

Coase, R. 1937. “The Nature of the Firm.” *Economica*. 4(16) 386-405.

Demsetz, H. and K. Lehn. 1985. "The Structure of Corporate Ownership: Causes and Consequences." *Journal of Political Economy*. 93 (6) 1155-1177.

Fama, E. and M. Jensen. 1985. "Organizational Forms and Investment Decisions." *Journal of Law & Economics*. 14(1) 101-119.

Fama, E. and M. Jensen. 1983a. "Agency Problems and Residual Claims." *Journal of Law & Economics*. 26(2) 327-349.

Fama, E. and M. Jensen. 1983b. "Separation of Ownership and Control." *Journal of Law & Economics*. 26(2) 301-325.

Jensen, M. and W. Meckling. 1976. "Theory of the Firm: Managerial Behavior, Agency Theory and Ownership Structure." *Journal of Financial Economics*. 3(4) 305-360.

Jensen, M., D. Solberg and T. Zorn. 1992. "Simultaneous Determination of Insider Ownership, Debt and Dividend Policies." *Journal of Financial and Quantitative Analysis*. 27(2) 247-263.

Modigliani, F. and M. Miller. 1958. "The Cost of Capital, Corporate Finance and the Theory of Investment." American Economic Review. 48(3) 261-297.

Table 1. Features of Organizational Forms

Organizational Form	Nature of Residual Claims	Nature of Activity/Assets	Ownership and Control
Open Corporations	multiple residual claimants relatively unrestricted claims	engaged in "complex" activities knowledge is diffused among agents employs many factors of production uses organization specific assets assets are expensive to trade and generate uncertain future net cash flows	management is specialized management and control are separate functions managerial skills are not tied to wealth or willingness to bear risk makes use of decision hierarchies
Partnerships Proprietorships Professional Partnerships Closed Corporations	claims are restricted to selected agents in the case of professional partnerships, claims are for a limited horizon and tied to performance	professional partnerships work in teams and primary asset is professional human capital	major decision makers are also the major residual risk bearers management and control functions are in the same agents in professional partnerships, control takes place within the teams (in the hands of important team members)
Financial Mutuals	customers are residual claimants claims are redeemable on demand	assets are not organization specific assets can be traded with low cost assets are primarily securities of other organizations	separate management and control of decisions customers do not participate in internal decision process
Non-profit organizations	no alienable residual claims claims are redeemable on demand	output is difficult to measure	separation of management and control assures donations are used effectively

Organizational Form	Monitoring	Other Features
Open Corporations	uses accounting and budgeting systems employs internal and external auditors market for takeover exists the stock market prices the stock and transfers them at low cost Board of Directors has inside and outside members	likely to be found where: benefits of unrestricted risk sharing is great benefits of specialized management is great and the costs of separating decision processes is low amount of organization specific asset to be purchased is huge wealth needed to bond contractual payoffs is great
Partnerships Proprietorships Professional Partnerships Closed Corporations	professional partnerships benefit from mutual monitoring by peers since the value of human capital is sensitive to performance the restriction of claims to selected agents substitute for control devices Board of Directors in professional partnerships are composed entirely of partners unfriendly outside takeovers are not possible	survive in activities where costs of specialized decision processes are high professional partnerships are found in legal, accounting, and consulting businesses dominate in activities where technology does not involve economies of scale that lead to specialized decision skills and specialized risk bearing among the residual claimants
Financial Mutuals	Board of Directors has a reduced role because of diffuse decision inherent in holders of redeemable residual claims	dominant among investment funds or the management of financial assets likely to survive in activities with low costs of expanding and contracting assets
Non-profit organizations	immune from takeover by outside agents Board of Directors/Trustees composed of internal agents and donors	Dominant in donor-financed activities

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Foreign Direct Investment - Trade Linkage in the Philippines

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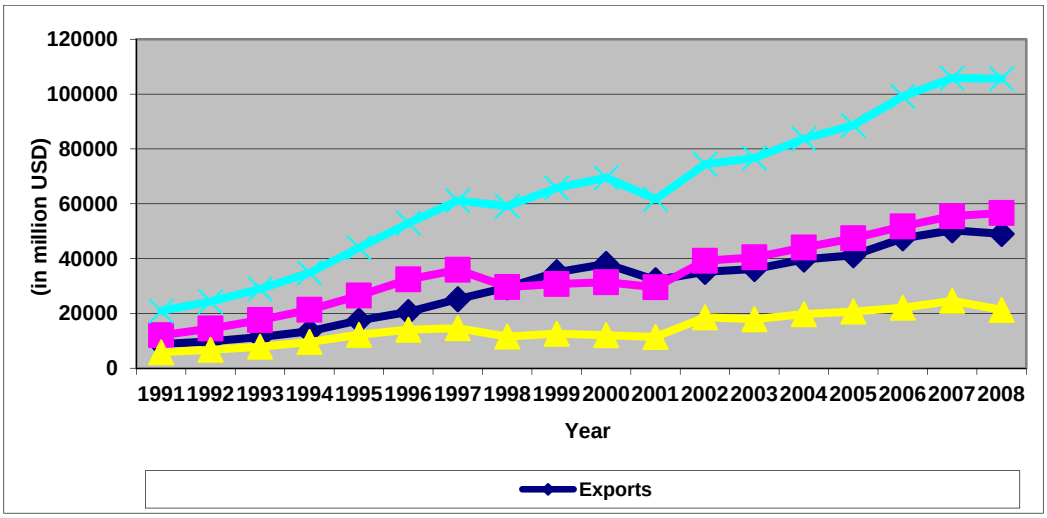
1. Introduction

The movement towards a single global economy becomes very much apparent as countries become more open to movement of goods and investment to and from other economies. As a matter of fact, the value of global foreign direct investment (FDI) has increased by more than tenfold in the last twenty years while the value of international trade flows boosted to almost six times of its level twenty years ago. Although both FDI and trade flow were on an increasing trend for the past few years, there is still an amount of literature concluding that FDI dampens the increase or, in the extreme, decreases trade flow. This is evident in situations where the FDIs made by multinational corporations (MNCs) are made to capture the market of the recipient economy through an establishment of a subsidiary firm in the foreign economy. This FDI tends to eliminate the need for trade via domestic production. These types of FDIs are also known as horizontal investments which are usually employed by MNCs to avoid high cost of transporting goods and evade artificial trade barriers present in the recipient economy. On the other hand, FDIs promoting trade flows are known as vertical investment. Under this type of FDI, MNCs fragment production by stages in different countries to take advantage of low cost of a particular input in a specific country. Although advancement in technology allows for faster and more efficient way of trading goods, the presence artificial barriers to trade and red tapes in institutions facilitating trade flows, gives rise to the existence of the two sides of the FDI – trade linkage.

II. Trade Flows in the Philippines

The Philippines' imports and exports have been increasing at an average rate of 7.5% and 5.6%, respectively in the past 10 years. Figure 1 shows this increasing trend with imports of raw materials and intermediate goods showing a significant share on the total value of imports and serving as an important factor in the country's growing exports.

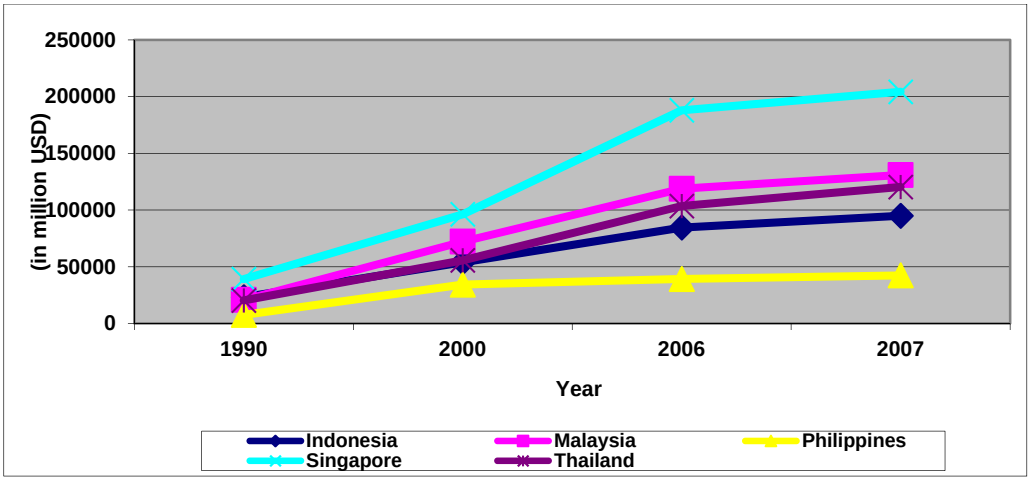
Figure 1. Imports, Exports and Trade Flows - Philippines, 1991 - 2008.



Source: NSO Database

Although trade flows are an increasing trend in the past years, the Philippines still lag behind in trade flow performance, specifically in exports, of other countries in the Southeast Asian region. Figure 2 shows that most of the neighboring countries are now at a better status despite the fact that they were on almost the same levels of exports two decades ago. One possible reason for this lower rate of growth in exports is the lack of direct investments necessary for domestic capital formation and economic growth.

Figure 2. Exports - Selected Southeast Asian Nations, 1990 - 2007.

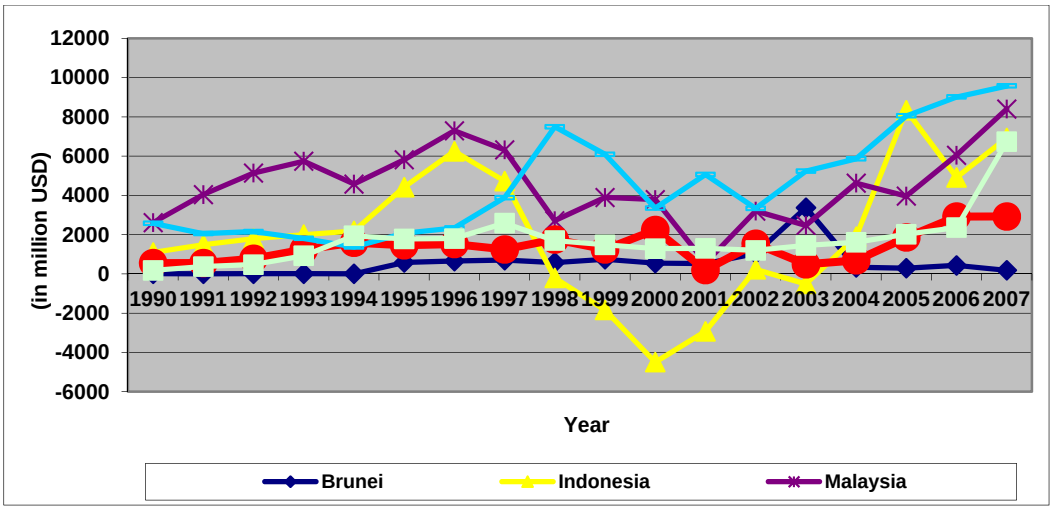


Source: WTO International Trade Statistics

III. Foreign Direct Investment in the Philippines

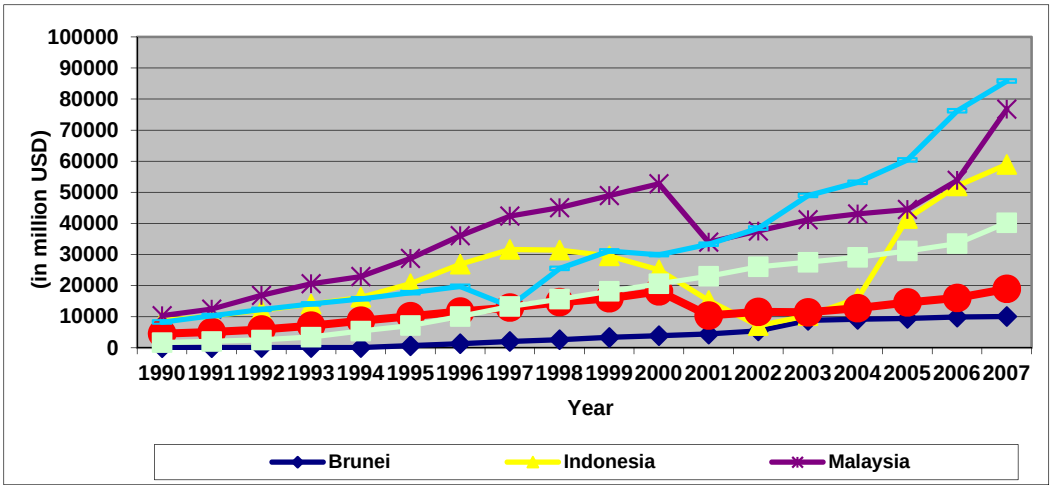
Foreign direct investment has been considered vital in the economic growth of an economy. Investments spur economic growth through creation of employment and increased production in the recipient economy. In a developing country such as the Philippines, where resources are scarce and savings rate is low, FDIs help in augmenting the low domestic capital formation. Figure 3 and 4 shows the inward FDI and FDI stock in the Philippines and other neighboring countries for the last two decades.

Figure 3. Inward Foreign Direct Investment - Selected Southeast Asian Nations, 1990 - 2007.



Source: UNCTAD Database

Figure 4. Foreign Direct Investment Stock - Selected Southeast Asian Nations, 1990 - 2007.



Source: UNCTAD Database

Most of the Philippines' inward FDI comes from Japan, United States and other Southeast Asian countries. Though the growth rate of FDI stock in the Philippines has been increasing at an average of 5.76% in the past ten years, it doesn't fare as well as its Southeast Asian neighbors. As illustrated in figure 4, the Philippines is now remotely behind other countries that started at similar levels of FDI stock during the early 1990s. Such relatively lower rates may be attributed to several factors, like lack of political stability, peace and order, and the negative image of the country in the international community. Moreover, the emergence of alternative cheaper labor markets in other countries resulted in a decrease in the relative competitiveness of the Philippine labor market contributing to the decline in inward FDIs coming in the country. These concerns, which are critical in the decision of a MNC to engage in business in the country, should be addressed for the country to move at the same pace as most of the countries in the region. If this lower FDI flow in the Philippines as compared to other countries persists, it will not be a surprise that it will translate to significant negative impacts in terms of employment, economic growth and trade flows in the country.

Given the same trend of trade and FDI flows in the region, it is of interest to verify if these two critical variables move positively together significantly, specifically in the case of the Philippines. Results from the analysis will provide a more concrete basis for pursuing favorable FDI-inducing policies knowing that it also reinforces trade flows.

IV. Determinants of FDI and Presence of MNCs

Foreign direct investment is defined as an investment where the investor acquires a substantial interest in a foreign firm or sets up a subsidiary in a foreign country and with the intent to manage that asset (Markusen, et. al., 1995). According to the World Trade Organization, the management dimension is what distinguishes FDI from portfolio investment. In addition, FDIs are different from portfolio investment in a manner that the former usually stays in the recipient country for a long period of time (e.g. infrastructures) while the latter can easily be pulled out and moved to other countries. This is the reason why FDIs are more desirable since they foster long term economic growth for the recipient economy.

Foreign direct investments are strongly associated with multinational corporations as MNCs try to capture a larger market by means of some market advantage that they possess. John Dunning's Ownership-Location-Internalization, or "OLI" framework, provided an analysis on the conditions necessary for the MNCs to have incentives to undertake FDIs despite the disadvantages that an MNC faces in an unfamiliar market and territory. According to Dunning, the presence of a market power advantage over the domestic firms and presence of scale economies at the plant level in the recipient country provides strong motivation for MNCs to invest in other countries (Markusen, 2004). On top of that, a favorable business environment and sound economic fundamentals in a country are also major considerations for FDI decisions. These economic indicators and fundamentals includes GDP growth, real income, trade policies and macroeconomic stability, the degree of segmentation and structure of the specific market, size and commodity reserves of market, cost and specialization of production, and infrastructure possibilities (Michi, et. al., 2004). Carius (2002) further added that factors influencing the destination of FDI are not only economical, but also political. Michi, et. al. (2004) believed that these political considerations include political stability, environmental regulatory framework, administrative capacities, political consistency and profit repatriation.

According to Markusen (2004), the market advantage claimed by Dunning arises from knowledge-based assets or knowledge capital rather than physical capital due to the transportability, jointness and factor intensiveness characteristics of the former. For instance, the non-rival characteristic of information necessary to produce a good more efficiently can be used in all subsidiary firms of the MNC at the same time which is not possible with physical capital such as a production equipment. To sum it up, Markusen (1995; 1998; 2004) identified some stylized facts regarding foreign direct

investment, multinational corporations and merchandise trade:

- MNCs are intensive in the use of knowledge capital rather than physical capital
- most direct investment occurs among high-income developed countries
- a majority of direct investment is horizontal in nature
- trade and FDI are complements at a superficial level, but are substitutes at a more disaggregated level
- there exists weak evidence that trade barriers contribute to explaining direct investments

V. Vertical vis-à-vis Horizontal FDIs[1]

Horizontal MNCs are firms which produce the same goods and services in different locations or countries while vertical MNCs are firms which geographically fragment the production process by stage. According to Markusen (2004), locational advantage gives rise to the difference between the two types of MNCs. For instance, the existence of high trade costs like a transportation cost and tariffs encourages more of horizontal FDIs to be able to evade or minimize these trade costs. Also, a larger market in the host country makes it economical to establish a local production facility, taking advantage of scale economies in production. In his MNC model, Markusen stated assumptions about the size, location and factor composition of fixed costs, then analyzed in which regimes horizontal or vertical investments would become more evident.

Horizontal MNCs

According to the model, in an equilibrium regime with moderate to high trade costs, horizontal investments are more widespread when countries are relatively similar in both size and relative factor endowments. That is, alike countries interact though horizontal direct investment, where firms are invading each other's markets similar to the common idea of intra-industry direct investment. Horizontal investments may also be present in cases where there are significant differences in both size of the country and relative factor endowments. Similar results were demonstrated under a trade regime with a moderate to high trade cost. When countries are relatively similar in both size and relative factor endowments, it is expected that there will be no trade at all with most production done by horizontal MNCs, i.e. interaction by direct investments completely dominates.

On the other hand, the model showed that there are no active horizontal MNC in an equilibrium regime with low to zero trade costs. This is expected since it will be relatively costly to build a second plant in another country as compared to just exporting the good if trade is completely costless. In addition, the firm can take advantage of plant-level scale economies by concentrating on just a single production plant and just costlessly export the goods to other countries. Similar results were exhibited under a trade regime with low to zero trade costs.

Vertical MNCs

If the existence of high trade costs encourages more horizontal FDIs, low trade costs encourage vertical FDIs since these types of investments basically require trade in the different stages of the production process. Varying factor intensities among countries, in which different stages of production can be located, also encourage vertical FDIs to exploit factor-price differences across countries (Markusen, 2004).

According to the model, in an equilibrium regime with moderate to high trade costs, vertical investments are dominant if countries are similar in size but very different in relative endowments. The intuition behind this result is that factor prices would be very unequal in this region, thus vertical MNCs are in the strongest position to exploit the factor-price differences by locating a plant in the foreign country. These MNCs locate in countries that are relatively more endowed with skilled labor. Similarly, in a trade regime with moderate to high trade cost, vertical MNCs will subsist as long as the gains in terms of factor-price differences outweigh the high trade costs.

[1] This portion of the paper summarizes the model presented by James Markusen in Chapter 7 of Bijit Bora's book entitled "Foreign Direct Investment: Research Issues"

Furthermore, the model demonstrated that in an equilibrium regime with low to zero trade costs, vertical investments are still dominant if countries are similar in size but very different in relative endowments for the same reason given above. Likewise, in a trade regime with low to zero trade costs, the fact that trade costs are low gives more incentives for vertical MNCs to invest in foreign countries with different relative endowments.

These are some of the parameters that determine which type of investments will most likely exist in different cases. These provide some idea whether FDI would be a possible complement or substitute for merchandise trade.

VI. Empirical Evidence

It appears that the bulk of the existing literature favor the complementary relationship between FDIs and trade. Though, as Markusen (2004) stated, the outcome usually depends on the level of aggregation used in the analysis. However, even under these categories of aggregation, ambiguity still persists among studies looking at FDI-trade linkage.

According to Fontagne (1999), relationships between trade and investment can be studied effectively at the firm level, but he also noted that there are problems with data availability and the ability to cover all relevant aspects of the relationship. Thus, most of the studies done in countries where data is limited are country analysis rather than at the firm or industry level. This portion of the paper will summarize the results from the existing literature at various aggregation levels.

Firm-level Studies

Some studies that analyzed FDI-trade linkages at the firm level in the United States were Lipsey and Weiss (1984) and Sachs and Shatz (1994). Results from both studies showed positive correlation between US investment in the foreign markets and US exports (Fontagne, 1999). Fontagne (1999) concluded that there is microeconomic evidence of a complementary impact of outward FDI and exports in the United States. This result, however, is not unique in the case of the US. Swedenborg (1979), on his study on Swedish FDI, found a complementary relationship between FDI and exports of final goods (as cited by Fontagne, 1999). On the other hand, Bergsten, et. al. (1978) found that an initial complementary relationship of trade and FDI may shift to being substitutes as internalization advances to a higher stage. The same result was also exhibited in the study of Pearce (1982), Blomstrom and Kokko (1994) and Svensson (1996).

Industry-Level Studies

Using a multi-country, multi-sector general equilibrium model applied in the United States' exports and affiliate sales in 1994, Helpman et. al. (2003) concluded that firms substitute FDI for exports when transport costs were relatively high and when plant-level returns to scale were relatively weak. On the other hand, Fontagne (1999) concluded that foreign investment abroad stimulates the growth of exports from investing countries showing that investment is complementary to trade in his study of 14 countries. Specifically, results showed that each dollar of outward FDI produces about two dollars' worth of additional exports (Fontagne, 1999). Similarly, Bolling (1998) concluded that for many large exports between the United States and Canada/Mexico, trade and FDI are complementary, specifically on heavily traded products such as chocolate and vegetable products that are used as intermediate inputs in the host country. However, Goldberg and Klein (1999), using a detailed data on bilateral capital and trade flows between the United States and individual Latin American countries, found an ambiguous relationship between FDI and behavior of manufacturing industries.

