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POLITICAL MANAGEMENT AND CORRUPTION IN DEVELOPING NATIONS

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ABSTRACT

This study empirically explores the relationship between corruption and the quality of political management in developing nations using a cross-country data set. Specifically, this analysis jointly considers the two theoretical effects of corruption, 'grease the wheels' and 'sand in the wheels', argued in the literature to determine if a nonlinear relationship exists between corruption and the quality of political management. Using a cross-country data set of 114 countries, the results of this study suggest that corruption has an overall negative effect on the quality of political management in developing nations; however, political managers can benefit from a minimal level of corruption and that the complete absence of corruption can hinder the effectiveness of political managers. The Concluding Comments section includes a discussion of the policy implications of the findings.

JEL: O57; O15

KEYWORDS: Political Management, Corruption, Developing Nations, Nonlinear

INTRODUCTION

Political leaders influence and guide all facets of a country's growth and development. Through domestic and international policy development, political leaders shape the economic, social, and political landscape of their countries. The relationships policy leaders form with other global leaders can significantly affect their country's standing in the global community, which can then play a role in international trade and foreign direct investment, among many other factors. In short, political leaders have a substantial influence on almost every aspect of their country; from its basic economic well-being to its global relationships. Nonetheless, some policy leaders have been very successful in leveraging their countries' positive attributes by steering their countries through sustained democratic transformation and development, while other leaders have floundered. Thus, the question arises as to what factors can influence policy leaders' ability to bring about effective country-level change and development. In other words, what factors influence effective political management?

In regards to effective political management, the focus of this study is political leaders operating in developing or transforming countries. Although past research has identified several factors that can alter the effectiveness of political managers, an area needing further study is the effect of corruption on the quality of political management, especially in developing nations. Researchers such as Aguilera and Vadera (2008), Johnston (1996), Heidenheimer (1989), and Van Klaveren (1989) have described corruption as a variety of behaviors. These included bribery of public officials, collusion between two parties, and the abuse of authority for personal gain. A considerable literature has found that corruption weakens a country's institutions and hampers nation-building activities designed to bring about transformative change, or as Ades and Di Tella (1997), state corruption acts as 'sand in the machine'. Nonetheless, as Jain (2001) summarizes, there is a small, but growing stream of research that finds corruption can 'grease the wheels' of bureaucratic rigidities and facilitate transactions and, in this light, serve to increase efficiency. Thus, past studies suggest that corruption can either hinder or, in some cases, boost political leaders' ability to drive positive transformative change and development. Current news out of two countries illustrate polar opposite effects of corruption on the

international and economic status of the country. According to a recent story by Romero in the New York Times (April 24, 2013), Paraguay is the "fastest growing country in the Americas," while being extremely corrupt, especially in land disputes. Alternatively, Zimbabwe, in economic decline fueled in part by government corruption, recently reelected their leader, Mr. Mugabe, to a seventh consecutive term in power.

If the 'grease the wheels' and the 'sand in the wheels' arguments are considered jointly, this can suggest a nonlinear relationship between the quality of political management and corruption. This study empirically explores the relationship between corruption and political management using a cross-country data set to determine if a nonlinear relationship exists between corruption and the quality of political management in developing nations.

The remainder of the document is organized as follows: the next section discusses the current literature and findings related to corruption and political management; the Data and Methodology section provides summary statistics and a discussion of the methodology used to empirically test the hypothesis, as well as a greater description of the data and control variables used in this analysis; Results and Discussion presents the analysis results and discusses the empirical findings with an emphasis on the results of the hypothesis test; and finally, Concluding Comments provides a brief summary of the study and offers policy implications associated with the findings in addition to providing avenues for future research.

LITERATURE REVIEW

Past research has identified corruption as the cause of a variety of economic, political, and financial ills and the World Bank (2008) has stated that corruption is among the greatest obstacles to economic and social development as it undermines development by crippling the institutional foundations on which economic growth depends. Hellman et al. (2000) and De Maria (2008) offer empirical evidence that corruption weakens economic growth. Specifically, using a cross-country data set comprised of data from over 3,000 firms Hellman et al. (2000) find that the growth rate of the enterprise sector in countries with pervasive legislative corruption is approximately ten percentage points lower over a three-year period compared to countries without pervasive legislative corruption. Further, De Maria (2008) notes that the African Development Bank estimates that corruption costs African economies more than $148 billion dollars each year, which translates into a 50 percent loss in tax revenue and raises the cost of African goods by approximately 20 percent. De Maria (2008) states that corruption has caused a 25 percent cumulative loss in Africa's GDP.

Macrae (1982), Alam (1995), and Ades and Di Tella (1997 and 1999) also find that corruption harms private sector development and leads to the misallocation and inefficient use of resources, which can be attributed to government officials' bias towards inefficient projects that are associated with greater bribes. Hibbs and Piculescu (2005) support this theory and state that corrupt bureaucrats, in collusion with firms, have the incentive to exploit opportunities in the unofficial sector. Mahagaonkar (2008) also notes that corruption can delay innovation and other start-up activities as corrupt officials tend to stall in granting permits until offered a greater bribe. Thus, corrupt practices can delay economic activity, increase the cost of conducting business and result in an inefficient use of resources. On the global stage, Mauro (1995), Gastanga et al. (1998), Wei (1999), and Zhao et al. (2003) find that corruption disrupts international trade and investment. As Kehoe (1998), Jain (2001), and Lamsdorff, (2003) conclude, the consensus of much theoretical and empirical research is that corruption negatively affects a country's ability to flourish and compete in the global economy.

The above research clearly suggests that pervasive corruption will hamper political management and render those operating in such countries as ineffective political leaders. If corruption weakens the

economic institutions needed to support sustained growth in developing nations, then even non-corrupt political leaders operating in countries with widespread corruption will face considerable obstacles in bringing about effective democratic change. Nevertheless, China and Italy are clearly exceptions to this rule. As summarized in Jain (2001) there is another stream of research that suggests that corruption can 'grease the wheels' of bureaucratic rigidities and facilitate transactions and production in some economies.

In this vein, Osterfeld (1992) states that the presence of corruption can expand output and productivity as bribes allow for more free market exchange. Cuervo-Cazurro (2008) and Lui