Country-level Studies

Mixed evidence of FDI-trade linkages are also exhibited at the country level. Studies of Belderbos and Sleuwagen (1998) on Japanese investment in the EU, Barrel and Pain (1999) on Japanese investment in both US and EU and Pain and Wakelin (1998) for 11 OECD countries all showed a negative relationship between FDI and trade. Similarly, Clougherty and Grajek (2005) observed that FDI represents a substitute to trade for

serving customers in a foreign market. On the other hand, using data from balanced panel of countries, Eaton and Tamura (1994) found some complementary linkages between trade and investment in Japan and the United States for the period 1985-1990 (as cited by Michi et.al., 2004). Similarly, Liu et. al. (2001) found that there was a complementary link from the growth of China's imports to the growth of inward FDI stock from 1984 to 1998 (as cited by Michi et.al., 2004). A number of studies also concluded mixed and ambiguous results with regards to the relationship between trade and FDI, like those of Chakrabarti (2003), Zhang and Felmingham (1997, 2001), Sun et. al. (2002), Lin (1995), Cuadros *et al.* (2001), Lipsey (1991) and Flam (2007) as presented in the study of Michi et.al. (2004).

There exists a large pool of literature looking at the relationship between commodity trade and FDI. On the one hand, studies suggested that commodity trade and FDIs are substitutes in a sense that a firm establishing a subsidiary in a country would eliminate the need for trade. On the other hand, literature has demonstrated that the two are complements in the sense that FDIs take the form of vertical investment that fragments production by stages in different countries to take advantage of the low cost of a particular input. Conclusions from the various studies are so diverse that some find inconclusive results with regards to the FDI-trade linkage.

VI. FDI Effects on Trade Flows

Various empirical studies demonstrated different results with regards to the relationship between trade and foreign direct investment. In the Philippines, the inward FDI and trade flow have been increasing through the years, but the link between the two have yet to be established. Though the Philippines is favored for establishing a subsidiary plant due to relatively cheaper labor as compared to developing countries (i.e. vertical investments), there is still a need to verify whether there is a significant positive relationship to back-up this observation.

The study utilized the multiple linear regression analysis to look at the impact of foreign direct investment to the volume of trade in the Philippines. The volume of trade will be represented by value of total exports and value of total trade flow. The distinction between the two lies in the nature of the foreign direct investment. On the one hand, the establishment of a vertical MNC may use a significant amount of domestically available resources as its raw materials and export the product to the other production stages in different countries. In this situation, we can expect that FDIs would have an effect on trade flows via exports. On the other hand, some vertical MNCs also imports raw materials from one of their subsidiary processing plants and using it as a large part of intermediate inputs used in the production process. In this case, FDI may enhance trade flows via both imports and exports. The regression equations used in the study take the form

$$EX_t = \alpha_0 + \alpha_1 IMRM_{t-1} + \alpha_2 ER_t + \alpha_3 ER_{t-12} + \alpha_4 FDI_{t-12} + \alpha_5 FDI_{t-24} + \varepsilon \quad (1)$$

$$TF_t = \alpha_0 + \alpha_1 IMRM_{t-1} + \alpha_2 ER_t + \alpha_3 ER_{t-12} + \alpha_4 FDI_{t-12} + \alpha_5 FDI_{t-24} + \varepsilon \quad (2)$$

where EX represents the value of the total exports while TF represents the value of the total exports and imports. IMRM represents the value of imports of raw materials and intermediate goods. ER represents the peso to dollar exchange rate (where a higher value means an ER depreciation). FDI represents the non-resident investments in the Philippines, and the subscripts t represent monthly periods from 1991 to 2008.

The subscript t and t-12 in ER implies that both the current and a one-year lag term in exchange rate were included in the regression. Similarly, the subscript t-12 and t-24 in FDI reflects the inclusion of a one-year and a two-year lag in foreign direct investments. Also, a one-period lag on imports of raw materials and intermediate goods was used in the regression. It is hypothesized that the estimated coefficients of IMRM and ER will be positive while the estimated coefficients of FDI variables can be positive or negative depending on the relationship between trade and FDI in the Philippines.

VII. Results and Discussion

Equation (1)

The regression result showed that 85% of the variation in the total exports can be explained by the explanatory variables given in equation (1). Table 1 presents a summary of the result of the regression analysis.

Table 1. Regression Results from Equation (1)

Variable	Coefficient	Standard Error	Level of Significance
IMRMt-1	1.1729	0.1106	1%
ERt	33.4728	7.4119	1%
ERt-12	15.5944	8.5307	10%
FDIt-12	0.2611	0.1366	10%
FDIt-24	0.4266	0.1487	1%

Results show that the estimated coefficients of imports of raw materials and exchange rate were positive as hypothesized. Consistent with economic theory, an increase in the peso-dollar exchange rate (depreciation) encourages Philippine exports. The estimates imply that a PHP1 depreciation in the exchange rate increases exports by USD33.47 million and by USD15.59 million with a one-year lag.

Electronic products constitute about half of the total Philippine exports and a significant portion of inputs used in the production of these exports were also imported as raw materials and intermediate inputs. This supports the positive relationship between imports of raw materials and exports in the case of the Philippines. The estimates imply that a USD1 million increase in the imports of raw materials and intermediate goods boosts exports by USD1.17 million with a one-period lag. This relationship can further be explained by looking at the country as one of the fragments in the entire production process of a MNC.

Results also suggest that FDI has a significant positive impact on Philippine exports as depicted by the positive estimated coefficients of both FDI variables. As shown in the table, a USD10 million increase in foreign direct investment increases exports by USD2.61 million with a one-year lag and by USD4.26 million with a two-year lag. This implies that inward FDIs to the Philippines do not only create domestic employment opportunities, but are also an engine that promotes exports necessary to alleviate the country's large foreign debt.

Equation (2)

The regression result showed that 90% of the variation in the total exports and imports can be explained by the explanatory variables given in equation (2). Table 2 presents a summary of the result of the regression analysis.

Table 2. Regression Results from Equation (2)

Variable	Coefficient	Standard Error	Level of Significance
IMRMt-1	3.1975	0.1765	1%
ERt	39.9264	11.8296	1%
ERt-12	20.1640	13.6152	NS
FDIt-12	0.4920	0.2180	5%
FDIt-24	0.8623	0.2373	1%

The results from the second equation show the same positive coefficients for all the variables similar with the first case. It is also worth noticing that the impact of the one-year and two-year lag FDI on trade flow is higher. This implies that FDI also has an impact on trade flows via higher levels of imports, specifically imports on raw materials and capital goods. This result is in line with the case electronics industry discussed above.

Results also show that an increase in the peso-dollar exchange rate (depreciation) increases trade flows. Though imports were included in the amount of trade flow and it may look counter-intuitive that imports rise with depreciation, such result can be explained by the type of imports of the country. Raw materials and capital goods constitute about 70% of the Philippines' imports which are used as intermediate inputs and are necessary for a subsidiary firm's operations. Since the products of these intermediate inputs will ultimately be exported afterwards, such importers may not be too responsive to small changes in the exchange rate and thus total trade flow still increases with depreciation. The estimate of the coefficient implies that a PHP1 depreciation in the exchange rate increases trade flow by USD39.93 million.

For IMRM, the estimate of the coefficient implies that a USD1 million increase in the imports of raw materials and intermediate goods boosts trade flows by

USD3.2 million with a one-period lag. Though the positive impact on exports are already clear from the discussion in the first regression results, the possible positive impact on imports may be attributed to an expansion of capital goods imports, such as telecommunication equipment and electronic machines needed complementary to the imported raw materials.

Similar to the first regression result, FDI showed a significant positive impact on the Philippines' trade flow as depicted by the positive estimated coefficients of both FDI variables. As shown in the table, a USD10 million increase in foreign direct investment increases trade flow by USD4.92 million with a one-year lag and by USD8.62 million with a two-year lag. In both cases, trade flow and FDI were observed to be complements as depicted by the positive FDI-trade linkage.

VII. A Final Note

The result of the study adds to the body of literature showing that trade and foreign direct investments are complements and demonstrated that a significant part of the inward FDI in the Philippines is in the form of vertical investments. Advancement in technology in terms of transporting goods across borders has made the gains from engaging in trade more robust and widely accepted by most countries. Together with the harmonization of trade policies and persistence of the World Trade Organization in decreasing trade barriers in all its member countries, the global community can expect proliferation of vertical direct investments and more empirical evidences of positive FDI-trade linkage. As for the Philippines, knowing that inward FDI does not only provide employment but also boosts Philippine exports, it becomes much more essential that the country provides the desirable economic and political environment to encourage inward FDIs.

References

Belberdos R. and L. Sleuwagen (1998). Tariff Jumping DFI and Export Substitution: Japanese Electronics Firms in Europe. Journal of Industrial Organization, 16(5), 601-638.

Bergsten, C., T. Horst and T. Moran (1978). American Multinationals and American Interest. The Brookings Institution, Washington D.C.

Blomström, M. and A. Kokko (1994), Home Country Effects of Foreign Direct Investment: Evidence from Sweden. *CEPR Discussion Paper*, 931.

Bolling, C. (1998), U.S. Foreign Direct Investment in the Global Processed Food Industry. Appendix 4 of Agricultural Economics Report No. (AER771), 156 pp.

Carius, A. (2002). Environmental Impacts of Foreign Direct Investment in the Mining Sector in the Newly Independent States. Conference Paper, OECD Global Forum on International Investment: Conference on Foreign Direct Investment and the Environment. "Lessons to be learned from the Mining Sector" February 7-8, Paris: France.

Clougherty, J.. and M. Grajek, (2005). Diffusion of ISO 9000 Standards, International Trade and Foreign Direct Investments.

Dunning, J. (1977). Trade, Location of Economic Activity and MNE: A Search for an Eclectic Approach, In Ohlin, B., P.O Hesselborn and P.M. Wijkman (eds). The International Allocation of Economic Activity. London: Mac millan.

Eaton, J. and A. Tamura (1994). Bilateralism and Regionalism in Japanese and US Trade and Direct Foreign Investment Patterns, *NBER Working Paper* No. 4758.

Fontagné, L. (1999). Foreign Direct Investment and International Trade: Complements or Substitutes? OECD Science, Technology and Industry Working Papers, 1999/3, OECD Publishing.

Goldberg, L. and M. Klein (1999), International Trade and Factor Mobility: An Empirical Investigation. in Guillermo Calvo, Rudiger Dornbusch and Maurice Obstfeld, eds., *Money,Capital Mobility and Trade: Essays in Honor of Robert A. Mundell*, MIT Press, Cambridge, Massachusetts, c. 2001, pp. 273-302.

Helpman, E., Melitz, M. and Yeaple, S.(2003). Export versus FDI. NBER Working Paper: 9439.

Lipsey, R. (1991). Foreign Direct Investment in the US and US Trade. *NBER Working Paper* No. 3623.

Lispey, R. and M. Weiss (1984). Foreign Production and Exports of Individual Firms. *Review of Economics and Statistics*, (66), 2, pp. 304-308.

Markusen, J., 2004. FDI and Trade. Chapter 7 in Foreign Direct Investment: Research Issues by B. Bora.

Markusen, J., J. Melvin, W. Kaempfer, and K. Maskus (1995). International Trade: Theory and Evidence. Singapore: McGraw-Hill International Editions.

Michi H., S. Cagatay and O. Koska, (2004). The Impact of Environmental Regulations on Trade and Foreign Direct Investments.

NSO Database (2008). National Statistics Office. Philippines. www.census,gov.ph

Pearce, R. (1982). Overseas Production and Exporting Performance: An Empirical Note. University of Reading, Discussion Papers in International Investment and Business Studies, 64.

Sachs, J. and H. Shatz (1994). Trade and Jobs in US Manufacturing, *Brookings Papers on Economic Activity*, 1, pp. 1-69.

Svensson, R. (1996). Effects of Overseas Production of Home Country Exports: Evidence Based on Swedish multinationals, Weltwirtschaftkiches Archiv, 132, pp. 304-329.

Swedenborg, B. (1979). The Multinational Operations of Swedish Firms. Almqvist & Wicksell International, Stockholm.

UNCTAD (2007), World Investment Report: Trends and Determinants. United Nations Conference on Trade and Development, Geneva. www.unctad.org

WTO. World Trade Organization, Geneva. www. wto.org

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A Comparison of Business Negotiation between Korean and Chinese Businessmen

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ABSTRACT

One way to understand intercultural negotiation is to compare cultural preferences for communication patterns as proposed by Hall (1976), who linked cultural norms to communication and linguistic patterns. When businesspeople from different cultural backgrounds sit around a negotiation table and all speak the same language - English, cultural differences will appear from time to time, which often leads to a misunderstanding. Previous studies show that negotiation patterns and practices of different cultures, such as western and oriental cultures, are different. In this study, the process of business negotiations in two countries, Korea and China, are compared and contrasted to discover if there are any differences in business negotiation patterns and practices in the same high context cultures.

1. Introduction

International business people attempt to negotiate for an optional solution in order to minimize conflicts and maximize profits. Martin et al. (1999) found that a clear negotiation strategy is the most important factor for successful international business relationships.

In international business negotiations, cultural differences between negotiators from different countries are inevitable. Cultural values can influence international business negotiations in significant and unexpected ways from the first to the last stage of a negotiation. The diversity of partners' values results in different approaches being used in the negotiation process and various expected outcomes. Successful international business negotiation is not guaranteed by practical negotiation tips only. In fact, it would be more useful for negotiators if the most critical success factors of international business negotiations in a particular culture could be identified in advance.

Negotiating with business people from different cultures requires an understanding and ability to adapt to these differences. Special approaches for particular cultures may be needed. Negotiation is the most common means of managing the inevitable conflicts which arise between business organizations. Increasingly, commercial relationships span both political borders and cultural boundaries, yet we know little about negotiations in different cultures. A lot of international business is done by face to face negotiations. International business, such as joint ventures, mergers and acquisitions, licensing and distribution agreements, and sales of products and services are usually carried out by face to face negotiations.

Numerous cross-cultural endeavors end in failure due mainly to a negotiator's inability to accept and adapt to the underlying beliefs of the other party (Currie, 1991). Since international business negotiations are more complex than domestic business negotiations due largely to this added dimension of cultural diversity, one proposed solution to the limitation of principled negotiating is the synergistic approach (Adler 1991). The culturally collaborative synergistic style of negotiation emphasizes that understanding the other parties' interests and assessment criteria becomes more difficult due to cultural and communication differences. However, the diversity of culture may enhance the generation of creative options for mutual gain. Based on these assumptions, synergistic negotiation suggests that if cross-cultural differences are recognized, clearly communicated, and understood by the negotiator, they can be the basis for constructing win-win agreements.

Culture has a profound impact on how people in the marketplace perceive and behave. The level of aggregation of this construct, however, has always been somewhat problematic. In the realm of international marketing, culture has been typically visualized at the national level. However, organization within the national context has been difficult because of a wide divergence of definitions of culture, each reflecting different paradigms form varying disciplines. In this regard, Hofstede's four dimensions of culture appear most promising. They are based on empirical research, and thus offer the advantage of being quantifiable. Hofstede (1980) defines national culture as the "collective mental programming" of people in an environment. As such, it is not a characteristic of individuals, but of a large number of people conditioned by a similar background, education, and life experiences

The purpose of this study is to explore the theoretical background of business negotiations and to compare the business negotiation approaches of Korean and American business people through an exploratory method.

II. Theoretical Perspective

2-1. Background Factors for Negotiation

Negotiation studies consider seven interrelated constructs. Negotiators' characteristics and situational constraints influence negotiators' expectations formed prior to entering the negotiation process. They also influence the negotiation process and its atmosphere. Expectations, the negotiation process, and atmosphere have a direct impact on the results, which in turn, influence the negotiator's assessment of the process, results and performance.

Situational constraints refer to the circumstances of the negotiations and the constraints imposed on the process. They include the specifics of the negotiation problem, how organization within which the negotiation is conducted, and means and technologies of communication. The contextual factors are constant in the inspire negotiations.

The negotiation atmosphere and process have been thoroughly studied and found to play an important role in negotiation. The concept of atmosphere includes variables describing the personal attitudes of the negotiators during the negotiation process. Chan (1998), Graham (1997) and others suggest two main factors that contribute to the atmosphere and process: negotiation strategy and attractiveness. Negotiation strategy reflects the negotiators' concern for their own outcome and their concern for the other party's outcome. In the contending strategy, negotiators are concerned mainly with their own outcome and less with the other party's. Such negotiators tend to have high aspiration levels and make fewer concessions. The process is competitive, leading to 'win-lose' negotiations. Negotiators' consideration of the other party's outcomes as being instrumental for their own outcomes leads to a problem solving strategy.

Grumperz (1979) suggests that while interacting, humans provide stylistic signals for interpretation of verbal communication through the use of what he calls contextualization cues. An example of a contextualization cue might be a rise in tone of voice to indicate or emphasize an important point. Grumperz and his associates have also found that contextualization cues vary across cultures. They are behaviors learned in the course of the individual's socialization. Further, he suggests that differences in these cues are often the cause

of misunderstandings which can have serious consequences in cross-cultural interactions.

Elements of conversational form that have been found to vary across cultures are legion. For example, Graham (1985) reports that Brazilian negotiators appear to have a more aggressive conversational form than Japanese or American negotiators. In simulated negotiators, Brazilians used the words 'no' and 'you' more frequently, with the former providing a negative tone, and the latter providing a presumptuous tone vis-a-vis the Japanese and American behaviors. The Brazilian nonverbal behaviors also differed from the Japanese and Americans in that there were no silent periods and far more interruptions and facial gazing that occurred.

A variety of situational factors might act as determinants of outcomes of business negotiations: for example, company goals, location, number of parties. Culture has been a difficult concept to deal with in any consistent, scientific way. A culture is a configuration of learned behaviors and results of behavior whose component parts are shared and transmitted by the members of a particular society (Linton, 1945). The focal point of the definition for the present research is the idea that behaviors are shared by members of a particular culture. According to Spiro (1950), members of a given society behave in uniform and predictable ways. In addition to bargaining behaviors being consistent within cultures, several authors have suggested that negotiation processes differ across cultures.

2.2. Negotiation Process

The problem solving approach (hereinafter PSA) to negotiations involves first an emphasis on questions and obtaining information from clients about their needs and preferences. Second, once the client's requirements and circumstances are fully understood, then the negotiator adjusts the offer to the client's needs. The focus is on cooperation and an integrative approach, wherein the needs of both parties are honestly discussed and eventually satisfied. A PSA can be concisely defined as a set of negotiation behaviors which are cooperative, integrative and information-exchange oriented. Such strategies tend to maximize the number of alternative solutions considered, thus allowing negotiators to optimize outcomes. The relationship between a problem-solving approach and negotiation outcomes has been frequently investigated during the last twenty years. Different researchers have used various labels for the PSA concept (e.g., integrative bargaining strategies-Walton and McCredie (1965); cooperative orientation - Rubin and Brown (1975); Williams (1983); Problem-solving orientation-Pruitt and Lewis (1975), Murray (1986)). Most of the findings have been relatively consistent. Generally, PSA has been found to positively influence negotiation outcomes. Graham (1986) investigated relationships between PSA and negotiators' individual profit as well as their bargaining partner's satisfaction. Consistent with several studies reviewed by Rubin and Brown (1975), statistically significant relationships were discovered between a negotiator's PSA and the negotiator's individual profit. Negotiators who encourage partners to provide information about themselves, as well as their needs and preferences can be expected to achieve more favorable negotiation outcomes. Rubin and Brown (1975) and Weitz (1979) suggest the importance of adjusting one's negotiating tactics according to one's impressions of the opponent's negotiation style. Specifically, Weitz suggests that adaptive behavior will enhance negotiating effectiveness. Rubin and Brown posit that high adaptability coupled with cooperativeness will favor higher negotiation outcomes.

In addition to the negotiating strategies, interpersonal attraction, such as liking or disliking someone, having a friendly or unfriendly feeling, as well as attitude change, can strongly influence negotiation outcomes and the success of future transactions. Rubin and Brown (1975) conclude in their review of the negotiation literature that generally interpersonal attraction enhances negotiating outcomes. Negotiating a partner's satisfaction has been found to be positively related to negotiator's attractiveness for business people from France and Germany (Campbell et al. 1988), from America, Taiwan, Japan and Korea (Graham et al. 1988), as well as from Canada and Mexico (Adler et al. 1989). McGuire (1968) explains that when people are attracted to each other,

they will make sacrifices (i.e. concessions in a negotiation) to preserve the gratifying relationship. Thus, an individual negotiator may give up economic rewards for the social rewards of a relationship with an attractive partner.

In the very relevant field of buyer/seller interactions, Evans' (1963) similarity hypothesis posits that the more similar individuals are in buyer/seller relationships, the more favorable the outcome and the more likely a sale will occur. Mathews, Wilson and Monody (1972) argue that perceived similarity results in more cooperation between buyer and seller. Attraction is the mechanism through which similarity affects these outcomes.

It should be noted that interpersonal attraction might be conceived as an exogenous construct determined before negotiations begin as a part of the combination of the negotiator's characteristics. It may also be argued that attraction is a consequence of the negotiation. However, attraction is regarded as a process-related construct.

In the cross-cultural negotiation literature, duration of the negotiation is described as a key aspect of the process. For example, Tung (1982) and Van Zandt (1970) report that negotiations with Chinese and Japanese business people are exasperatingly long from the perspective of most American negotiators. Pruitt (1981) discusses at great length the pervasive influence of time on negotiations. That is, a time limit affects the quality of the aspirations, concession making, and negotiation satisfaction. Although time limits per se are not varied in this study, negotiators from different cultures may have different expectations about appropriate duration, which may in turn influence behaviors.

2.3. Negotiation Outcomes

Researchers often find outcomes of business negotiations difficult to measure and to compare. Various studies have used sale versus no sale, an obvious measure of negotiating effectiveness (e.g. Pennington, 1968), as well as profits obtained by negotiators (e.g. Rubin & Brown, 1975), and combination of individual and joint profits (Clopton, 1984). Beyond profits, negotiator's satisfaction is an important measure of success, especially if both partners desire a continued relationship. Given the dual importance of task accomplishment (profit) and relationship building (satisfaction), especially in international negotiations, the present study uses both as outcomes.

2.4. Hypothesis

H1: Negotiator's individual profits are positively related to his or her negotiating partner's use of a problem-solving approach.

H2: Partner's satisfaction with the negotiation outcome is positively related to negotiator's use of a problem-solving approach.

H3: Negotiator's use of problem-solving negotiation strategies is positively related to his or her negotiating partner's use of problem-solving negotiation strategies.

H4: Negotiator's profit is positively related to his or her use of a problem-solving negotiation strategy.

H5: Partner's satisfaction with the negotiation outcome is positively related to negotiator's attraction.

III. Research Methodology

3.1. Methods

In this section, the procedures of the study are presented. First, the sample of business people participating in the research is specified. Next, the laboratory setting is described. Third, data collection instruments are presented.

3.1.1. Sample

The participants in the experiment included 40 Chinese and 30 Korean businessmen. The Chinese businessmen were graduate students while the Korean businessmen were participants in executive programs at Paichai University in Korea. All participants had no business experience, but they learned about major subjects in international trade for at least two years and took a course on international business negotiation.

3.1.2. Laboratory Setting

The negotiation simulation developed by Kelly (1966) involves negotiating the prices of three products. Each negotiator was given an instruction sheet, including a price list with associated profits for each price level. The participants were then allowed fifteen minutes to read the instructions (i.e., either a buyer or seller position sheet and appropriate payoff matrix) and plan negotiation strategies. The participants were seated across from one another at a table, given five final verbal instructions, and then left by themselves. When either an agreement was reached or one hour had elapsed, the participants were given the post-game questionnaire.

3.1.3. Evaluation of Study Variables

Outcome Measures. Two negotiation outcome measures were considered in this study. The negotiator's individual profits were derived from the negotiation solution agreed upon by the negotiators. The partner's satisfaction with the negotiation was measured using a four-item scale (all items were 5-points, e.g. anchored by satisfied/dissatisfied) included in the partners' post-game questionnaires.

Process Measures. Process measures were derived from post-game questionnaires. Each participant rated his or her own negotiation strategies and his or her partner's negotiation strategies on several items (e.g. anchored by solving a mutual problems/self-interested). The scales for problem-solving negotiation strategies combine four items from a negotiator's and four items from his or her partner's questionnaires for a total of eight items.

Interpersonal attraction. Partners rated the interpersonal attractiveness of the negotiator's-four items scale (e.g. anchored by comfortable/uncomfortable).

Role of negotiator. The role of negotiator as a constraint factor in negotiation was derived by participants who were classified by seller and buyer.

Table 1: Measures and Descriptive Statistics

Variables	items	factor loading	Eigen value	Cron-bach Alpha
Process Measures	Partner's willingness toward problem-solving	.78450	3.45323	.7819
	Negotiator's willingness toward problem-solving	.79630		
	Degree of negotiator's acceptance	.76885		
	Degree of partner's acceptance	.75348		
	Degree of negotiator's information exchange	.79886		
	Degree of partner's information exchange	.80662		
	Negotiator's prejudice	.73229		
	Partner's prejudice	.72996		
Attraction	Degree of comfort toward partner	.83878	2.65465	.7917
	Negotiation interest	.78628		
	Attitude toward renegotiation	.69734		
	Attraction of negotiation strategies	.72456		
partner's satisfaction	Satisfaction to agreement	.66432	1.9981	.7538
	Satisfaction to prior anticipation	.73498		
	Satisfaction to the degree of profits	.76436		
	Satisfaction to negotiation process	.70882		

3.3. Results

Hypotheses 1 through 5 were tested by calculation of correlation coefficients. Table 2 suggests the results of the hypotheses.

Table 2: Results of Regression Analysis

Hypotheses	Korean	Chinese
H1	0.487**	0.361*
H2	0.187	0.326*
H3	0.471**	0.350*
H4	0.258*	0.096
H5	0.486**	0.390*

* : $p<0.1$, ** : $p<0.05$

Hypothesis 1 predicted that the negotiator's individual profits would be positively related to his or her negotiating partner's use of a problem-solving approach. H1 received support in this study by Korean and Chinese negotiators. Korean and American negotiators whose opponents use more problem-solving strategies achieve higher profit in the actual negotiation.

Hypothesis 2 was that the partner's satisfaction with the negotiation outcome would be positively related to the negotiator's use of a problem-solving approach. H2 was supported only by Chinese negotiators, which means that the more Chinese negotiators use problem-solving strategies in the negotiation process, such as information exchange, the more Korean negotiators' satisfaction in the negotiation can be increased. We can assume that this kind of problem-solving approach can be an effective negotiation strategy for Korean negotiators. That is to say, Korean negotiators from a high context culture showed a stronger positive relationship than those of the Chinese negotiators.

Hypothesis 3 was that the negotiator's use of problem-solving negotiation strategies would be positively related to his or her negotiating partner's use of problem-solving negotiation strategies. H3 was supported for two groups came from different cultures. It can be inferred from this result that if one party uses a cooperative strategy in the process of negotiation, the other party tends to adopt the same strategy, and they are likely to reach a satisfactory agreement.

Hypothesis 4 was that negotiator's negotiation profit would be positively related to his or her use of a problem-solving negotiation strategy. H4 received only limited support in this study. Only Korean negotiators who were able to make their partners feel comfortable achieved higher profits.

Hypothesis 5 was that the partner's satisfaction with the negotiation outcome would be positively related to negotiator's attraction. H5 was also supported by groups coming from different cultures by showing an affirmative relationship between a negotiator's attraction and his or her partner's satisfaction. However, Korean negotiators showed a stronger relationship than the Chinese, which means that the negotiator's attraction may give his or her partner satisfaction with the negotiation outcomes, specifically for Korean negotiators.

V. Conclusions

The purpose of this study was to discover the basic factors affecting the outcomes of international business negotiation and also find out if there were any differences between business negotiation practices of Korean and Chinese business people.

Culture has mostly an indirect influence on the outcome of negotiations (Graham & Sano, 1990). It works through two basic groups of mediating variables: the situational aspects of the negotiation (time and time pressure, power and exercise of power, number of participants, location, etc.), and the characteristics of the negotiators (especially personality variables and cultures). These two groups of factors, in turn, influence the negotiation process, which ultimately determines the outcomes (Jolibert, 1988).

One way to understand intercultural negotiation is to compare cultural preferences for communication patterns as proposed by Hall (1976), who linked cultural norms to communication and linguistic patterns. Kaplan argues that thought patterns and linguistic styles are reciprocally determined. The English language and its related thought patterns have, for instance, evolved out of the Anglo-European cultural pattern. Related thought and communication patterns are characterized by a linear and direct discourse. Additionally, the Anglo-European culture is characterized by analytical and systematical problem solving, and people of this culture prefer to solve problems linearly, one problem after another, in a monochronic time orientation. However, Asian thought patterns (for example, Chinese, Korean) are circular and indirect. Problem solving tends to be more person-oriented, and in contrast to the analytical Western approach, intuition is given more weight in these cultures.

Hall (1976) extends Kaplan's work and distinguishes between low-context and high-context cultures to describe cultural differences in communication patterns. He describes how much information needs to be coded and explicitly transmitted in a message to be efficient in

different cultures. According to Hall, in low-context cultures like the United States or Western European countries, there is only a small amount of shared and implicit information carried in the context of an event. This creates a significant need for contexting during negotiation. Low-context cultures are more explicit as they prefer a direct and linear discourse in negotiation. To the contrary, in high-context cultures such as Latin-American, as well as Eastern or Asian countries, most information is either contained in the physical context of an event or internalized in the persons. Less information needs to be coded explicitly in communication to be effective. These implicit cultures prefer indirect and circular communication patterns.

The Chinese still believe that business should be conducted between friends. As such, there will usually be a number of meetings and dinners (the "banquet circuit"). During the banquets, too much cognac is consumed, and despite the desires of the western businesspeople, too little work is accomplished. But trust and friendship, important ingredients to business dealings, is what both parties are looking to establish at this point.

Throughout one's dealings with a future Chinese partner, care must be given to the issue of "saving face" when one has a Chinese partner. Simply put "saving face" is a much more complicated form of honor, respect and positive recognition. These face issues can quickly destroy the negotiating process.

Once a level of trust and friendship develops, the negotiations become more meaningful both at the bargaining table and at the dinner table. Much progress and many deals are still casually struck in backroom meetings over cognac and a cigar with just the leaders of the two parties, leaving the teams to work out the details in meetings the next morning

In Asian countries such as Korea and China, negotiation means, in a sense, to talk with strategy. Therefore, an excellent negotiator refers to someone who is an expert in the use of strategy in order to gain the largest benefit. During the process of negotiation, it is very common for one side or both sides to make a compromise, but it is a little difficult for the Chinese side to take the initial step due to being afraid of losing face.

The Chinese will not rush into a serious meeting with someone whom they do not know. Trust and a certain feeling of closeness must be in place for any negotiation to take place. When mutual trust is not very high and the Chinese are exposed to bureaucratic pressure, tricky situations are common scenes in negotiating.

This study shows that business negotiation patterns and practices of Korean and Chinese business people are different even though the two countries belong to the same high- context culture.

Korean and American negotiators whose opponents use a greater number of problem-solving strategies achieve higher profit in the actual negotiation. The more often Chinese negotiators use problem-solving strategies in the negotiation process, such as information exchange, the greater the satisfaction experienced by Korean negotiators. It can be inferred that Korean negotiators from a high-context culture showed a stronger positive relationship than those of Chinese negotiators. A negotiator's use of problem-solving negotiation strategies is positively related to his or her negotiating partner's use of problem-solving negotiation strategies. If one party uses a cooperative strategy in the process of negotiation, the other party tends to adopt the same strategy and they are likely to reach a satisfactory agreement. A negotiator's negotiation profit is positively related to his or her use of a problem-solving negotiation strategy for Korean business people. Furthermore, the partner's satisfaction with the negotiation outcome is positively related to the negotiator's attraction.

This study suggests that substantial differences in negotiation style and pattern exist not only in cross-cultural negotiations, but even in intra-cultural negotiations. It holds important implications for training professional business people to manage international business transactions more efficiently in the future.

References

Abou-Zeid, S.(2000), "Situation-based Approach for E-Business Functional Modeling", *Object Oriented Information Systems,* London.

Adler, N.J. and J.L. Graham(1989), "Cross-cultural Interactions : The International Comparison Fallacy?, *Journal of International Business Studies,* Fall, pp.515-537.

Adler, N.J.(1991), *International Dimensions of Organizational Behavior*, Belmont, CA: Wadsworth Publishing.

Cambell, N,C,G,M, J.L. Graham, A. Jolibert and H.G. Meissner, "Marketing Negotiations in France, Germany and United Kingdom, and the United States", *Journal of Marketing,* Vol.52, April, pp.49-62.

Clopton, S.W(1984), "Seller and Buying Firm Factors Affecting Industrial Buyer's Negotiation Behavior and Outcomes", *Journal of Marketing Research,* Vol.21, pp.39-53.

Currie, R.(1991), "Remuneration to Fit the Culture" *Multinational Business,* Vol. 3, Autumn, pp.8-17

Evans(1963), "Selling as a Dyadic Relationship-A New Approach", *American Behavioral Scientist,* Vol.6, pp.76-79.

Hofstede, G.(1980), Motivation, Leadership, and Organizations : Do American Theories Apply Aborad? *Organizational Dynamics(Summer)*

Hodgetts, R.(1993), A Conversation with Geert Hofstede, *Organizational Dynamics, 21(4) (Spring)*

Goodenough, W. H.(1971), Culture, Language and Society. *Modular Publications,* 7. Reading, MA : Addison Wesley.

Graham, J. L.(1983), "Brazilian, Japanese, and American Business Negotiations", *Journal of International Business Studies*, Spring/Summer.

Graham, J. L.(1985), Cross-cultural Marketing Negotiations : A Laboratory Experiment, *Marketing Science, 4(2).*

Graham, J. L., & Sano, Y.(1990), *Smart Bargaining : Doing Business with the Japanese*(2nd ed.), Cambridge, MA : Ballinger.

Graham, J.L(1985) "The Influence of Culture on the Process of Negotiation : An Exploratory Study", *Journal of International Business Studies,* Spring, pp.81-94.

Graham, J.L(1986) "The Problem-solving Approach to Negotiations in Industrial Marketing", *Journal of Business Research,* Vol.14, No.6, pp.549-567.

Graham, J.L. and D.K. Kim, C.Y. Lin and R. Robinson(1988) "Buyer-seller Negotiations around the Pacific Rim : Differences in Fundamental Exchange Processes", *Journal of Consumer Research*, Vol. 15, June, pp.48-54.

Graham, J.L., L.I. Evanko, and M.N. Rajan(1992), "An Empirical Comparison and American Business Negotiations", *Journal of International Business Studies,* Vol.23, No.3, pp.387-418.

Graham, J. L., & Sano, Y.(1990), *Smart Bargaining : Doing Business with the Japanese*(2nd ed.), Cambridge, MA : Ballinger.

Grumperz, J. J(1979). "Sociocultural Knowledge in Conversational Inference", 28th Annual Roundtable Monograph Series on Language and Linguistics, Gorgetown University.

Jolibert, A.(1988), Le Contexte Cultural de la Negotiation Commercial, *Revue Francaise de Gestion*(November-December).

Linton, R(1945), *The Cultural Background of Personality,* New York: Appleton-Century-Profits.

Martin, D., Herbig, P., Howard, C., & Borstoff, P.(1999), "At the Table : Observations on Japanese Negotiation Style", *American Business Review,* Vol. 17, No.1, pp.65-71.

Mathews, H.L., D.T. Wilson & J.F. Monoky(1972), "Bargaining Behavior in a Buyer-Seller Dyad", *Journal of Marketing Research,* February,

McGuire, W.J(1968). "The Nature of Attitude Change", *in the Handbook of Social Psychology,* edited by L. Gardner and G. Aronson. Reading, MA: Addison-Wesley.

Pennington, A.L(1968), "Customer-Salesman Bargaining Behavior in Retail Transactions", *Journal of Marketing Research,* August, pp.252-262.

Pruitt, D.G(1981), *Bargaining Behavior*, Academic Press, New York.

Rubin, T.Z. and B.R. Brown(1975), *The Social Psychology of Bargaining and Negotiation,* Academic Press, New York.

Sawyer, J. and H. Guetzkow(1965), *"Bargaining and Negotiation in International Relations"* In H.C. Kelman(ed.), International Behavior : A Social-Psychological Analysis, Holt, Rinehart and Winston, New York, pp.464-520.

Sipiro, M(1950), "Culture and Personality : The Natural History of a False Dichotomy", Psychiatry, Vol14, No.1, pp.19-46.

Taylor, D.(1992), Global Software. Developing Applications for the International Market, New York, Springer Verlag.

Thibaut, J.W. and W.H. Kelly(1959), *The Social Psychology of Groups*, McGraw-Hill, New York.

Triandis, H.(1982), Review of Culture's consequences : International differences in work-related values. *Human Organization*, 44(1).

Tung, R. L(1982), "U.S-China Trade Negotiations", *Journal of International Business Studies,* Fall, pp.25-38.

Van Zandt, H.E.(1970), "How to Negotiate in Japan", *Harvard Business Review,* November-December, pp.25-38.

Weitz, B(1979), A Critical Review of Personal Selling Research : The need for Contongency Approaches in G. Albaum &G. A. Churchill, Jr., ed., *Critical Issues in Sales Management : State of the Art and Future Research Needs.* Eugene : University of Oregon.

Williams, G.R(1983), *Legal Negotiation and Settlement*, St. Paul : West.

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An Economy-wide Analysis of the Impacts of a Free Trade Area of the Asia-Pacific on the Philippine Economy

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ABSTRACT

This study examines the economy-wide impacts of a Free Trade Area of the Asia-Pacific (FTAAP) on the Philippine economy. In particular, it uses an Applied General Equilibrium model to determine the impacts on aggregate and sectoral outputs, consumption and trade. The study finds that the initiative will benefit the country in the form of higher GDP and total employment. While the simulation results show that most of the industries are likely to gain, it is projected to have adverse effects on the production of activities related to rice and corn. Finally, the study finds that the FTAAP is likely to have a relatively large impact on trade between the Philippines and its neighbors in Southeast Asia.

1. Introduction

In 1994, the Asia Pacific Economic Cooperation (APEC) strengthened its commitment to stimulate economic growth through regional integration and free trade. Manifested in the so-called "Bogor Goals," it expressed a desire to achieve free and open trade in the region by 2010 for developed economies and 2020 for developing economies. This was reinforced in Hanoi in 2006 when APEC leaders called for studies on promoting economic integration in the region, including the long term prospect for a Free Trade Area of the Asia-Pacific (FTAAP).[1]

While the Philippines is not a stranger to free trade areas and other regional trading arrangements, there remains a number of economic issues that need to be understood.[2] The basic question is whether the country will experience net economic benefits from the FTAAP. Moreover, it is also important to identify the economic sectors that are likely to gain or lose from such an arrangement. Addressing these concerns is essential for defining the position of the country on the FTAAP in general and on specific issues in the event that formal negotiations take place.

Applied General Equilibrium (AGE) models have been used extensively in the analysis of trade reforms. The applications range from the evaluation of unilateral to multilateral reforms. Unilateral reforms typically involve the removal of tariff and non-tariff barriers of a country. The commodity coverage of such changes are either selective (i.e., focused on one or a few commodities) or across-the-board. Similar approaches have also been used by AGE models applied to multilateral reforms. However, owing much to the nature of such reforms, these are commonly evaluated using multi-country AGE models. As a thorough review of these studies is beyond the scope of this paper, the interested reader is encouraged to consult Shoven and

Whalley (1992) and Srinivasan and Whalley (1986) for early reviews on the applications AGE models to international trade.[3]

The use of AGE models focused on trade policy in the Philippines began with the work of Clarete (1984a). Since then, there have been quite a number of models devoted to the subject.[4] The themes and results discussed in such papers do not really differ much from those discussed earlier and hence requires no further elaboration.

AGE models have also been used for analyzing trade reforms within the confines of APEC. Motivated primarily by the "Bogor Goals," a common objective in the analyses was to identify the impacts on trade flows, macroeconomic and sectoral indicators, and the welfare of removing trade barriers among APEC member countries. In many instances, the experiments focused on the non-discriminatory nature of the reforms proposed in the Bogor Declaration. One difference among the studies is in the country coverage of the reforms. For example, Lewis et al. (1995) compared the impacts of reforms involving all APEC members to an arrangement that omits either the US, China or countries belonging to the Association of Southeast Asian Nations (ASEAN). McKibbin (1996), on the other hand, examined the effects of reforms that are confined only to ASEAN. Wang and Coyle (2002) and Lewis et al. (1995) adopted a slightly different strategy by comparing reforms limited to the APEC to one that is global in nature. Another difference concerns the nature of the trade reforms. Wang and Coyle (2002) and McKibbin (1996) compared the impacts of arrangements which are discriminatory and non-discriminatory to non-APEC member countries. A final source of difference in the experiments is the commodity coverage of the reforms. Scollay and Gilbert (1999) and Gilbert et al. (2000), for example, explored the impacts of removing trade barriers on agriculture and food among APEC member countries.

The results from the studies can be summarized as follows. First, there appears to be a consensus that removing trade barriers within the APEC is beneficial to its members as a whole. However, it is also possible that some member countries might actually lose from such an arrangement. For example, Wang and Coyle (2002) cited the potential decline in the real GDP growth of Mexico. Second, excluding selected members from the reforms implies lower gains for the region. Lewis et al. (1995) found lower gains when either the US, China or ASEAN are excluded. It also argued that the lost benefits are largest when the US is not included in the arrangement. Finally, Wang and Coyle (2002) and Lewis et al. (1995) showed that the gains from global trade liberalization are larger than reforms which are limited to APEC members only.

Most of the studies above are multi-country in nature. There was very little focus, if at all, on the effects of APEC-related trade reforms on the Philippines. This study attempts to fill the gap by examining the effects of the FTAAP on the Philippines only. In particular, it uses an AGE model to determine the impacts of the FTAAP on aggregate and sectoral outputs, consumption and trade.

This rest of the paper is organized as follows. Section 2 describes trends in Philippine trade with its partners in APEC. Section 3 discusses the model and experiment. Section 4 presents the simulation results. Section 5 provides a few concluding remarks.

II. Philippine trade with APEC countries

The APEC as a group is the most important trading partner of the Philippines. In 2006, its transactions with APEC members amounted to nearly two-thirds of its total trade (Table 1). It is the top destination of Philippine exports, accounting for about three-fourths of the total. Slightly more than half of its imports are also sourced from APEC.

Table 1. International trade of the Philippines, 2006, billion US dollars

Item	APEC	World
Exports	35.4	47.1
Imports	29.3	53.9
Total Trade	64.7	101.0

Source of basic data: United Nations, Comtrade Database, http://comtrade.un.org/

The importance of APEC as a source and destination of Philippine products has also been growing in recent

years. Between 1992 and 2006, Philippine imports from APEC members grew faster than its imports from the rest of the world (Table 2). Philippine exports to APEC followed a similar pattern. As a result of its relatively rapid growth, the current share of APEC countries in Philippine trade is higher than what it was 15 years ago. For example, the share of imports from APEC member countries in 2006 was about 6.5 percentage points higher than in 1992.

Over the same period, there were also substantial changes in the pattern of trade between the Philippines and specific APEC member countries. Among the notable changes are the decline in the importance of the US and Japan, and the emergence of China and APEC in Philippine trade (Table 2). While the US continued to be the top destination of Philippine-made goods, its share in total exports dropped significantly between 1992 and 2006. Over the same period, there was also a marked increase in the shares of China (mainland), Hong Kong, Malaysia, Singapore and Thailand. The largest increase was for China, whose share in 2006 was more than eight times higher than in 1992. A similar, albeit less pronounced, pattern can be observed for imports. Between 1992 and 2006, there was a noticeable decline in the share of Japan in total imports. This coincided with increased importance of China and Singapore.

Table 2. Trade between the Philippines and APEC members, percent

Country/Region	Imports			Exports		
	Growth rate	Share in total		Growth rate	Share in total	
	1993-2006	1992	2006	1993-2006	1992	2006
APEC members						
Australia	4.4	3.0	1.2	13.1	1.2	1.0
Brunei	779.3	0.6	0.0	14.6	0.0	0.0
Canada	3.7	1.4	0.5	5.6	1.6	0.6
Chile	19.1	0.3	0.0	5.9	0.2	0.0
China	27.1	1.3	7.2	33.4	1.2	9.8
Hong Kong	8.5	4.8	4.0	16.9	4.7	7.5
Indonesia	15.1	1.3	2.0	23.0	0.4	0.8
Japan	7.1	21.2	14.2	12.3	17.8	16.8
Korea (South)	13.0	4.8	6.1	19.5	1.8	3.0
Malaysia	14.4	2.6	4.0	29.0	1.3	5.6
Mexico	30.1	0.1	0.1	26.6	0.2	0.3
New Zealand	9.7	0.7	0.5	13.0	0.1	0.1
Papua New Guinea	41.7	0.4	0.3	19.6	0.0	0.0
Peru	21.0	0.1	0.1	334.8	0.0	0.0
Russian Federation	16.0	0.6	0.4	24.4	0.1	0.0
Singapore	18.1	3.7	8.3	23.2	2.6	7.4
Thailand	23.7	0.9	4.0	27.1	1.0	2.8
USA	9.7	18.3	16.1	6.9	39.3	18.5
Vietnam	52.6	0.1	1.3	40.9	0.3	0.8
Totals						
APEC members	11.0	47.9	54.4	12.5	73.8	75.1
World	10.0	100.0	100.0	12.4	100.0	100.0

Source of basic data: United Nations, Comtrade Database, http://comtrade.un.org/

III. Methodology

3.1 Structure of the model and key assumptions[5]

The analytical tool used in the study follows the basic structure of the model developed by Inocencio et al. (2001). It is a model that divides the Philippine economy into four major blocks; namely, production, households, government, and foreign trade.

Each commodity in the production block has a representative firm that uses capital, labor and intermediate goods to produce its output. The firm is assumed to be an optimizing agent (i.e., maximizes profits) that is operating in a perfectly competitive market. The outcomes from the optimization process are used to specify the input demand and output supply equations in the model.

The household block is assumed to be representative of a household that is endowed with capital and labor. Payments to capital and labor, along with net transfer payments, represent household income. This income is then allocated for savings, taxes and consumption.

The consumption of goods and services is determined through an optimization process. The representative household is assumed to maximize its utility or satisfaction by selecting the quantities of goods and services it will consume subject to given prices and desired spending (income less taxes and savings).

The government generates revenues mainly through taxes on income, transactions and imports. Its collections are then allocated for expenditures on goods and services and net transfers. Any discrepancy between government revenues and outlays is then reflected though the budget deficit.

The foreign trade block captures exports and imports. It is modeled under the assumption that the Philippines is a price taker in world markets; this implies that the import supply and export demand functions are perfectly elastic. The formulation of the export supply and import demand equations are based on the assumption that domestic and foreign goods are, or at least perceived to be, not perfectly substitutable – the Armington assumption.

In the case of imports, it is assumed that domestic agents purchase a composite of a commodity that is sourced locally and from abroad. The objective of the domestic agent is to minimize the cost of purchasing this composite by selecting the quantities of domestic and foreign goods. The first order equations from this optimization process are used for the import demand equations of the model. The assumption that domestic and foreign goods are differentiated is captured by means of a Constant Elasticity of Substitution (CES) function.

The output of the representative firm is sold to domestic and foreign markets (export supply). The export supply equations are determined by assuming that the firm seeks to maximize its revenues from selling to these markets. In doing so, the firm is assumed to be constrained by its gross output, prices and an aggregator represented by a constant elasticity of transformation (CET) function.

The major blocks of the model are integrated by means of equilibrium conditions. The supply side is composed of the output of domestic firms and imports. On the other hand, the demand side is composed of government spending on goods and services, household consumption, intermediate demand and exports (foreign demand). These equilibrium conditions determine domestic prices. The model also includes a series of aggregating equations which calculate macroeconomic indicators.

The model developed by Inocencio et al. (2001) requires a few revisions to make it relevant for the analysis. The reason is that it does not disaggregate between the regional sources and destinations of imports and exports, respectively. This issue was addressed by reformulating the CES and CET functions that were used in the formulation of the import demand and export supply equations, respectively.

Equation 1 shows the revised formulation for the CES function. It indicates that, for each good, domestic agents purchase a commodity (DA_i) that is a composite of the domestically produced good (DD_i) and imports from region r (MR_{ir}).

$$DA_i = \left(DD_i^{\frac{\sigma_i^M - 1}{\sigma_i^M}} + \sum_r MR_{ir}^{\frac{\sigma_i^M - 1}{\sigma_i^M}} \right)^{\frac{\sigma_i^M}{\sigma_i^M - 1}} \qquad (1)$$

where: σ_i^M = elasticity of substitution between domestic goods and imports

The import demand equations, by source, are derived as follows. It is assumed that the objective of the domestic agent is to find the combination of the DD_i and MR_{ir} that will minimize the total cost of purchasing DA_i. This optimizing process is implemented under the assumption that DA_i and all prices are determined elsewhere in the model. The first order conditions from this process are used as the equations for the regional import demands.

The key properties of the import demand equations are as follows. First, the ratio import demand from a region and the domestic good is inversely related to the price of the imported good relative to the domestic good. In other words, the Philippine demand for goods produced in a given region will decline if there is an increase in the price of imports from that region relative to counterparts from other regions. Second, the import demand from a particular source is positively related to the demand for the composite good. That is, the demand for imports from a region will rise if the demand for the composite good is higher.

Export supply equations, by destination, are specified using a similar approach. However, the objective of the firm is to find the combination of exports to different destinations (XR_{ir}) and DD_i which will maximize the revenues from producing a pre-determined level of output (Q_i). The optimizing process is implemented under the assumption that prices to all destinations are given. It also assumes that the total output of a commodity is a CET composite of goods DD_i and XR_{ir} (Equation 2). The first order conditions from the optimization process are used as the regional export supply equations.

$$Q_i = \left(DD_i^{\frac{1+\sigma_i^X}{\sigma_i^X}} + \sum_r XR_{ir}^{\frac{1+\sigma_i^X}{\sigma_i^X}} \right)^{\frac{\sigma_i^X}{1+\sigma_i^X}} \qquad (2)$$

where: σ_i^X = elasticity of transformation between domestic goods and exports

The key properties of the export supply equations are as follows. First, exports to a particular destination are positively related to its relative price. In other words, domestic firms want to sell more to a region if there is an increase in its price relative to the prices of other regions. Second, exports to a particular destination are positively related to total output. That is, exports to a region will rise if total output is higher.

3.2 Disaggregation of the model and data sources

The model is disaggregated at two levels. The first is a disaggregation of the economy into commodities/ industries. The second disaggregates imports and exports by source and destination, respectively.

The model has 12 industries/commodities in the first level of disaggregation. These industries are (a) *Palay and Corn,* (b) *Other Crops*, (c) *Livestock and Poultry,* (d) *Other Agriculture*, (e) *Mining*, (f) *Rice and Corn Milling*, (g) *Food Manufacturing*, (h) *Non-food Manufacturing*, (i) *Transport and Communication*, (j) *Retail and Wholesale Trade*, (k) *Government Services*, and (l) *Other Services*.[6] The first four industries represent the *Agriculture, Fishery and Forestry* sector. Industries (*e*) to (*h*) and (*i*) to (*l*) belong to the *Industry* and *Services* sectors, respectively.

The model explicitly identifies five regions in the second level of disaggregation. The first region (*ASEAN-Other*) is composed of ASEAN countries that are not members of APEC; namely, Cambodia, Laos and Myanmar. The second region (*ASEAN-APEC*) is made-up of ASEAN members that are also APEC members. The third region (*APEC+Plus 3*) represents non-ASEAN countries which could be members of an *ASEAN Plus 3* trade agreement. These countries are China, Japan and South Korea. The fourth region (*APEC-Other*) is composed of the remaining members of APEC. The final region (*ROW*) represents the rest of the world. In the analysis, the potential members of the FTAAP are *ASEAN-APEC, APEC-Plus 3* and *APEC-Other*.

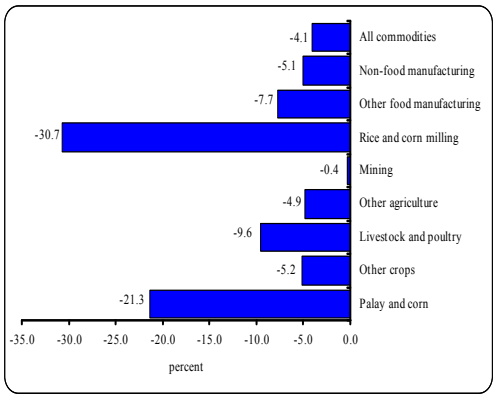
The dataset used in constructing the model is based on the 2000 Input-Output (IO) table of the Philippines.[7] This was complemented by tariff rates and other macroeconomic data from the Philippine Tariff

Commission and the National Accounts of the Philippines, respectively. Imports and exports were disaggregated by source and destination using information from the Comtrade database of the United Nations. All the elasticities used in the model were obtained from existing AGE models of the Philippines.

3.3 Implementation of the experiment

The trade reforms were implemented through the elimination of Philippine tariffs on commodities which are imported from potential FTAAP members. Figure 1 shows the direct impacts of removing these tariffs on the domestic prices of imported goods in the country. It indicates that the FTAAP is likely to reduce aggregate import prices in the Philippines. It also shows that the largest declines in import prices are for *Palay and Corn* and *Rice and Corn Milling.* This finding is explained by the fact that these commodities have the highest average tariff rates in the Philippines. Moreover, the country sources almost all of its imports from APEC members. The largest contributor to the aggregate change in import prices is *Non-food Manufacturing.* The reason is that this industry accounts for close to 69.5% of total imports.

Figure 1. Impacts on import prices, percent deviation from base



Note: Commodities which did not experience changes in import prices were not included in the figure.

IV. Simulation results

4.1 Macroeconomic impacts of the FTAAP

The simulation results suggest that a FTAAP has net economic benefits for the Philippines. This is represented by the expected expansion in Gross Domestic Product (GDP) and total employment (Table 3). The FTAAP is also projected to raise aggregate exports and imports. As expected, one downside from the agreement is the fall in government revenues. This finding is explained by the sharp decline in tariff revenues.

Table 3. Macroeconomic impacts of the FTAAP, percent deviation from base

Variable	Impact
Real GDP	0.6
Components of real GDP	
Personal consumption	2.2
Government consumption	-
Investment	7.1
Exports	0.7
Imports	5.7
Total employment	1.7
Government revenues	-14.2
Tariff revenues	-76.1

With the exception of real government spending, which is assumed constant in the analysis, all the expenditure components of national output are expected to expand. From an analytical perspective, the most significant is the increase in consumption expenditure. Accounting for about 71.8% of total spending, the increase in consumption explains 1.6 percentage points of the increase in GDP. The finding that the impact on GDP is lower than this value reflects the increase in imports.

At this point, it is worth noting that impacts on exports are likely to be underestimated. Confining the tariff changes to the Philippines omits the potential positive impacts on exports which could arise from the removal of trade barriers in other FTAAP member countries.

4.2 Sectoral impacts of the FTAAP

The simulation results show that all but two of the industries are expected to have higher levels output (Table 4). The largest projected expansion is for the *Transport and Communication* industry. This is closely

followed by *Other Crops* industry. The industries projected to have lower outputs are *Palay and Corn* and *Rice and Corn Milling*. This can be attributed to the relatively high initial tariffs and trade elasticities for these industries.[8] Despite the relatively sharp projected decline in the outputs of *Palay and Corn* and *Rice and Corn Milling*, aggregate output is still expected to expand because these industries only account for only 4.0% of the total. Given the assumption of sector-specific capital, changes in sectoral employment follow the pattern of changes in output.

Table 4. Impacts of the FTAAP on industries, percent deviation from base

Industry	Q	L	C	M	X
Palay and Corn	-2.8	-5.5	5.7	100.0	-2.1
Other Crops	1.1	3.1	1.6	2.0	-1.0
Livestock and Poultry	1.1	3.1	1.2	17.1	0.8
Other Agriculture	0.7	2.5	0.8	1.8	0.1
Mining	0.3	1.3	2.5	0.6	0.2
Rice and Corn Milling	-1.0	-3.0	8.1	200.0	1.2
Food Manufacturing	1.0	3.7	2.4	9.6	0.4
Nonfood Manufacturing	0.5	1.8	5.3	6.0	0.8
Transport and Communication	1.2	4.7	1.3	1.2	0.9
Retail and Wholesale Trade	0.8	3.0	0.9	0.8	0.4
Government Services	0.9	3.2	1.0	0.9	0.5
Other Services	0.0	0.0	2.5	0.0	0.0
All industries	0.6	1.7	2.2	5.7	0.7

Key: Q = output, L = employment, C = Consumption, M = imports, X = exports

Holding domestic prices constant, lower tariffs translate to lower relative prices of imports. The likely consequence is an increase in imports and lower domestic prices. The simulation results show that the imports of all commodities will rise. The largest increases are reported for *Palay and Corn* and *Rice and Corn Milling*; i.e., commodities that had the highest tariff rates in the base case.

Lower domestic prices improve the incentives from exporting. However, the impacts on exports also depend on the pattern of changes in output. The simulation results show that exports rise for all but two commodities – *Palay and Corn* and *Other Crops*. In the case of *Palay and Corn*, the increase in the relative price of exports suggests that the decline in exports is due mostly to lower output.[9] On the other hand, the decline in the exports of *Other Crops* is caused primarily by the lower relative price of exports.[10] However, as these commodities only account for only about 1.0% of the total, the net impact of the FTAAP on aggregate exports is still positive.

4.3 Effects on regional trade

The simulation results indicate an expansion in Philippine trade with all regions in the model (Figure 2). While the increase in exports across regions is relatively well-balanced, the story is quite different for imports. The expansion in imports is clearly biased in favor of the FTAAP member economies, especially the *APEC-ASEAN* region. The reason is that the removal of tariffs for FTAAP members reduces the price of imports from this region relative to other regions in the world (*ASEAN-Other* and *ROW*). This causes a shift in demand towards imports from FTAAP members.

Figure 2. Effects on regional trade volumes, percent deviation from base

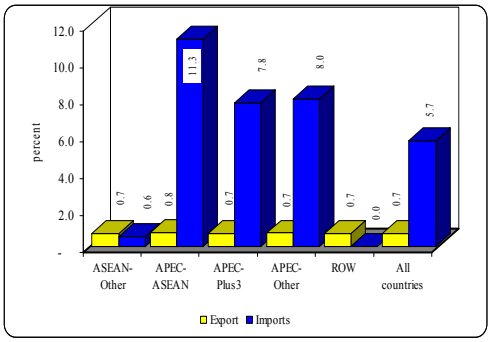
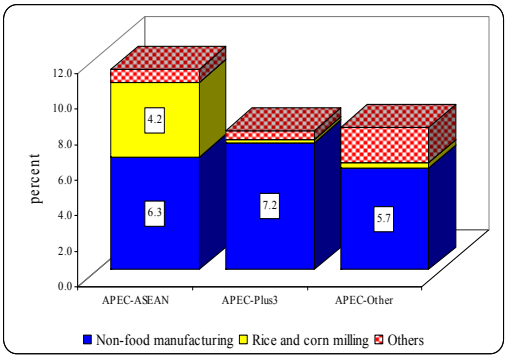


Figure 3 shows that the increase in the imports of FTAAP members is attributed mostly to the increase in imports of *Nonfood manufacturing*. It also indicates that the cause of the relatively large increase in imports from *APEC-ASEAN* countries is *Rice and Corn Milling*. The reason is that *APEC-ASEAN* accounts for about 84.0% of the Philippines' total imports of this commodity.

Figure 3. Sources of the higher imports for selected regions, percent deviation from base



5. Concluding remarks

The simulation results raise three important points. First, the FTAAP is likely to lead to net benefits in the form of higher GDP and employment. Second, not all industries are expected to gain as illustrated by the contraction of *Palay and Corn* and *Rice and Corn Milling*. Third, the FTAAP is likely to have a relatively strong impact on trade between the Philippines and its neighbors in Southeast Asia.

The analysis in this paper is indicates that the Philippines is likely to benefit from the FTAAP. However, there are still a number of aspects that need to be explored in before a more definite decision on the matter can be made. First, the paper focuses on the only on the impacts removing tariffs on Philippine imports. It ignores the effects of the actions of its potential partners in the FTAAP. This can have important implications on the results as the removal of trade barriers in large countries like the US and China can affect world prices. Second, the analysis ignores the impacts of removing non-tariff barriers. This can have important implications, especially on the impacts on the agricultural sector. Finally, more work needs to be done in examining the impacts on the other aspects of economic development. Some examples that immediately come to mind are the effects on poverty and income inequality.

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Notes

1. For more details, see APEC (2007).
2. Medalla and Lazaro (2005) provides an update of the Philippines' participation in free trade areas and regional trading arrangements.
3. An excellent collection of papers on recent models can also be found in the websites of Monash University <http://www.monash.edu.au/policy/>, Ecomod <http://www.ecomod.net/>, GTAP <https://www.gtap.agecon.purdue.edu/>, PEP <http://www.pep-net.org/NEW-PEP/index.html>, etc.
4. Some examples are Cabalu and Rodriguez (2007), Cororaton (2006), Rodriguez and Cabanilla (2006), Cororaton et al. (2005), Cororaton (2004), Cororaton (2003), Inocencio et al. (2001), Cororaton (2000), Cororaton (1994), Gaspay (1993), Clarete and dela Pena (1992), Clarete and Warr (1992), Clarete (1991) and Clarete (1984b).
5. The equations of the model are presented in the Annex.
6. *Other Agriculture* includes the fishery and forestry industries. On the other hand, *Food Manufacturing* excludes rice and corn milling.
7. The model of Inocencio et al. (2001) uses information from the 1994 Input-Output table.
8. In the base case, the tariff rates for *Palay and Corn* and *Rice and Corn Milling* are 27.5% and 44.3%, respectively. These are at least four times higher

than 5.6% weighted average of tariff rates for all commodities.

9. The simulation results suggest that the price of its exports relative to its price in the domestic market is expected to rise by 2.49%.
10. The simulation results suggest that the price of its exports relative to its price in the domestic market is expected to fall by 1.55%.

References

APEC, 2007. Strengthening regional economic integration: A report on regional economic integration, including a possible free trade area of the Asia-Pacific as a long-term prospect [online]. Available from: http://www.apec.org/apec/publications/free_downloads/2007.html [Accessed 11 November 2007].

Cabalu, H. and Rodriguez, U., 2007. Trade-offs in trade liberalization: Evidence from the 2005 Philippine tariff changes. *Journal of Economic Integration*, 22(3): 637-663.

Clarete, R. and dela Pena, B., 1992. *Options for tariff protection policy in the Philippines* [online]. Research School of Pacific Studies, Australian National University. Available from: http://rspas.anu.edu.au/economics/apex/papers.php [Accessed 02 December 2007].

Clarete, R. and Warr, P., 1992. *The theoretical structure of the APEX Model of the Philippine economy* [online]. Research School of Pacific Studies, Australian National University. Available from: http://rspas.anu.edu.au/economics/apex/papers.php [Accessed 02 December 2007].

Clarete, R., 1984a. The costs and consequences of trade distortions in a small open economy. Thesis (PhD). University of Hawaii.

Clarete, R., 1984b. *A Shoven and Whalley model of a small open economy: An illustration with Philippine tariffs.* Working Paper No. 85-1, Resource Systems Institute, East-West Center. Hawaii.

Clarete, R., 1991. A general equilibrium analysis of the tax burden and institutional distortions in the Philippines. *In*: L. Shirazi and J. Shah, *Tax policy in developing countries*. Washington D.C.: World Bank, 188-200.

Cororaton, C. and Cuenca, J., 2000. *An analysis of Philippine trade reforms in 1995-2000 using the 1994 APEX model* [online]. Discussion Paper Series No. 2000-36, Philippine Institute for Development Studies. Available from: http://publication.pids.gov.ph/details.phtml?pid=139 [Accessed 8 March 2005].

Cororaton, C., 1994. *Structural adjustment policy experiments: The use of Philippine CGE models* [online]. Discussion Paper No. 94-03, Philippine Institute for Development Studies. Available from: http://publication.pids.gov.ph/details.phtml?pid=336 [Accessed 24 June 2004].

Cororaton, C., 2003. *Analysis of trade reforms, income inequality and poverty using microsimulation approach: The case of the Philippines* [online]. Discussion Paper Series No. 2003-09, Philippine Institute for Development Studies. Available from: http://publication.pids.gov.ph/details.phtml?pid=2318 [Accessed 24 June 2004].

Cororaton, C., 2004. Philippine-Japan bilateral agreements: analysis of possible effects on unemployment, distribution and poverty in the Philippines using CGE-microsimulation approach [online]. Discussion Paper Series No. 2004-01, Philippine Institute for Development Studies. Available from: http://publication.pids.gov.ph/details.phtml?pid=2658 [Accessed 1 July 2006].

Cororaton, C., 2006. *The impact of trade reform in the 1990s on welfare and poverty in the Philippines* [online]. MPIA Working Paper 2006-11, Poverty and Economic Policy Research Network. Available from: http://132.203.59.36:81/Group/papers/wp.htm#MPIA [Accessed 3 April 2008].

Cororaton, C., Cockburn, J. and Corong, E., 2005. *Doha scenarios, trade reforms, and poverty in the Philippines: A CGE analysis* [online]. MTID Discussion Paper No. 86, Markets, Trade and Institutions Division, International Food Policy Research Institute. Available from: http://www.ifpri.org/divs/mtid/dp/mtidp86.htm [Accessed 4 May 2008].

Gaspay, M., 1993. Getting prices right, how important is it? A CGE modeling approach. *Philippine review of economics*, 30(2): 189-233.

Gilbert, J., Scollay, R. and Wahl, T., 2000. The APEC food system: Implications for agricultural and rural development policy. *The developing economies*, 38(3): 308-29.

Inocencio, A., Dufournaud, C. and Rodriguez, U., 2001. *Impact of tax changes on environmental emissions: An applied general equilibrium approach for the Philippines* [online]. IMAPE Research Paper No. 7, Policy and Development Foundation. Available from: http://network.idrc.ca/es/ev-64664-201-1-DO_ TOPIC.html [Accessed 3 April 2005].

Lewis, J., Robinson, S. and Wang, Z., 1995. *Beyond the Uruguay Round: The implications of an Asian Free Trade Area* [online]. Policy Research Working Paper No. 1467, World Bank. Available from: http://econ.worldbank.org/external/default/main?pagePK=64165259&theSitePK=469372&piPK=64165421&menuPK=64166322&entityID=000009265_3961019112656 [Accessed 11 November 2007].

McKibbin, W., 1996. *Quantifying APEC trade liberalization: A dynamic analysis* [online]. Working Paper in Trade and Development No. 1, Research School of Pacific and Asian Studies, Australian National University, Canberra, Australia. Available from: http://www.brookings.edu/papers/1996/03globaleconomics_mckibbin.aspx [Accessed 11 November 2007].

Medalla, E. and Lazaro, D., 2005. *What's happening in the Philippine free trade agreements?* [online]. Policy Notes No. 2005-05, Philippine Institute for Development Studies. Available from: http://publication.pids.gov.ph/details.phtml?pid=3729 [Accessed 7 October 2007].

Rodriguez, U. and Cabanilla, L., 2006. *The impact of a Philippine-US FTA: The case of Philippine agriculture* [online]. Discussion Paper Series No. 2006-06, Philippine Institute of Development Studies. Available from: http://publication.pids.gov.ph/details.phtml?pid=3756 [Accessed 8 December 2006].

Scollay, R. and Gilbert, J., 1999. *CGE assessments of the gains from APEC trade liberalization: A survey and some new results* [online]. APEC. Available from: http://www.apec.org/apec/publications/free_downloads/1999.html [Accessed 11 November 2007].

Shoven, J. and J. Whalley, 1992. *Applying general equilibrium.* Cambridge: Cambridge University Press.

Srinivasan, T. and J. Whalley, 1986. *General equilibrium trade policy modeling*. Massachusetts: MIT Press.

Wang, Z. and Coyle, B., 2002. APEC open regionalism and its impact on the world economy: A computable general equilibrium analysis. *World economy*, 25: 563-89.

Annex

Model equations and variable definitions

Model equations

Production block

Industry value added

$$VA_i = \alpha_i L_i^{\beta_i} K_i^{1-\beta_i}$$

Labor demand

$$L_i = \frac{\beta_i \cdot PVA_i \cdot VA_i}{W}$$

Price of value added

$$PVA_i = \frac{PCS_i - \sum_j A_{ij} \cdot PCD_i - \tau_{1i} \cdot P_i}{A_i}$$

Return to fixed capital

$$RFK_i = PVA_i \cdot VA_i - W \cdot L_i$$

Industry output

$$Q_i = \frac{VA_i}{A_i}$$

Intermediate demand

$$ID_{ji} = A_{ji} \cdot Q_i$$

Household block

Gross income of households

$$Y = \sum_i W \cdot L_i + \left(1 - \tau_2\right) \cdot (1 - \eta_1) \cdot \sum_i RFK_i$$

Disposable income of households

$$YD = Y + TRHG + TRHF - TAXY$$

Household savings

$$SH = \eta_2 \cdot YD$$

Household consumption

$$C_i = \frac{\gamma_i \cdot \left(1 - \eta_2\right) \cdot YD}{PCD_i}$$

Government block

Government revenues

$$GREV = TAXI + TAXY + TAXM + TAXC$$

Revenues from indirect taxes

$$TAXI = \sum_i \tau_{1i} \cdot P_i \cdot Q_i$$

Revenues from income taxes

$$TAXY = \tau_3 \cdot Y$$

Revenues from import taxes

$$TAXM = \sum_r \sum_i \tau_{4ri} \cdot PMFR_{ri} \cdot EXC \cdot MR_{ri}$$

Revenues from corporate taxes

$$TAXC = \tau_2 \cdot \sum_i RFK_i$$

Government spending on goods

$$GSPEND = \sum_i PCD_i \cdot G_i$$

Government savings

$$SG = GREV - GSPEND - TRHG - TRRG$$

Foreign trade

Foreign savings

$$ST = \sum_r \sum_i PMFR_{ri} \cdot EXC \cdot MR_{ri} + TRRG - TRHR - \sum_r \sum_i PXFR_{ri} \cdot EXC \cdot XR_{ri}$$

Export supply, by commodity and destination

$$XR_{ri} = DD_i \cdot \left[\frac{\delta_{ri}^X}{1 - \delta_{ri}^X} \cdot \frac{PXR_{ri}}{P_i} \right]^{\sigma_i^X}$$

Import demand, by commodity and destination

$$MR_{ri} = DD_i \cdot \left[\frac{\delta_{ri}^M}{1 - \delta_{ri}^M} \cdot \frac{P_i}{PMR_i} \right]^{\sigma_i^M}$$

Domestic price of exports, by commodity and region

$$PXR_{ri} = PXFR_{ri} \cdot EXC$$

Domestic price of imports, by commodity and region

$$PMR_{ri} = PMFR_{ri} \cdot EXC \cdot \left(1 + \tau_{4ri}\right)$$

Other equations

Product market equilibrium

$$Q_i = DA_i + \sum_r \left(XR_{ri} - MR_{ri} \right)$$

Domestic spending by commodity

$$DA_i = C_i + INV_i + G_i + \sum_j ID_{ij}$$

Investment by commodity

$$INV_i = \frac{\psi_i \cdot S}{PCD_i}$$

Total savings (eliminated via Walra's Law)

$$S = SH + SG + ST + \eta_1 \cdot \left(1 - \tau_2\right) \cdot \sum_i RFK_i$$

Domestic demand for the domestically produced commodity

$$DD_i = Q_i - \sum_r XR_{ri}$$

Total employment

$$LTOT = \sum_i L_i$$

Composite price in demand

$$PCD_i = \frac{P_i \cdot DD_i + \sum_r PMR_{ri} \cdot MR_{ri}}{DA_i}$$

Composite price in supply

$$PCS_i = \frac{P_i \cdot DD_i + \sum_r PXR_{ri} \cdot XR_{ri}}{Q_i}$$

Consumer price index (numeraire)

$$CPI = \sum_i \gamma_i \cdot PCD_i$$

Variable definitions

Endogenous variables

Variables	Description
C_i	Household consumption of commodity i
DA_i	Domestic spending on commodity i
DD_i	Domestic demand for the domestically produced component of commodity i
EXC	Exchange rate
$GREV$	Government revenues
$GSPEND$	Government spending on goods
ID_{ij}	Intermediate demand for commodity i of industry j
INV_i	Investment demand for commodity j
L_i	Labor demand of industry i
$LTOT$	Total employment
MR_{ri}	Imports of commodity i that are sourced from region r
PCD_i	Composite price in demand of commodity i
PCS_i	Composite price in supply of commodity i
P_i	Output price of industry i
PMR_{ri}	Domestic currency price of importable good i, sourced from country r
PVA_i	Price of value added of industry i
PXR_{ri}	Domestic currency price of exportable good i, destined for country r
Q_i	Output of industry i
RFK_i	Return to fixed capital in industry i
S	Total savings
SG	Government savings
SH	Household savings
$TAXC$	Tax revenues from corporations
$TAXI$	Tax revenues from indirect taxes
$TAXM$	Tax revenues from import tariffs
$TAXY$	Tax revenues from income

VA_i	Value added of industry i
XR_{ri}	Exports of commodity i that are destined for region r
Y	Household income
YD	Household disposable income

Exogenous variables and parameters

Variables	Description
γ_i	Share of commodity i in total household spending
τ_{1i}	Tax rate on goods and services
τ_2	Tax rate on corporate income
τ_3	Tax rate on household income
τ_{4ri}	Tariff rate on commodity i, imported from region r
η_1	Corporate savings rate
η_2	Household savings rate
α_i	Constant in the production function
δ_{ri}^X	share parameter in the transformation function (i.e., between exports and domestic output)
δ_{ri}^M	share parameter in the Armington function (i.e., between imports and domestic output)
σ_i^X	elasticity of transformation between domestic goods and exports
σ_i^M	elasticity of substitution between domestic goods and imports
ψ_i	Investment share of industry i
Ai	Proportion of value added in total output
Aij	Input-output coefficient
CPI	Consumer price index
Gi	Government expenditure on good i
LS	Labor supply
PMFRri	Foreign price of commodity i, imported from region r
PXFRri	Foreign price of commodity i, exported to region r
ST	Foreign savings
TRHF	Net transfers from foreigners to households
TRHG	Net transfers from government to households
TRRG	Net transfers from government to foreigners
W	Wage rate

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Kwang-Hee Kim

Department of MIS, Hyupsung University, South Korea

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Japan.

ABSTRACT

The component and material industries of a nation must be closely monitored because these industries are expected to mark rapid growth in the near future. In this study, the current status of international competitiveness of domestic components and materials will be explored and evaluated more clearly. The import and export status of component and material industries of three major import and export countries to Korea, including the U.S., China, and Japan, will be examined.

I. Introduction

The financial crisis that began in the United States has expanded to an actual economic crisis in which the entire global economy, including Korea, is experiencing a tough road to recovery. Under such circumstances, some indices of our domestic economy are showing recovery trends in the second quarter of 2009. However, this may only be a temporary slowdown of the downward trend resulting from continued liquidity supply by the government. There remain concerns on the phenomenon called 'broken wing,' in which the economy temporarily rises two or three times in the midst of rapid falling and results in a long-term stagnation.

On the other hand, while Korea created a large trade surplus of 34.75 billion dollars in component and material industries in 2008, the trade balance of component and material industries with Japan recorded -20.94 billion dollars, revealing its weakness against Japan. The trade surplus with the world in 2008 resulted in the first deficit in since 1997.

In this study, the current status of international competitiveness of domestic 'components and materials' will be explored and evaluated more clearly. Component and material industries are the motivation for our nation's growth as an advanced economy. Focusing on three major import and export countries to Korea, including the U.S., China and Japan, the import and export status of component and material industries with these countries will be examined.

II. Trade Balance with Major Import and Export Countries

2.1. Major Import and Export Countries

The U.S. and Japan are important import and export markets to Korea that cannot be neglected. In fact, ever since the Korean government began to record trade statistics (1965), the U.S. and Japan have mainly been

the top two import and export countries to Korea for nearly 40 years.

Korea was mainly exporting wigs and veneer boards in the 1960s, shoes, clothes and toys in the 1970s and 1980s, electronic appliances and automobiles in the 1990s, and semiconductors, mobile phones and automobiles in the 2000s, mostly to the U.S., the largest export market in the world.

Japan was the first to enter the world of advanced economies among Asian countries, and was also the major market to Korea for semi products and core components necessary for rapid economic growth and export. Moreover, the geographic proximity of Japan, Hong Kong, and Singapore to Korea facilitated the export and import of products.

A new change was brought to import and export countries in the mid-1990s in that China had rapidly risen in economic power. Surpassing the US and Japan in the mid-2000s, China became Korea's number one import and export country.

Table 1. Major import and export countries of Korea (1965~2008)

(Unit: Million dollars)

	1965		1970		1980		1990		2000		2008	
Import	Nation	Amount	Nation	Amount	Nation	Amount	Nation	Amount	Nation	Amount	Nation	Amount
1	US	62	US	395	US	4,607	US	19,360	US	37,611	China	91,389
2	Japan	45	Japan	234	Japan	3,039	Japan	12,638	Japan	20,466	US	46,377
3	Other	17	Hong Kong	26	Saudi Arabia	946	Hong Kong	3,780	China	18,455	Japan	28,252
4	Hong Kong	11	Germany	27	Germany	876	Germany	2,849	Hong Kong	10,708	Hong Kong	19,772
5	Sweden	5	Canada	20	Hong Kong	823	Singapore	1,805	Taiwan	8,027	Singapore	16,293
	1965		1970		1980		1990		2000		2008	
Export	Nation	Amount	Nation	Amount	Nation	Amount	Nation	Amount	Nation	Amount	Nation	Amount
1	US	182	Japan	809	Japan	5,858	Japan	18,574	Japan	31,828	China	76,930
2	Japan	175	US	585	US	4,890	US	16,942	US	29,242	Japan	60,956
3	Other	31	Germany	67	Saudi Arabia	3,288	Germany	3,284	China	12,799	US	38,365
4	Germany	16	Malaysia	58	Australia	1,753	Australia	2,589	Saudi Arabia	9,641	Saudi Arabia	33,781
5	Philippine	11	France	52	Kuwait	680	China	2,268	Australia	5,959	UAE	19,248

Source: Korea International Trade Association.

Exports with China suddenly expanded in 1992 when the diplomatic relationship between Korea and China recovered. In 2003, China surpassed the U.S. as the number one export country for Korea. Furthermore, in 2007, China surpassed Japan to become the number one import country for Korea. Korea is now mainly exporting semiconductors, computers, mobile phones, and automobiles to China.

China, the U.S. and Japan are the three major import markets of Korea as of 2008, followed by Saudi Arabia and the UAE.

Korea imports fibers and electronic appliances from China, steel materials and electronic components from Japan, and machineries, aircraft and agricultural products from the U.S. Crude oil is the largest import item from Saudi Arabia and the UAE.

Trade statistics of Korea's three largest import and export countries are summarized in Table 2. First, a trade surplus of 14.46 billion dollars was created with China, and the trade surplus with the U.S. was 8.01 billion dollars. In contrast, a tremendous trade deficit of -32.7 billion dollars resulted with Japan. Such a trade deficit with Japan is thought to be excessively large compared to the amount of import and export between the two countries.

Table 2. The 3 largest import and export partners of Korea

(All numbers in millions of dollars)

	Import		Export		Balance	
	2007	2008	2007	2008	2007	2008
Total (A)	371,489,086	422,007,328	356,845,733	435,274,737	14,643,353	-13,267,409
China (B)	81,985,183	91,388,900	63,027,802	76,930,272	18,957,381	14,458,628
US (C)	45,766,102	46,376,610	37,219,301	38,364,783	8,546,801	8,011,827
Japan (D)	26,370,191	28,252,471	56,250,126	60,956,391	-29,879,935	-32,703,920
B/A	22.1%	21.7%	17.7%	17.7%	-	-
C/A	12.3%	11.0%	10.4%	8.8%	-	-
D/A	7.1%	6.7%	15.8%	14.0%	-	-

Source: The Ministry of Knowledge and Economy.

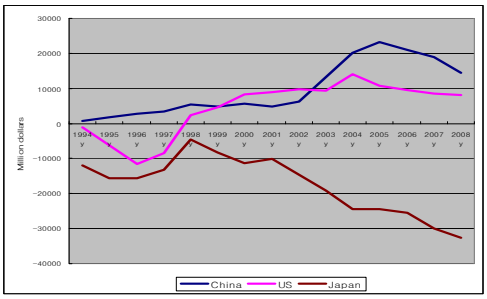
The export dependence of Korea, as of 2008, with the three importing and exporting countries above was 39.4% (21.7% for China, 11.0% for the U.S., and 6.7% for Japan). Import dependence was 40.5% (17.7% for China, 8.8% for the U.S., and 14.0% for Japan). As a result, about 40% of Korea's trade depends on the three major import and export countries. This shows a gross imbalance in Korea's import and export structure.

Specifically, Korea was found to depend on 21.7% of its exports and 17.7% of its imports with China, which displays an improved relationship between Korea and China in terms of imports and exports. On the other hand, in the case of Japan, while Korea only depends on Japan for 6.7% of its exports, import dependence was found to be more than twice that at 14.0%. Export dependence on the U.S. was 12.3% in 2007, but this was reduced to 11.0% in 2008. Import dependence was also reduced from 10.4% to 8.8% during the same period. The decline is larger in comparison to China and Japan.

2.2. Import and Export Characteristics with the U.S., China and Japan

According to Table 1 the trade deficit with Japan has been continuously expanding without a single reduction since 2001, with Korea clearly showing a weakness against Japan. The trade balance with China continued to show an increased surplus, but the size of the surplus decreased in 2005. This suggests that a great change is occurring in the trade balance with China. The trade balance with the U.S. also showed a favorable trend in 1996, finally turning to a surplus in 1998. The trend of the surplus continued until 2004, and the size of the surplus has been gradually decreasing ever since.

Figure 1. Trade balance trends with the three countries



Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics

In the case of imports and exports with China and the U.S., the trade balance has been maintained as a surplus until now. However, the trade balance with Japan is showing an increase in its deficit every year.

Exports to China in 2001 recorded 18.19 billion dollars, which surpassed exports to Japan at 16.51 billion dollars. Exports to China are continuing its increasing trend, as shown by surpassing the exports to the U.S. in 2003 (34.22 billion dollars) at 35.11 billion dollars. The size of imports also experienced many changes. Imports from China reached 29.59 billion dollars in 2004 to overcome 28.78 billion dollars from the U.S. In 2007, imports from China were 63.03 billion dollars, which was larger than 56.25 billion dollars of imports from Japan.

The most prominent characteristic of China's recent imports and exports trend is the fact that there is a faster increase in imports than an increase in exports. For example, exports to China increased by 29.47 billion

dollars from 2005 to 2008 while imports during the same period increased by 38.28 billion dollars.

The trade balance of Korea with the U.S. has been a surplus since 1998. Nevertheless, careful attention must be paid to the fact that the surplus of 14.07 billion dollars in 2004 was the peak, and surplus with the U.S. has been in a decreasing trend ever since. The trade balance with the U.S. as of 2008 is much smaller at 8.01 billion dollars. This is a result of a faster increase in imports than exports.

In fact, exports to the U.S. were 42.85 billion dollars in 2004 and 46.38 billion dollars in 2008, which is actually an increase of 3.53 billion dollars. However, imports from the U.S. during the same period increased by about 10 billion dollars, from 28.78 to 38.37 billion dollars.

Table 3. Size of imports and exports with the three countries

(All numbers in millions of dollars)

Year	China		US		Japan	
	Export	Import	Export	Import	Export	Import
1994	6,203	5,463	20,553	21,579	13,523	25,390
1995	9,144	7,401	24,131	30,404	17,049	32,606
1996	11,377	8,539	21,670	33,305	15,767	31,449
1997	13,572	10,117	21,625	30,122	14,771	27,907
1998	11,944	6,484	22,805	20,403	12,238	16,840
1999	13,685	8,867	29,475	24,922	15,862	24,142
2000	18,455	12,799	37,611	29,242	20,466	31,828
2001	18,190	13,303	31,211	22,376	16,506	26,633
2002	23,754	17,400	32,780	23,009	15,143	29,856
2003	35,110	21,909	34,219	24,814	17,276	36,313
2004	49,763	29,585	42,849	28,783	21,701	46,144
2005	61,915	38,648	41,343	30,586	24,027	48,403
2006	69,459	48,557	43,184	33,654	26,534	51,926
2007	81,985	63,028	45,766	37,219	26,370	56,250
2008	91,389	76,930	46,377	38,365	28,252	60,956

Source: The Ministry of Knowledge and Economy.

On the one hand, the trade balance with Japan was -11.87 billion dollars in 1994 and reduced to -4.60 billion dollars in 1998 due to the influence of the foreign exchange crisis. The deficit rapidly increased to -11.36 billion dollars in 2001 and -24.38 billion dollars in 2005. In 2008, the import deficit exceeded the 30 billion dollar amount for the first time in its history to -32.70 billion dollars.

Since the establishment of diplomatic relations between Korea and Japan in 1965, the trade balance of Korea and Japan has never reached a surplus, and the deficit amount is increasing every year. Moreover, the increase in such a deficit is adding to the concerns about the Korean economy.

The time it took for the trade balance with Japan to actually exceed -20 billion dollars after reaching -10 billion dollars was 10 years (-11.87 in 1994 to -24.44 in 2004), but the time for the trade balance to exceed -30 billion dollars after reaching -20 billion dollars was only 4 years (-24.44 in 2004 to -32.70 in 2008).

III. Import and Export Status of Component and Material Industries

3.1. Trends of Component and Material Industries

The 'component and material industries' of a nation must be closely monitored because these industries are expected to mark rapid growth and become a Cash Cow in the near future. KMAC defines 'components and materials' as all intermediate products between materials and the final processing step called assembly. In other words, components and materials do not provide efficacy as consumer goods or producer goods, but are characterized as intermediate goods used for production of finished products. They induce derived demand originated by final goods.

In addition, according to the "Act on Special Measures for the Promotion of Specialized Enterprises, etc. for Component and Material" enforced by the Korean government, 'components and materials' refer to goods with the following three characteristics.

First, they contribute to higher added values of final goods. Second, it refers to an excellent technological propagation effect and added value creation using advanced or core technologies. Lastly, they have large inter-industrial effects.

Such component and material industries take an important role in the balanced development of a nation's economy and directly influence export accomplishments. Furthermore, since components and materials determine the competitiveness of finished goods, such as quality, price and performance, it is not an exaggeration to say that they operate as core elements of the nation's manufacturing industry.

According to the data provided by the National Statistical Office and KOAMI, component and material industries compose 42.4% (420 trillion won) of the production of the entire manufacturing industry as of 2007. They also comprise 48.0% (1.42 million people) of the manufacturing employment and 60.8% (206 trillion won) of added value created.

In terms of imports and exports, component and material industries were shown to make up a strong basis of trade surplus ever since the surplus turnover in 1997. The weight of imports from component and material industries in total imports from the world dropped from 44.0% in 2000 to 34.2% in 2008. Accordingly, despite the fact that Korea recorded a trade balance of -13.27 billion dollars with the world in 2008, component and material industries created a large surplus of 34.75 billion dollars. Thus, the technological power and the potential of the domestic manufacturing industry can be seen.

Among exports from Korea to the world, the size of component and material industries increased by 9.5%, from 34.0% in 1995 to 43.5% in 2008. On the other hand, the size of 'material industry' in component and material industries dropped from 48.0% in 1995 to 35.5% in 2008. The size of 'component industry' increased from 52.0% in 1995 to 64.5% in 2008. Particularly, the percentage of exports of electronic appliances (components of electronic, video, sound, and communication devices) and transportation machine components increased significantly.

Observing the export structure of each business under component and material industries for 2008, the overwhelming top product was electronic components, with chemical compounds and products the next highest. The percentage of these two types of products was 51.1% of all exports from component and material industries.

Table 4. Import and export trends of Korean component and material industries

(All numbers in millions of dollars)

	1995			2000			2005			2008		
Classification	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance
All Industries	125,058	135,119	-10,061	172,268	160,481	11,787	284,419	261,238	23,180	422,007	435,275	-13,267
Component, Material Industries	42,523	46,479	-3,956	79,915	70,568	9,346	123,793	101,130	22,663	183,515	148,764	34,751
Material	20,412	22,456	-2,044	28,262	23,857	4,405	44,313	38,739	5,574	65,181	64,668	513
Fiber products	5,684	2,407	3,277	6,528	2,356	4,172	4,686	2,370	2,316	4,211	2,594	1,616
Compounds, Chemical Products	7,819	9,473	-1,654	11,382	9.922	1,460	21,639	14,556	7,083	32,216	20,716	11,500
Rubber and Plastic Products	1,760	654	-1,106	2,732	797	1,935	4,583	2,026	2,557	5,848	3,366	2,482
Non-metals	193	928	-735	622	798	-176	899	1,979	-1,080	906	2,949	-2,044
Primary Metals	4,956	8,994	-4,038	6,998	9,984	-2,986	12,505	17,809	-5,303	22,001	35,042	-13,041
Hot rolling and pressure products	363	759	-396	1,790	2,047	-257	4,288	6,390	-2,102	6,048	16,643	-10,595
Component	22,111	24,024	-1,913	51,653	46,711	4,942	79,480	62,390	17,089	118,334	84,096	34,237
Assembly Metal	754	608	146	1,194	622	572	2,148	1,008	1,140	3,674	1,657	2,017
General Machineries	2,119	6,552	-4,433	3,971	5,538	-1,567	8,650	9,374	-724	16,987	15,551	1,436
Computer and Office Components	812	1,168	-356	7,611	5,149	2,463	6,027	3,430	2,597	4,790	3,817	973

Electric Components	1,576	2,494	-918	3,117	4,600	-1,483	6,387	7,595	-1,208	12,795	11,118	1,676
Electronic, Video, Sound and Communication Components	14,971	8,486	-6,485	32,715	26,373	6,341	45,442	32,822	12,620	61,615	40,871	20,744
Memory Semiconductors	7,102	225	6,877	15,435	1,165	14,270	16,057	1,425	14,632	12,361	2,336	10,025
Other IC Semiconductors	10,924	4,196	6,728	9,298	16,024	-6,726	12,455	20,047	-7,592	12,112	21,373	-9,261
Precision Components	168	691	-523	425	1,642	-1,217	1,446	3,692	-2,246	3,358	4,353	-995
Transportation Components	1,711	4,025	-2,314	2,621	2,788	-167	9,379	4,469	4,910	15,115	6,729	8,386
Automobile Components	914	1,939	-1,025	2,140	1,644	-496	8,461	3,221	5,240	13,757	4,701	9,056

Note1: The year of memory semiconductors indicated in the column of 1995 is actually 1996.
Note2: Shaded components show a high ratio of trade surplus or deficit among component and material industries.
Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

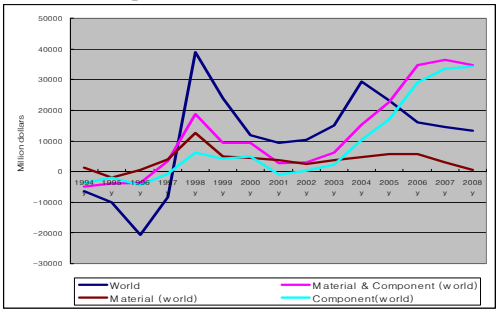
Examining the import structure of each business under component and material industries, the top two products were electronic products and primary metals. The weight of these two products took 51.0% of the total imports by component and material industries.

A serious imbalance between imports and exports was verified in Korean component and material industries because a few products compose the majority of imports and exports. The surplus and deficit of specific products were clearly distinguishable.

In fact, first and second places in trade surplus among all items under component and material industries were 11.50 billion dollars of 'chemical compounds and products' and 10.03 billion dollars of 'memory semiconductors'. In contrast, first and second place in trade deficit were -10.60 billion dollars of 'hot rolling and pressed products' and -9.26 billion dollars of 'other integrated circuit semiconductors'.

Figure 2 shows the trend of the trade balance of component and material industries with the world for the past 15 years, from 1994 until 2008.

Figure 2. Trend of global trade balance in component and material industries



Source: Computed by the author from information by the Ministry of Knowledge and Economy on component and material statistics.

First, the trade surplus of the 'material industry' with the world after the mid-1990s exceeded the trade surplus of the 'component industry'. This aspect has reversed since the mid-2000s. After the mid-2000s, while the component industry showed a trend of a large trade surplus, the material industry only created a slight surplus.

32.24 billion dollars among 34.75 billion dollars of the surplus created by component and material industries in 2008 was accounted for by component industry, which totals 98.5%. The recent trade surplus of Korean component and material industries with the world was a result of the component industry alone.

Second, the trade balance with the world and of component and material industries has maintained the same path of movement. However, in 2006, they displayed completely different patterns. As of 2008, the former has turned to trade deficit and the latter is still recording a high level of trade surplus. Actually, after 1998, the trade balance with the world continued the surplus pattern until it turned to a deficit in 2008. The biggest reasons for this trend are a smooth expansion of the trade surplus by the component industry and a smaller surplus created by the material industry since 2007.

More important is the fact that while the component industry is still maintaining a large surplus, the material industry has shown stagnation since 1999 and recently turned downward for an unknown reason (refer to Figure 2). This suggests that there is an abnormal trend in the surplus condition of the material industry.

3.2. Import and Export of Components and Materials with the U.S., China and Japan

3.2.1. Import and Export with China

The trade balance of Korean components and material industries with China is still maintaining a surplus. However, the trend has recently shown many changes.

Export of components and material industries to China in 1997 was 5.94 billion dollars, which exceeded 4.93 billion dollars of exports to Japan. In 2002, 12.60 billion dollars of exports exceeded 10.51 billion dollars of exports to the U.S.

There were also many changes in the size of imports. Components and material imports from China were 13.04 billion dollars in 2002, exceeding 14.44 billion dollars of the U.S. Finally, in 2008, 41.59 billion dollars' worth of components and materials were imported from China, surpassing 34.68 billion dollars of imports from Japan.

The export volume of components and materials to China in 2008 compared to 1994 has increased by a rate of 23.2 for exports and 23.6 for imports. Accordingly, China is now the largest import and export partner of Korea and has become the largest import and export target of component and material industries.

The most significant characteristic of components and material industries with China is that Korea never recorded a trade deficit until 2008. Korea created a large surplus of over 10 billion dollars. Another characteristic is that the ratio of components and material industries in import and export with China is extremely high compared to the U.S. and Japan.

As of 2008, the ratio of components and material industries among the 91.39 billion dollars of exports to China was 60.3% (35.7% to the U.S. and 48.6% to Japan). During the same year, the ratio of components and material industries among the 76.93 billion dollars of exports to China was 54.1% (41.1% to the U.S. and 56.9% to Japan). Therefore, if exports to China receive a blow in the global market, Korean exports to China will be severely affected, especially components and materials.

Components and material industries that had been recording an overwhelming trade surplus with China began to show signs of a slowdown in the surplus trend with a peak in 2005 at 20.02 billion dollars. The size of surplus had been reduced to 13.48 billion dollars in 2008.

In particular, the 'material industry' first recorded a surplus deficit of -1.61 billion dollars in 2008, down from 7.34 billion dollars of surplus in 2005. However, when the discussion is limited to the 'component industry', the trade balance in 2008 with China was still a large surplus of 15.08 billion dollars.

Table 5. Trend of components and material import and export with China

(All numbers in millions of dollars)

Classification	1995			2000			2005			2008		
	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance
All Industries	9,144	7,401	1,743	18,455	12,799	5,656	61,915	38,648	23,267	91,389	76,930	14,459
Component, Material Industries	3,816	2,530	1,286	10,074	5,639	4,435	37,571	17,556	20,015	55,073	41,594	13,479
Material	3,067	1,944	1,123	5,939	2,331	3,608	14,679	7,340	7,339	18,273	19,879	-1,606
Fiber Products	549	1,081	-532	848	865	-17	1,033	1,045	-12	992	1,236	-244
Compounds, Chemical Products	2,132	297	1,835	3,620	606	3,014	8,761	1,584	7,177	12,096	3,406	8,690
Rubber and Plastic Products	70	6	64	230	41	189	558	167	391	697	385	312
Non-metals	17	105	-88	122	83	39	164	334	-170	141	582	-441
Primary Metals	299	455	-156	1,119	736	383	4,163	4,210	-47	4,347	14,270	-9,923
Hot Rolling and Pressure Products	16	38	-22	500	193	307	1,782	1,998	-216	745	9,958	-9,213
Component	749	444	305	4,135	3,308	-827	22,893	10,216	12,677	36,800	21,716	15,084
Assembly Metal	43	14	29	79	38	41	256	170	86	311	537	-226
General Machineries	185	39	146	537	140	397	1,883	786	1,097	4,059	2,055	2,004

Computer and Office Components	53	79	-26	672	675	-3	2,339	1,625	714	1,859	1,969	-110
Electric Components	206	154	52	571	972	-401	2,593	2,950	-357	4,963	4,794	169
Electronic, Video, Sound and Communication Components	223	131	92	2,167	1,372	795	12,414	4,238	8,176	22,149	10,985	11,164
Memory Semiconductors	15	n.a.	-	168	6	162	1,652	450	1,202	4,644	763	3,881
Precision Components	7	18	-11	39	51	-12	635	226	409	1,446	464	982
Transportation Components	32	9	23	70	60	10	2,773	221	2,552	2,013	912	1,101
Automobile Components	30	3	28	65	29	36	2,671	175	2,496	1,968	814	1,153

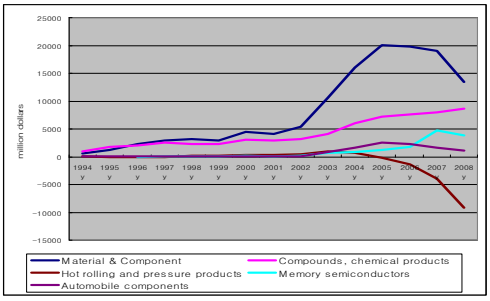
Note: Shaded components show a high ratio of trade surplus or deficit among component and material industries.

Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

'Hot Rolled and Pressed Products' temporarily showed a trade deficit for three years between 1995 and 1997, but they resumed the surplus trend after 1997. Hot rolled and pressed products dropped again to a trade deficit in 2005 and recorded a large deficit of -9.21 billion dollars in 2008. Hot rolled and pressed products causes the largest trade deficit with China among all components and materials categories.

On the other hand, 'Chemical Compounds and Products' have shown a continually increasing surplus since 1995. The amount reached 8.69 billion dollars in 2008. In addition, though 'Memory Semiconductors' and 'Automobile Components' showed a slight slowdown in the surplus trend since 2007, they still have a large surplus of 3.88 and 1.15 billion dollars, respectively.

Figure 3. Trend of trade balance for major components and materials



Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

3.2.2. Import and Export with the U.S.

The U.S. has long been Korea's traditional import and export market. Despite the rapid rise of China, there are no significant changes in its importance. Components and material industries are not an exception to this.

However, the trade balance of component and material industries with the U.S. ended its deficit trend in 2006 at -0.19 billion dollars and turned to a trade surplus of 0.49 billion dollars in 2007 and 0.78 billion dollars in 2008. Compared to the continued surplus shown by the trade balance with the U.S. since 1998, the trade surplus of components and material industries began about 10 years later. Though late, this is an extremely encouraging factor in terms of improved export competitiveness.

However, looking at 8.01 billion dollars of trade balance with the U.S. in 2008, the current trade surplus of 0.78 billion dollars created by components and material industries is not big enough.

The size of components and material industries among total exports to the U.S. was 30.2% in 1995, 41.6% in 2000, 33.9% in 2005 and 35.7% in 2008. The volume of component and material industries among the total imports from the U.S. was 35.4% in 1995, 54.4% in 2000, 49.6% in 2005 and 41.1% in 2008. The overall amount of imports was shown to be higher than that of exports.

Looking separately into the components and material industries, the 'material industry' turned from -1.91 billion dollars of deficit in 1995 and -0.27 billion

dollars of deficit in 2000 to a surplus of 0.08 billion dollars in 2005. The balance returned to a deficit of -0.02 billion dollars in 2008.

In contrast, the 'components industry' began with a trade deficit of -1.57 billion dollars in 1995 which was reduced to -3 million dollars in 2000. Though the deficit grew to -1.21 billion dollars in 2005, it was reversed to a surplus of 0.79 billion dollars in 2008.

Particularly, 'Chemical Compounds and Products' failed to record a surplus for a single year and ended up with a deficit of -2.23 billion dollars in 2008. On the other hand, 'Hot Rolled and Pressed Products' have recorded a trade surplus from 1994 to 2008. This is opposed to the cases of China and Japan that have shown a deficit in trade balance.

The amount of surplus with the U.S. shown by 'Automobile Components' increased from 0.27 billion dollars in 2000 to 2.26 billion dollars in 2008, demonstrating a rapid increase every year.

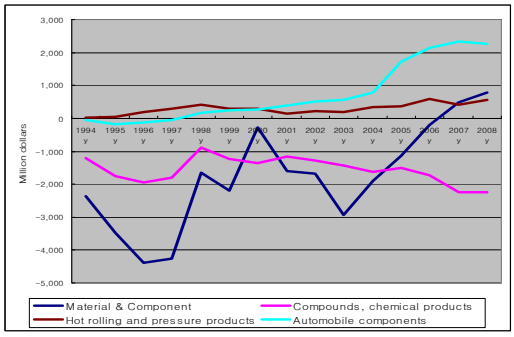
Table 6. Trend of components and material import and export with the U.S.

(All numbers in millions of dollars)

Classification	1995			2000			2005			2008		
	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance
All Industries	24,131	30,404	-6,273	37,611	29,242	8,369	41,343	30,586	10,757	46,377	38,365	8,012
Component, Material Industries	7,290	10,773	-3,483	15,629	15,905	-276	14,032	15,162	-1,130	16,561	15,782	779
Material	1,195	3,105	-1,910	2,617	2,889	-272	3,783	3,704	79	4,528	4,545	-17
Fiber Products	318	51	267	543	59	484	448	46	402	354	45	309
Compounds, Chemical Products	346	2,098	-1,752	733	2,099	-1,366	1,222	2,729	-1,507	1,231	3,465	-2,234
Rubber and Plastic Products	292	144	148	499	158	341	1,028	146	882	1,155	164	991
Non-metals	10	122	-112	33	158	-126	45	205	-160	64	291	-227
Primary Metals	229	690	-461	809	415	394	1,040	578	462	1,724	580	1,144
Hot Rolling and Pressure Products	57	14	43	304	13	291	433	69	364	635	76	560
Component	6,096	7,668	-1,572	13,013	13,016	-3	10,249	11,458	-1,209	12,031	11,237	794
Assembly Metal	195	176	19	354	194	160	400	160	240	415	312	103
General Machineries	309	2,154	-1,845	699	1,549	-850	1,203	1,835	-632	2,078	2,630	-552
Computer and Office Components	270	386	-116	1,864	680	1,184	483	235	248	527	282	245
Electric Components	229	481	-252	611	609	2	806	605	201	1,163	816	347
Electronic, Video, Sound and Communication Components	4,374	2,709	1,665	8,571	8,606	-35	4,666	6,594	-1,928	4,385	4,978	-593
Precision Components	40	141	-101	72	412	-340	103	865	-762	252	812	-560
Transportation Components	679	1,621	-942	842	966	-124	2,588	1,164	1,424	3,211	1,407	1,804
Automobile Components	237	411	-174	572	299	273	2,116	406	1,710	2,645	383	2,262

Note: Shaded components show a high ratio of trade surplus or deficit among component and material industries.
Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

Figure 4. Trend of trade balance for major components and materials



Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

3.2.3. Import and Export with Japan

The trade balance of components and material industries with Japan was -9.34 billion dollars in 1995, -11.73 billion dollars in 2000, -6.07 billion dollars in 2005 and -20.94 billion dollars in 2008. The components and material industries continued the record trade deficit to over 20 billion dollars, but the components and material industries has never achieved a surplus with Japan.

Moreover, as shown in Table 7, among the twelve major items of the components and material industries, none are recording a trade surplus. Though all industries, including components and material industries with China and the U.S., are showing large surpluses, trade with Japan is in a deficit in all industries.

Separately examining components and material industries, the amount of deficit by the 'material industry' with Japan surpassed the amount of deficit by the 'component industry' since 2005. In 2005 and 2006, the trade balance of the components industry with Japan improved. Unexpectedly, the material industry showed a continuing increase in the deficit.

As a result, the recent rapid expansion of adverse trade with Japan can more accurately be attributed to the 'material industry' instead of both the 'components and material industries'.

This, of course, does not mean that the deficit of the 'component industry' with Japan was reduced. However, the weight of the deficit by the component industry is definitely decreasing compared to the 'material industry'. As can be seen in Table 7, the trade deficit of the components industry with Japan is expanding every year, with -5.41 billion dollars in 1995, -7.01 billion dollars in 2000, -7.96 billion dollars in 2005 and -9.42 billion dollars in 2008.

The amount of the deficit by the material industry greatly exceeded the increase shown by the component industry. In fact, the deficit of -3.94 billion dollars in 1995 increased to -4.72 billion dollars in 2000 and -8.12 billion dollars in 2005. The material industry quickly caught up with the deficit amount of the components industry. By 2008, the amount expanded further to -11.52 billion dollars, exceeding the -10 billion dollar deficit mark. As such, the 'material industry' was identified as the main reason for the increase of the deficit with Japan.

Changes in the two industries can also be seen through another index. A ratio of the 'component industry' in imports from Japan contracted from 40.6% in 2000 to 28.6% in 2008. In contrast, the volume of the 'material industry' for the same period increased from 21.6% to 28.3%. The size of the two sectors' total trade deficit with Japan was 28.8% for 'component industry' and 35.2% for the 'material industry' in 2008.

On the one hand, items with the largest amount of deficit among the material industry in 2008 was 'Primary Metals (steels and steel materials)', followed by 'Chemical Compounds and Products'. The ratio of these two items in the deficit from the material industry was 72.7%. In particular, the trade deficit of primary metals was rapidly increasing. The trade deficit of this product with Japan in 2008 grew to over 5 billion dollars.

Primary metals showed a high amount of trade deficit among all items of the component and material industries. The weight of the total deficit by primary metals of material industry with Japan was 43.3%. In addition, another unexpected result was found in the trade deficit by primary metals, in that the item of 'Hot Rolled and Pressed Products' went up to 84.9%.

Among the -20.94 billion dollars of trade in 2008 by the components and material industries with Japan, a ratio of deficit taken by hot rolled and pressed products was 20.2%, which was 13% of the total trade deficit with Japan.

Table 7. Trend of components and material import and export with Japan

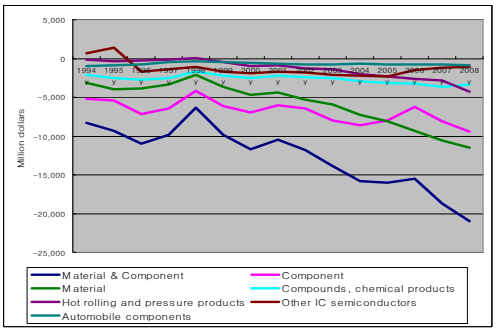
(All numbers in millions of dollars)

Classification	1995			2000			2005			2008		
	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance	Export	Import	Balance
All Industries	17,049	32,606	-15,557	20,466	31,828	-11,362	24,027	48,403	-24,376	28,252	60,956	-32,704
Component, Material Industries	5,278	14,619	-9,341	8,061	19,792	-11,725	11,307	27,381	-16,074	13,737	34,681	-20,944
Material	1,752	5,687	-3,935	2,149	6,871	-4,722	3,466	11,582	-8,116	5,716	17,240	-11,524
Fiber Products	360	272	88	189	236	-47	171	188	-17	185	205	-20
Compounds, Chemical Products	509	3,082	-2,573	693	3,211	-2,518	1,086	4,263	-3,177	2,000	5,383	-3,383
Rubber and Plastic Products	140	272	-132	228	368	-140	379	1,315	-936	472	2,327	-1,855
Plastic Films, Sheets, Synthetic Leathers	91	194	-103	147	277	-130	241	1,159	-918	298	2,125	-1,827
Non-metals	33	482	-449	113	375	-262	126	1,044	-918	259	1,532	-1,273
Plate Glass	5	96	-91	63	68	-5	48	631	-583	60	1,121	-1,061
Primary Metals	710	1,579	-869	926	2,681	-1,755	1,704	4,772	-3,068	2,800	7,793	-4,993
Hot Rolling and Pressure Products	115	468	-353	471	1,462	-991	711	2,989	-2,278	1,010	5,251	-4,241
Component	3,526	8,933	-5,407	5,912	12,922	-7,010	7,842	15,800	-7,958	8,020	17,441	-9,421
Assembly Metal	74	214	-140	122	185	-63	336	329	7	317	345	-28
General Machineries	253	2,339	-2,086	483	1,920	-1,437	1,314	2,892	-1,578	2,008	3,957	-1,949
Computer and Office Components	131	370	-239	1,147	692	455	310	337	-27	302	370	-68
Electric Components	218	1,181	-963	419	1,878	-1,459	460	2,054	-1,594	741	2,479	-1,738
Electronic, Video, Sound and Communication Components	2,703	3,392	-689	3,473	6,622	-3,149	4,869	7,339	-2,470	3,836	7,008	-3,172
Other IC Semiconductors	2,219	780	1,439	644	2,596	-1,952	1,049	3,411	-2,362	1,344	2,478	-1,134
Precision Components	36	340	-304	81	815	-734	144	1,686	-1,542	218	1,775	-1,557
Optical Fibers and Optical Elements	7	43	-36	35	499	-464	79	1,104	-1,025	127	1,102	-975
Transportation Components	111	1,097	-986	187	810	-623	409	1,163	-754	598	1,507	-909
Automobile Components	88	997	-909	165	756	-591	379	1,106	-727	552	1,380	-828

Note: Shaded components show a high ratio of trade surplus or deficit among component and material industries.

Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

Figure 5. Trend of trade balance for major components and materials



Source: Computed by the author from information from the Ministry of Knowledge and Economy on component and material statistics.

IV. Conclusion and Discussion

Details of comparison and analysis performed earlier on the components and material industries with the US.., China and Japan can be summarized as follows.

- The U.S. and Japan were the major import and export markets for Korea until the 1990s, but China has rapidly risen since the mid-1990s. After the mid-2000s, China became the number one import and export country surpassing the U.S. and Japan.
- Observing the size of trade in 2008, including the three largest import and export countries for Korea, a trade surplus of 14.46 billion dollars was recorded with China, 8.01 billion dollars with the U.S., as well as a large trade deficit of -32.7 billion dollars with Japan. In particular, ever since Korea established diplomatic relations with Japan, it has

not shown a single surplus incident. The size of the deficit has continued to increase year after year.

- The nation's export dependence, as of 2008, on the three major import and export countries summed up to 39.4% (21.7% for China, 11.0% for the U.S. and 6.7% for Japan). Import dependence was 40.5% (17.7% for China, 8.8% for the U.S. and 14.0% for Japan). As a result, Korea's trade showed an imbalanced import and export structure of which about 40% relied on these top three countries.
- Korean components and material industries returned to a surplus in 1997 and now has established a firm history of trade surpluses. As a result, despite the fact that the trade balance of Korea with the world reached -13.27 billion dollars in 2008, the components and material industries created a large surplus of 34.75 billion dollars.
- Among 34.75 billion dollars of trade in 2008 from the components and material industries with the world, 34.24 billion dollars were created only by the components industry. This corresponds to 98.5% of the total surplus. Therefore, the trade surplus of the components and material industries today can be explained as a result brought forth by the components industry alone.
- Looking into the export structure of each business under the components and material industries, the number one and two products for export were electronic appliances and chemical compounds and products. The ratio of the two items was 51.5% of total exports from the components and material industries. Also, looking at the import structure, the number one and two products for import were electronic appliances and primary metals. These two items made up 51.0% of the total imports by these industries. In the case of the components and material industries, imports and exports of a few items take up a significant portion, showing an imbalanced trade.
- The trade surplus from the components and material industries with China exceeds 10 billion dollars, and a ratio of the component and material industries in import and export with China was extremely high in comparison to the U.S. and Japan. For this reason, if exports from China are damaged in the global market, Korean exports to China, especially the components and material industries, will immediately suffer.
- The trade balance of hot rolled and pressed products with China changed to a deficit in 2005 and reached its largest deficit of -9.21 billion dollars in 2008.
- The trade balance of the component and material industries with the U.S. reversed to a surplus in 2007. However, looking at an 8.01 billion dollar trade surplus shown with the U.S. in 2008, the amount of surplus (0.78 billion dollars) created from the components and material industries is not significant.
- Among the components and material industries, chemical compounds and products failed to record a surplus and continues to show weak competitiveness with a -2.23 billion dollar deficit in 2008.
- The trade balance of Korea with the world during 2008 was -13.27 billion dollars, but the component and material industries alone showed a surplus of 34.75 billion dollars. However, the component and material industries revealed their weakness against Japan with -20.94 billion dollars in deficit.
- While the ratio of the components industry in imports from Japan decreased from 40.6% in 2000 to 28.6% in 2008, a ratio taken by the material industry during the same period increased from 21.6% to 28.3%. Moreover, a ratio taken by the two sectors among the total trade deficit was 28.8% for the component industry and 35.2% for the material industry in 2008. The main role of the trade deficit by component and material industries with Japan changed from component to material.
- The size of the deficit by primary metals with Japan is larger among the components and material industries. The weight of primary metals in total deficit by the material industry with Japan is 43.3%. Also, 84.9% of the deficit by primary metals corresponds to hot rolled and pressed products.

The Korean government is currently trying to upgrade the technological power of the components and

material industries by increasing the research and development budget by 10.8% in 2009 and over 10% in 2010, and by inducing research and development between small and medium component and material corporations. The government is making an effort to activate growth of the components and material industries.

While growth policies for the components and material industries being conducted on small and medium corporations are important, support for the sector (components and materials) from large enterprises and multilateral policies must also be taken into consideration.

Furthermore, since the knowledge on core components and materials is not accumulated easily, constitutional strengthening of components and material corporations must also be controlled and monitored.

References

Kim, Kwang-Hee(2009.5), "A Study on Current Status of Competitiveness in Parts and Materials Industry Against Japan", KACST, pp.339-345.

The Ministry of Knowledge and Economy (http://www.pmsd.or.kr/pmsd/index.do)

Korea International Trade Association (http://www.kita.net/)

Korea National Statistical Office (http://www.nso.go.kr/)

Korea Association of Machinery Industry (http://www.koami.or.kr/)

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Enhancing Competitiveness in a Mega-Exhibition Center in Korea

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ABSTRACT

This research explores specific elements in order to strengthen competitiveness of the Korean exhibition industry. Based on push and pull factors, exploratory research was conducted in order to identify actual and potential factors which stimulate visitors' motivation to participate in exhibitions. Through the investigation, barriers and obstacles that prevent visitors from participating in exhibitions were analyzed. In terms of investigated factors in exhibition participation related to push and pull theory, developmental strategies were identified and verified in order to enhance competitiveness in Asia's largest exhibition center 'Fiera Milano Incheon'. The results of this study reflect both theoretical and empirical evidence and implications for future management in Asia's largest exhibition center 'Fiera Milano Incheon,' which will complete its construction process in 2012.

1. Introduction

Compared to the general marketing approach, the exhibition marketing approach provides more efficient and effective ways to facilitate the sale of products for retailers and manufactures for a company which is to sell products directly to consumers (Bellizzi & Lipps, 1984). An exhibition is not just a collection of interesting products displayed at a certain location. On the contrary, it involves human activities, entertainment, and other enjoyable features in order to achieve specific goals (Luckhurst, 1951). According to a CEIR report, 37 percent of exhibition visitors decide to buy products and 59 percent of visitors said that they have the intention to order products and services displayed in exhibitions. Thus, exhibitors should take advantage of opportunities to attract actual and potential customers in order to promote and sell their products. Moreover, exhibitions also offer opportunities for connections and interactions between visitors and exhibitors in which they can share information, products, and feedback, as well as satisfying visitors through entertaining programs and leisure activities (McLean, 1994).

Likewise, exhibitions have noticeable features in marketing approaches, human activities, entertainment, and leisure activities. With important recreational and tourism attractions, it is necessary that exhibition centers be researched in various perspectives. The Korean government announced a 5-day work week beginning in 2001 to motivate Koreans to visit more tourism and leisure destinations. It also increased the number of outbound travelers to surpass the number of inbound travelers due to a lack of development in domestic tourism destinations, facilities, and attractions.

Despite the importance of exhibitions, very little is known about sales and marketing features, as well as entertainment and recreational advantages that influence exhibition visitation behavior in Korea. This exploratory research attempted to examine push and pull factors which could become essential elements to stimulate visitors' motivation to attend exhibitions. It also investigated barriers that cause low exhibition participation based on push and pull theory. More specifically, the objectives of the study are as follows: (1) identify push and pull factors that influence decisions to visit exhibitions; (2) investigate impediments to actual and potential visitors of exhibitions; (3) strengthen competitiveness of exhibitions through the discovery of promotional strategies to enhance exhibition participation.

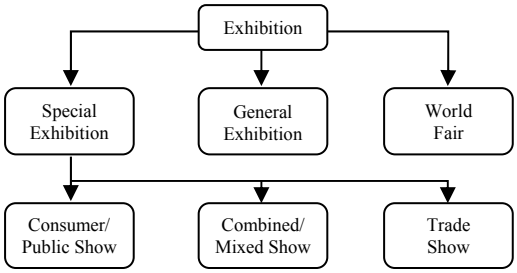
II. Literature review

2.1. Exhibition

International Association for Exhibition and Events (IAEE) defines an "exposition" as a temporary and sensitive marketplace which facilitates present and future transitions and exchanges between buyers and sellers through displaying products and providing services. Morrow (1997) explains that an exhibition is housed in permanent facilities of business interaction and they are similar to a temporary market place which is organized by individuals or corporations with the purpose of selling goods or services to customers. An exhibition is an event for marketing opportunities, as well as stimulating interests of customers for business, and it also targets specific markets through personal contacts and interactions (Konikow, 1986).

In general, exhibitions are a temporary marketplace to exchange information and ideas between exhibitors and attendees through a combination of advertisement, sales promotion, personal selling, and public relations so that it is not simply defined as just a selling process. In the exhibition industry, three terms, *fair, exhibition, and exposition*, are interchangeably used even though slight differences exist. In the case of Korean exhibitions, each term is quite often used interchangeably and some exhibitions are hardly defined and categorized by those terms at all because there are various exhibitions opened every year. However, requirements for attendance to exhibitions are a standard to determine each exhibition's specific categories. CEIR (Center for Exhibition Industry Research) categorized each exhibition based on limitations of the business field, entrance, and types of attendees. Thus, it is easy to make a standard to determine each of the special features in exhibitions. For example, consumer shows are open for everyone, so their features include various factors such as entertainment, recreation, and tourism elements because exhibitors need to attract more attendees using those activities. The number of attendees directly influences sales volume and the success of marketing activities. Thus, exhibitors add entertainment factors into their marketing activities.

Figure 2-1: Classification of Exhibitions



(Resource: CEIR (1996). The power of exhibitions II: Summary results: What successful exhibitors do to get results, Bethesda MD: Center for Exhibition Industry Research)

Table 2-1. Differences in Special Exhibitions

Type	Trade Show	Consumer/ Public Show	Combined/Mixed Show
Industry	Industrial B2B Business to Business	Consumer Industry B2C Business to Consumer	Combination of Trade Show & Consumer Show

Exhibitor	Manufacturer Distributor	Retail outlets Manufacturer	Manufacturer Distributor
Visitor	Buyer End-user	General Public	Buyer General Public
Entrance Limit	Buyer Invitation	No limit of entrance	Different dates According to types of attendee
Market Share	49% in U.S.	13% in U.S.	38% in U.S.

(Resource: CEIR (1996), The power of exhibitions II: Summary results: What successful exhibitions do to get results, Bethesda MD: Center for exhibition industry research)

Special exhibitions are broadly categorized into three types: trade show, consumer and public show, as well as combined and mixed show, according to the features of the exhibition. Trade shows are only for specifically invited attendees and business interactions are the highest concern. In contrast, combined and mixed shows are open for the public as well as businessmen and involve more entertainment and leisure activities than trade shows. Lastly, consumer and public shows are open to everyone with no limit on attendees and dates, and are comprised of mostly entertainment, leisure activities, recreation, and tourism attractions. In spite of classification, the boundary of each exhibition is meaningless as hundreds of combined and mixed shows have opened every year.

Exhibitions are also characterized by theme. For example, exhibitions are closely related to exciting activities and entertaining events (Luckhurst, 1951). Among the features of exhibitions, education and entertainment are major benefits in consumer and public shows, and specifically, education is the most important value displayed in exhibitions (Quain, 1994). In spite of the low rate of consumer and public shows in North America with 13 percent of the exhibition market share, there are differences in Korean exhibitions. Consumer and public shows comprise more than 50 percent of the Korean exhibition market and most exhibitions are limitless except specific business exhibitions.

The features of an exhibition are highly beneficial and profit oriented as a unique marketing medium in that customers are able to approach companies themselves (Gillian, 1995) with purchasing power (Kaminer, 1992), and strength of decision making to buy goods and services (Rosson & Seringhaus, 1995). There are even more attractive characteristics of exhibitions. For example, Jim (1998) refers to obtaining new information and technology as a primary objective that attendees could gain from exhibitions.

In sum, the features of exhibitions, such as a sales and marketing approach, business interactions, entertainment, recreation, and tourism attractions, have been found by the exploratory research. Furthermore, both the possibility and importance of entertaining facilities in exhibitions has been verified.

2.2. Push and Pull factors

Push factors have been conceptualized as motivational factors or needs that exist as a direct result of a disequilibrium or tension in the motivational system. In other words, push factors motivate or create a desire to travel (Crompton, 1979; Dann, 1977, 1981; Iso-Ahola, 1982, 1989; Pearce & Caltabiano, 1983; Pyo, Mihalik, & Uysal, 1989; Uysal & Hagan, 1993; Yuan & McDonald, 1990). Crompton (1979) suggests that there are four levels of motivation as human beings: disequilibrium, escaping, seeking, and tourism. Moreover, in the case of tourism, motivation is categorized into social-psychological motivation and cultural motivation. Social-psychological motivation, such as escaping, relaxing, and recovering, derives from personal and interpersonal psychology. On the other hand, cultural motivation, such as novelty and education, derives from special goods, service, and culture. Specifically, Crompton insists that a primary strategy to enhance socio-psychological motivation is to evoke a traveler's essential interest and emotion relevant to tourism instead of solely developing goods and services.

Pull factors, in contrast to push factors, have been conceptualized as features of the destination itself (Kim,

Lee, & David, 2002). The pull factors identified in the research include 'social opportunities and attractions', 'natural and cultural amenities', 'accommodations and transportation', 'infrastructure, foods, and friendly people', 'physical amenities and recreation activities' and 'bars and evening entertainment' (Fakeye and Crompton, 1991). Jeong (1997) reveals the importance of pull factors, including 'natural resources', 'cultural resources', 'facilities for rest and recreational activities', 'information and convenience facilities' and 'commercial and accommodation facilities.'

In sum, push and pull factors are summarized by the following: push factors include disequilibrium, escaping, seeking, relaxation, recovery, adventure, challenge, enjoyment, and friendship, while pull factors include social opportunities and attractions, natural and cultural amenities, transportation, information and convenience, natural and cultural resources, facilities for rest, recreational activities, and accommodation.

In addition, each item in push and pull factors is interrelated and combined into four push factor domains and three pull factor domains. Four push factor domains comprise 'family togetherness and study', 'appreciating natural resources and health', 'escaping from everyday routine', 'adventure and building friendship', while three pull factor domains comprise 'key tourist resources', 'information and convenience of facilities', 'accessibility and transportation' (Kim, Lee, & Klenosky, 2003).

III. Results

An exhibition center is a public place where products, technology, services or other objects of interest are presented for sharing not only new information, but also leisure time in the form of economic and cultural activities between attendees and exhibitors. Even though exhibitions offer the opportunity to extend leisure activities, there is a tendency for people to regard exhibitions as solely a place for business and economic interactions.

Basically, as a marketing medium, exhibitions are stimulated by advertisements, sales promotion, as well as public and private relations. Simultaneously, as creative opportunities for entertainment, recreation, and leisure activities, exhibitions are considered alternatives as new tourism destinations in Korea. However, there is lack of assistance from the Korean government and the Ministry of Culture and Tourism. In order to entice visitors and tourists who have the specific purpose of experiencing business interactions and recreational activities at exhibitions, this research has investigated push and pull theory, which influences the decision making process of why visitors and travelers attend exhibitions.

The exhibition industry encompasses a broad range of activities. For example, the buyers who travel around the world to purchase the latest products and services attend exhibitions (Morrow, 1997). Since most exhibitions offer special events, they often give customers good impressions and memories. Exhibitions are also used as spaces to enhance local economies by trading new products and technologies (Lee & Kim, 1998). Specifically, consumer shows are exhibitions that are open to the general public. Consumer shows play a prominent role in consumer product marketing. In fact, many companies use consumer shows as a testing ground for new products and a forum for expanding positive public relation efforts (Morrow, 1997). Customers usually have two special interests that motivate them to attend exhibitions. One is to find entertainment and the other is to obtain new information and technical expertise from exhibitors while comparing each displayed product (Robbe, 2000). One of the primary benefits while attending exhibitions is that entertainment and consumer shows provide many activities, such as music festivals, physical exercise, and symposiums (Quain, 1994).

In sum, through an examination of exhibition features, it is clear that there are common elements shared between exhibitions and tourism. Common features that motivate people to attend exhibitions and tourism activities are as follows: escaping, seeking, relaxation, recovery, adventure, challenge, enjoyment, social opportunities, information, convenience, transportation, facilities, recreation, and leisure activities. This finding suggests that each element is a proven factor to determine how mega-exhibition centers should be managed and what elements should be implemented.

IV. Implications and Conclusions

'Fiera Milano Incheon', Asia's largest exhibition center, is under construction and it will be open in 2012. The Korean government signed a contract with Italian Fiera Milano SpA to build the huge exhibition center, and its cost was over $600 billion. Korea has nine mega convention and exhibition centers, and unfortunately, most of them except the COEX (Convention and Exhibition Center) in Seoul have been in serious debt. The Korean government announced that 'Fiera Milano Incheon' will be the hub in northeast Asia and it will promote both domestic and international business interactions.

In a geographic location, 'Fiera Milano Incheon' is located on Yongjong Island in the Incheon Free Economic Zone. The advantage in that area is that there is no tariff on trade and commercial transactions and the IFEZ is assigned to an international logistics base from the Korean government. In addition, in four hours by plane, one is able to visit large cities with populations of over 10 million, such as Seoul, Tokyo, Osaka, Nagoya, Beijing, Hong Kong, and other large cities in Asia. The convenient location of 'Fiera Milano Incheon' is one of strengths to draw international business people and tourists, and to increase national competitiveness in the exhibition market. Moreover, it is necessary to prepare promotional and marketing strategies, as well as operational management systems in order to compete against the four major northeastern exhibition centers: CIEC in Beijing, SNIEC in Shanghai, HKCEC in Hong Kong, Tokyo Big Sight in Tokyo. Mutual cooperation and collaboration with the Korean government, profit and non-profit organizations, the convention and visitors bureau (CVB), as well as exhibition organizers, planners, and managers should provide tactical strategies to strengthen the competitiveness of 'Fiera Milano Incheon.'

In conclusion, the following three considerations are prerequisites before completing 'Fiera Milano Incheon.' First, a high standard brand is accomplished by promotional strategies. Second, a high standard facility is accomplished by strategic investment and assistance from the Korean government. Third, a high standard of education is accomplished by enhancement of the education system (Lee, 2007). A high standard brand, high standard facility, and high standard of education should be combined with the common features that motivate people to attend exhibitions and tourism activities examined in the research in order to increase national competitiveness in the exhibition market and to increase exhibition attendance.

Reference

Bellizzi, J. A., & Lipps, D. J. (1984). Managerial guidelines for trade show effectiveness. Industrial Marketing Management, 13(1), 49-52.

CEIR (1998). Profile of the Consumer Exposition Audience: Part 2; Audience Quality and Activity, Center for Exhibition Industry Research.

Crompton, J. L. (1979). Motivations for pleasure vacations. *Annals of Tourism Research*, *6*(4), 408-424.

Dann, G. M. S. (1981). Tourism motivation: An appraisal. *Annals of Tourism Research*, *8*(2), 187-219.

Fakeye, P. C., & Crompton, J. L. (1991). Image differences between prospective, first time, and repeat visitors to the Lower Rio Grande Valley. *Journal of Travel Research*, *30*, 10-16.

Gillian, C. (1995). *Marketing the Most of Trade Exhibitions*. Reed Exhibition companies Lid., p. 54-67.

Iso-Ahola, S. E. (1982). Toward a social psychological theory of tourism motivation: A rejoinder. *Annals of Tourism Research*, *12*, 256-262.

Jeong, I. (1997). A study on attributes of attractions of the Bukhansan National Park and visitors' attitudes. Thesis, Hanyang University, Seoul.

Jim, L. (1998). Trade show gymnastics: Jumping through Hoops without Getting Hurt.

Michigan, Fairview Studios Publications, p. 138.

Kaminer, D. A. (1992). Trade shows: How big business does bigger business. *Business Marketing*, *77* (Nov.): A2-A4.

Kim, S. S., Lee, C. K., & Klenosky, D. B. (2003). The influence of push and pull factors at Korean national parks. *Tourism Management, 24*, 169-180.

Konikow, R. B. (1986). *How to participate profitably in trade show*, Chicago Dartnell Corp. p. 129.

Lee, D. H. (2007). *Exhibition Participation and Constraints.* Thesis, Hanyang University. Seoul, South Korea.

Lee, Y. J., & Kim, Y. C. (1998). The effects of service quality evaluations in physical

Environments. *Marketing studies*, 61-86.

Luckhurst, K. W. (1951). *The Story of Exhibitions*. London, The Studio Publications.

McLean, K. (1994). *Planning for people in museum exhibition*. Association of Science-Technology Center, 15-16.

Morrow, S. L. (1997). *The Art of the Show.* Dallas, Texas: IAEM Education Foundation.

Quain, J. R. (1994). *The Step Program*, Dallas, IAEM Foundation, Inc.

Pearce, P. L., & Caltabiano, M. (1983). Inferring travel motivations from travelers' experiences. *Journal of Travel Research*, *22*(2), 16-20.

Pyo, S., Mihalik, B. J., & Uysal, M. (1989). Attraction attributes and motivations: A canonical correlation analysis. *Annals of Tourism Research*, *16*(2), 277-282.

Robbe, D. (2000). *Expositions and Trade Shows*: Consumer show attendees, p. 138.

Rosson, P. J., & Seringhaus, F. H. R. (1996). Visitor and exhibitor interaction at industrial trade fairs. *Journal of Business Research,* 32(1), 81-90.

Uysal, M., & Hagan, L. A. R. (1993). Motivation of pleasure travel and tourism. In M. Khan,

M. Olsen, & T. Var(Eds.). *Encyclopedia of Hospitality and Tourism* (pp. 798-810), New York: VNR.

Yuan, S., & McDonald, C. (1990). Motivational determinants of international pleasure time. *Journal of Travel Research,* 24(1), 42-44.

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Buying Patterns and Consumer Preferences for Chicken Meat and Pork: The Philippine Scenario

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ABSTRACT

The global meat trade is tremendous (estimated at 100 million metric tons for pork alone in 2006) with poultry, beef and pork tagged as the three most important meat commodities. Differences in residential base, meat type and cut preferences, trade barriers and industry structure dictate specific meat trade flows among countries and regions. This paper analyzes the current buying patterns and preferences of consumers for poultry and pork in a diverse community in the Philippines, one of the emerging markets in Southeast Asia, through both descriptive and quantitative analyses. Socio-demographic, market-related and product-related variables were hypothesized to have an effect on consumer buying patterns and preferences for chicken and pork. Data was gathered from 182 households and covered both wet market and supermarket buyers. Those who bought from the wet markets did so because of the perceived freshness of meat, nearness of these markets to their residence, the constant availability of meat, and longer operating hours of the markets. On the other hand, supermarket buyers preferred to buy meat from supermarkets in view of assurance of safety, the adequacy of parking space, better cuts of meat and the availability and variety of meat products offered. Out of the variables tested quantitatively, only household income, educational attainment and prices of commodities were found to have a significant effect on consumer buying patterns. These variables were found to affect the quantity demanded, frequency of purchase and choice of marketplaces. Consumers with higher educational attainment consumed more chicken and pork compared to those with lower educational attainment. Households with higher income purchased and consumed higher volumes of chicken as well as pork and also purchased meat more frequently than those who belong to lower income groups. In addition, they usually buy from supermarkets than from wet markets. Lastly, an increase in meat prices was found to increase the probability of consumers buying chicken and pork from wet markets. Knowledge of Filipino household buying patterns and preferences could assist retailers, suppliers and producers of poultry and pork in promoting their products and devising strategies to ensure consumer loyalty and patronage.

1. Introduction

The most commonly used viands consumed by the majority are pork, chicken and fish. Aside from fish, chicken and pork serve as the most frequent sources of animal protein for consumers. Poultry contributes 4.7% protein while pork adds 13.8% protein to energy and nutrient intake. According to the Household Food Consumption Survey (HFCS), the usual intake of poultry, meat and meat products in Philippine households is 81 grams per capita per day. This is equivalent to 9.2% of the total per capita daily food intake.

Chicken, *Gallus gallus* or *Gallus domesticus*, is the most common bird in the world and is also the most frequently-consumed poultry product eaten by Filipinos other than eggs. Chicken meat is the best alternative source of protein meat available in the market and it has consistently been priced lower than pork and beef. It has become a regular item in the daily fare of 30% of the world's total population in 39 mostly industrialized countries. Aside from chicken, pork is also a popular source of animal protein for consumers. Pork is the term for meat from the domestic pig, *Sus domesticus*, and is one of the most widely-eaten meats in the world. In spite of religious restrictions on the consumption of pork, it provides about 38% of daily meat protein intake worldwide, although consumption varies widely from place to place. One of the challenges of the pork industry in the next decade is to meet the need to triple pork production in response to a projected increase in population.

According to the USDA, the global meat trade is significant with poultry, beef and pork heading the list of top three meat types traded worldwide. The U.S., European Union, Australia, Canada, Brazil, Argentina are the leading meat exporters while the major importing countries include Russia, Japan, China (including Hong Kong), Mexico, and the U.S. marked differences are evident in preferences for meat expressed by various cultures all around the world. For example, Americans pay more for white poultry meat but consumers elsewhere pay a premium on dark meat. Other consuming nations also pay more for meat offal. Hence, it is important to know the country-specific factors that affect consumer buying patterns and the decisions that they make because this will provide important information on the purchase and consumption of chicken and pork meat in particular parts of the world. This information will in turn enable the development of retailing strategies for meat products.

II. Review of Related Literature

There are several factors that affect consumer buying decisions as indicated by a number of studies on meat buying patterns and preferences and factors affecting meat consumption. Menkhaus et. al. (1985) found that purchase decisions made by beef, pork and chicken consumers are influenced by price, prices of substitutes and income or total expenditures. Schreiner and Birchler (1995) noted a taste shift from beef toward poultry and pork (both considered as white meat) in the U.S. in the 1980s on account of increasing health consciousness of Americans and effective promotion.

The Practical Farmers of Iowa report in January 2005 included a survey of purchasing preferences of consumers from three buying clubs like amount and type of meat purchased, perceived value of access to local meat, attributes considered important when purchasing meat, monetary value of attributes in question, likelihood of buying through buying clubs, amount of premium they would pay for attributed local meat, preference level of contact with farmer raising meat, frequency and preferred times they would buy. With respect to preferred pork and chicken meat cuts, majority cited pork chops and chicken breast. The meat attributes found to be of utmost importance were "antibiotic free" and "hormone free."

According to the USDA's Foreign Agricultural Service, nearly 100 million metric tons of pork were consumed worldwide in 2006. Dyck and Nelson (2003) in a USDA information bulletin stated that growth in the meat trade primarily depends on further liberalization of protectionist barriers, animal disease control and eradication, economic development and population growth. Trade flows between countries and among regions were dependent on differences in residential

base, meat type and cut preferences, magnitude and character of trade barriers and country-specific industry structures. Furthermore, marked differences are noticeable in meat preferences expressed by various cultures around the world.

Newman et.al. (2002) studied the factors shaping Irish household expenditure on meat and prepared meals as a result of the changing pattern of food consumption leading to a decrease in the importance of price and income factors and a simultaneous increase in the significance of socio-demographic factors assumed to underpin consumer tastes and preferences. To explain observed differences in household expenditure patterns, convenience and perceived healthiness were the main reasons for such differences. When household preferences for convenience were further explored, it was determined that younger households, all-working households, urban households, female-headed households, educated households, professional households and single adult households showed expenditure patterns suggestive of a desire for convenience. Their findings imply that meat demand cannot be stimulated merely through economic incentives but through food attributes that changing lifestyles demand, such as convenience.

A study by Valdecañas in 1978 (as cited by Palinar, 2001) described that food behavior, preferences and consumption of consumers in the Philippines are affected by cultural, social, nutritional factors and economic factors. Aside from those factors, personal and psychological factors also influence buying behavior of buying units (individuals or groups). Palinar's study showed that consumers with low income had lower purchasing power thus low consumption level and those with higher income had a higher level of consumption.

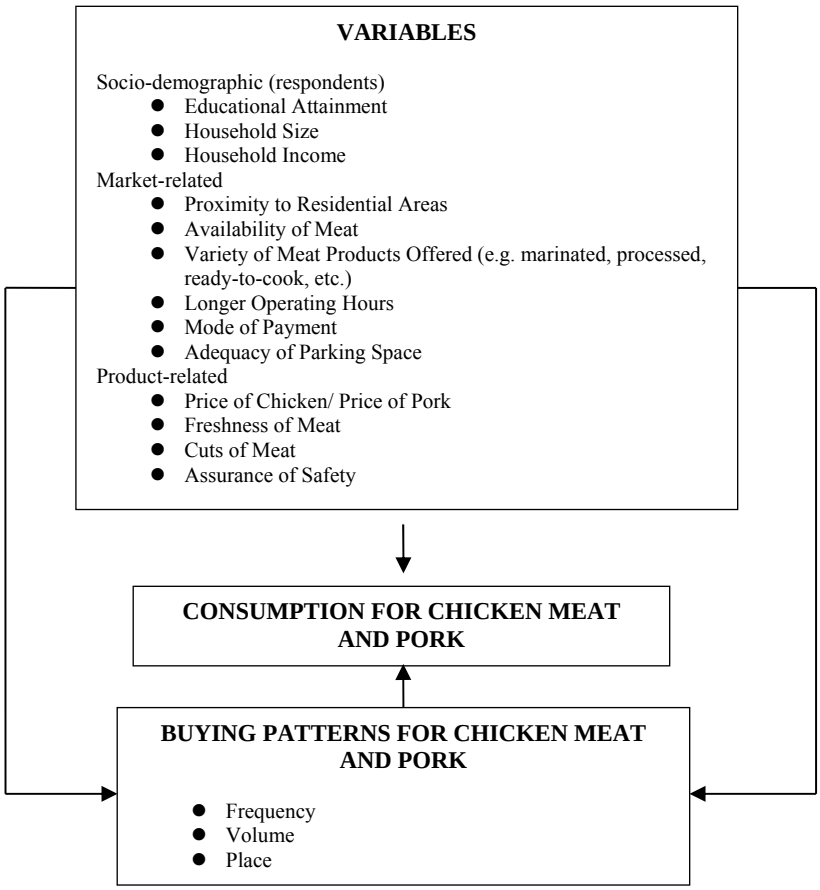
Lastly, consumers' choice of markets has been found to be influenced by the prices and quality of the product offered. Consumers tend to cling to markets which offer low and affordable prices given the best quality of the product (Sales, 2005).

III. Economic Model

The economic model includes only the variables that could affect the buying patterns and consumer preferences of consumers. The policies, practices and environment of the retailers are not included in the model.

Buyer consumption and purchasing patterns with respect to frequency, volume and place of purchase are affected by factors that were classified into three categories of variables: socio-demographic, market-related and product-related as shown in Figure 1. Socio-demographic variables include educational attainment, household size and household income. Market-related variables are proximity to residential areas, availability of meat, variety of meat products offered, longer operating hours, mode of payment, and adequacy of parking space. On the other hand, product-related variables include prices of chicken/ pork, freshness of meat, assurance of safety and type of meat cuts. These variables generally may have an effect on consumers' buying patterns, thus affecting consumption for chicken and pork as shown in the following operational framework:

Figure 1. Operational framework of the buying patterns and consumer preferences for poultry and pork, 2009



IV. Methodology

Descriptive research design was used to explain the market retailers' personal and business profile, and also their business operations to present and identify a particular pattern or characteristics regarding consumers' buying and consumption behavior for poultry and pork. On the other hand, in analyzing the data obtained from the households (consumers), Eta correlation, Spearman correlation, and regression analysis were used in determining the factors affecting consumer buying patterns, preferences and consumption of chicken meat and pork in Los Baños, Laguna, Philippines. The aforementioned analytical tools using a 95% level of confidence were employed since the data gathered included different variables—nominal and interval. Eta correlation was used to determine the strength of association between nominal and interval variables. Relationships between interval variables were ascertained using Spearman correlation. Variables from the Eta and Spearman correlations which were found to have associations with each other were then subjected to regression analysis to validate relationships between dependent and independent variables. Two regression methods were used: linear regression and probit regression. Linear regression was used in determining the effects of the different factors on quantity demanded and frequency of purchase. Each of the functional forms was fitted separately in terms of quantity demanded for chicken, quantity demanded for pork, frequency of

buying chicken and frequency of buying pork. Probit regression was used to determine the factors affecting place of purchase for chicken as well as pork. The functional forms were regressed as a function of the following variables: its own price, household income and educational attainment of the principal purchaser.

The basic linear equation is: $Y=\beta_0+\beta_1 X_1$

Wherein: Y= quantity demanded

β_0= intercept

β_1= parameter estimate

X_1 = variables (price of chicken/pork, household income, and educational attainment)

Statistical tools such as frequencies and percentages were also used to analyze the data obtained from the respondents.

Sampling Procedure

The study was conducted in the fourteen (14) villages of Los Baños, two wet markets and two supermarkets. A number of chicken and pork retailers (16 chicken retailers and 32 pork retailers) in the two wet markets—Batong Malake Wet Market and Poblacion Wet Market-- were interviewed. The supervisor of the meat section in one supermarket was also a key informant. For the selection of the consumer respondents, stratified random sampling was used. The sampling design ensured a well-distributed representation of respondents in each village to represent the whole municipality. A random sample of 182 households was obtained. Thirteen (13) respondents from each village were interviewed so that the sampling population had equal distribution from all villages. In every village, systematic random sampling was done by interviewing the primary purchaser of the household for every tenth household in the village.

V. Results and Discussion

The strengths of association between place of purchase and interval variables (educational attainment, household size, household income and prices) are presented in Table 1. Household income and prices of chicken and pork were found to have a significant effect on the place of purchase of chicken and of pork.

Table 1. P-values generated from correlation on interval variables age, educational attainment, household size and price and nominal variable place of purchase

Method: Eta Correlation Analysis

VARIABLES	P-VALUES				
	Educational Attainment	Household Size	Household Income	Price of Chicken	Price of Pork
Place of purchase (chicken)	0.189	0.041	0.562*	0.574*	Na
Place of purchase (pork)	0.082	0.064	0.554*	Na	0.563*

*moderate association

Tables 2 and 3 show the relationships between interval variables using Spearman correlation. The frequency of purchase for chicken or pork and educational attainment are positively related. This implies that consumers with higher educational attainment bought chicken and/or pork more frequently compared to those with lower educational attainment. Moreover, educational attainment of the primary purchaser has a positive effect on quantity demanded for both meat types. This means that the higher the educational attainment of the principal purchaser, the higher the demand and thus the consumption for chicken and/or pork. A possible reason is that educated people consume more chicken and/or pork because they were aware of the nutritional values they can get from consuming these meats. Household income positively affects the quantity demanded for chicken and pork and frequency of buying chicken and pork. As income increased, quantity demanded for chicken and pork and frequency of purchase of these meats also increased.

Prices of chicken and pork were found not to have an effect on the quantity demanded and frequency of purchasing these meats. This may due to the fact that majority of the households in Los Banos considered chicken and pork as necessities and despite the increasing prices of these meats, they still purchase and consume such meat. Frequency of purchase has a positive relationship with quantity demanded and vice versa. This implies that an increase in quantity demanded would increase frequency of purchase. When demand for chicken and/or pork increases, people are likely to purchase these meats more frequently.

Table 2. Coefficients generated from Spearman correlation on poultry

VARIABLES	Educational Attainment	Household Size	Household Income	QD Chicken	Frequency Chicken	Chicken Price
Quantity Demanded	0.31106	0.00365	0.32912	1	0.84166	-0.2605
Chicken	<0.0001*	0.961	<0.0001*		<0.0001*	0.0632
Frequency	0.84166	0.06937	0.82001	0.83503	1	-0.35140
Chicken	<0.0001*	0.3521	<0.0001*	<0.0001*		0.0625

*significant at 5% level

Table 3. Coefficients generated from Spearman correlation on pork

VARIABLES	Educational Attainment	Household Size	Household Income	QD Pork	Frequency Pork	Pork Price
Quantity Demanded	0.3169	0.05006	0.05023	1.0000	0.86306	-0.36264
Pork	<0.0001*	0.5022	<0.0001*		<0.0001*	0.0601
Frequency	0.29777	0.07832	0.29832	0.86306	1.0000	-0.33828
Pork	<0.0001*	0.2933	<0.0001*	<0.0001*		0.0593

*significant at 5% level

The variables determined to have effects on quantity demanded, frequency of purchase and place of purchase were: educational attainment, household income and price of chicken and pork. A total of six regression runs were made and two types of regression methods were utilized.

Table 4 shows the regression coefficient was positive for quantity demanded and household income. This means that as household income increases, quantity demanded and consumption for pork and chicken also increase. Following the linear model equation $Y = \beta_0 + \beta_1 X_1$, if the values were substituted, the equation for quantity demanded will be $QD(pork) = 1.27173 + 0.20097 HHincome$ and $QD(chicken) = 1.68638 + 0.22924\, HHincome$. Based on the equation, as household income increases, quantity demanded for pork will increase by 1.27173 + 0.20097 and quantity demanded for chicken will increase by 1.68638 + 0.22924. Thus, households belonging to the highest income group, or Group A, consumed more chicken meat and pork in comparison to lower income groups. In addition, when household income increases, frequency of buying chicken and pork will increase by 0.72901 and 0.60087, respectively.

Educational attainment was also found to affect quantity demanded for chicken and pork as in general, the higher the educational attainment of a consumer, the higher the income. Educational attainment is an indicator of income. Demand will increase by 0.14721 + 0.0131 (educational attainment) for chicken and 0.02646 (educational attainment) for pork if educational attainment increases.

Table 4. Results of linear regression analyses for consumption and frequency of purchase of chicken and pork

	DEPENDENT VARIABLE			
INDEPENDENT VARIABLE	Quantity Demanded	Frequency	Quantity Demanded	Frequency
	Chicken	Chicken	Pork	Pork
Educational Attainment	0.0131	0.6004	0.02646	0.03792
	0.0490*	0.05351	0.0418*	0.0567
Household Income	0.22924	0.72901	0.20097	0.60087
	<0.0001*	<0.0001*	<0.0001*	<0.0001*
Price	0.0053	0.0025	0.0027	0.0019
	0.0834	0.1991	0.0915	0.1991

*significant at 5% level

As shown in Table 5, with place of purchase (supermarket) as the dependent variable, the variable household income generated positive probit indices both for chicken and pork (0.2817 and 0.4834, respectively). This implies that as household income increases, the higher the probability that they will buy chicken as well as pork from supermarkets. Prices of chicken and pork, on the other hand, resulted to negative indices for supermarkets. This means that as prices of chicken and/or pork increases, the higher the probability that they will not buy from supermarkets.

Table 5. Results of probit regression analyses for place of purchase of chicken and pork

Probability modeled is place of purchase (supermarket)

PARAMETERS	Chicken	Pork	Chicken	Pork
	Estimate	Coefficient	Estimate	Coefficient
Intercept	-48.7369	0.0506	-0.5595	0.1885
Household income	0.2817	<0.0001*	0.4834	<0.0001*
Price	-0.4066	<0.0001*	-0.3075	<0.0001*

*significant at 5% level

VI. Summary and Conclusion

Based on the data gathered from the consumer respondents, most of the buyers of chicken meat and pork were parents, mostly mothers. They were also the ones who decide on what and where to buy meat. Most of the consumers had specific brands of chicken in mind when shopping, but only few preferred to buy branded pork. They tend to buy whatever caught their attention and tried new products as long as the meat has good quality and price was reasonable. The consumers who bought branded chicken meat knew the brand because their families and friends referred it to them. If not, they became aware of the brand because they just saw it in the market and tried it. In the case of "choice cuts" in chicken meat, only some of the respondents bought it. Most of the consumers chose to buy whole chicken. These may be because the household members have different favorite parts of the chicken. The most frequently purchased chicken cuts were legs and drumsticks. On the other hand, the most preferred pork cuts were *kasim* (shoulder/butt), *liempo* (belly) and pork chops. It was also found out that most of the consumers bought chicken meat and pork, once or twice every week, ranging from at least ½ - 1 kilogram to three kilograms at most. A majority of the households bought chicken and pork from the wet markets. The potential demands for chicken and pork in wet markets were estimated to be 16,187.80 and 15,337.32 kilograms respectively. In supermarkets, on the other hand, the potential demand was approximately 7,805.96 kilograms of chicken and 5,324.11 kilograms of pork.

Frequencies and percentages were used to determine the effects of some non-economic variables in the buying patterns of the consumers. The major factors which appeared to have an association with the buying patterns of the households were freshness of commodities, location, markets' operating hours, availability of meat, assurance of safety and adequacy of parking space. The wide variety of products and better cuts of meat offered also turned out to be correlated to the buying patterns of consumers. Results showed that most consumers bought chicken and pork from wet markets primarily because of the perceived freshness of the meat, followed by proximity to their residences, availability of meat and longer working hours. On the other hand, most households bought meat from supermarkets because of assurance of safety, followed by adequacy of parking space and better cuts of meat and lastly, the availability and variety of products offered.

Linear and probit regression models were used to determine the effects of different factors to quantity demanded, frequency of purchase and place of purchase. Factors assumed to affect buying patterns and consumer preferences were educational attainment of the primary purchasers, household income, household size, prices of related goods and price. However, educational attainment, household income and price were the only variables that affect buying behavior. It was found that consumers with higher educational attainment and higher incomes bought and consumed more chicken and pork. Furthermore, the higher the income, the greater the probability of shopping in supermarkets. Prices of chicken and pork also had an effect on where consumers bought their chicken meat and pork. As meat price increases, the probability that the consumers will buy from wet markets also increases.

Overall, the findings suggest that since a majority considered chicken and pork meat necessities and there were factors found to influence the consumer buying patterns and preferences for these meat, a thorough understanding of these factors would help marketers in improving their strategies as they aim for customer loyalty and patronage.

VII. References

Atendido, B.V.(2007).Market Analysis for Monterey Meat Shop in Los Baños, Laguna.
Unpublished Business Research Report. CEM, UPLB

Britania, A.A. (2001). Business Operation and Credit Profiles of Public Market Vendors of Lucena City. Unpublished Undergraduate Thesis. CEM, UPLB

Calalang, R.F. (1996). *Retailing of Vegetables Through Supermarkets in Metro Manila.* Unpublished Undergraduate Thesis. CEM, UPLB

Chang. [Online] Available. www.searca.org/ajad/ archives/v-04/02/ajad_v4_n2_chang.pdf

Direct Marketing Sustainable Meat to CSA and Buying Clubs: Exploring the Financial and Logistical Practicality in Central Iowa.(2005).17 p.www. practicalfarmers.org

Dyck, J.H. and K.E. Nelson. (2003).*Structure of the Global Markets for Meat*. USDA-Agriculture Information Bulletin No. 785, pp. 1-37

Javier, A.B. (1990) *Enterprise Study Among Meat Retailers in Los Baños, Laguna*. Unpublished Undergraduate Special Problem Report. CEM, UPLB

Kotler, P. and G.Armstrong (1996). *Principles of Marketing*. New Jersey: Prentice Hall Inc., pp. 11-12

Llaguna, M.F. (1996) *Retail Marketing of Pork and Chicken in Selected Public Markets in Laguna.* Unpublished Undergraduate Special Problem Report. CEM, UPLB

Manalad, J.T. (2003) *The Marketing of Pork and Beef in Tanauan City, Batangas.* Unpublished Undergraduate Special Problem Report. CEM, UPLB

Meat and Meat Products. FAO/GIEWS – Food Outlook No. 2 (May 2002), p. 12. http://www.fao.org/docrep/ 005/y6668e/Y6668e13.htm

Menkhaus, D.J., et.al. (1985). *A Reexamination of Consumer Buying Behavior for Beef, Pork and Chicken*. Western Journal of Agricultural Economics, 16(1):pp. 116-125

Moliñawe, J.A.(2002). Consumers' Market Selection for Fresh Meat and Fish in Los Baños, Laguna. Unpublished Undergraduate Thesis. CEM, UPLB

Mowen, J. and M. Minor. (1995). *Consumer Behaviour*. Fifth Edition. New Jersey: Prentice Hall Inc.

Newman, Carol, et.al.(2002). *Factors Shaping Expenditure on Meat and Prepared Meals.* http://www.teagasc.ie/research/reports/foodprocessing/5376/eopr-5376.asp

Palinar, J.P. (2001). Consumers' Purchasing and Consumption Behavior for Meat and Meat Products in Los Baños and Nagcarlan, Laguna.Unpublished Undergraduate Thesis. CEM, UPLB

Peter, P. and J. Olson.(1994). *Understanding Consumer Behaviour*. Boston: Richard D., Inc.

Sales, J. A.(2005). Chicken Quality and Safety: An Evaluation of Consumer Willingness to Pay for Native Chicken in the Philippines. Unpublished Undergraduate Thesis. CEM, UPLB.

Schreiner, M. and D. Birchler. (1995). Evidence of Shifts in Tastes for Meat in the U.S., 1980-1990. The Ohio State University

Shepherd, A. The Implications of Supermarket Development for Horticultural Farmers and Traditional Marketing Systems in Asia. [Online] Available

http://www.fao.org/ag/ags/subjects/en/agmarket/docs / asia_sups.pdf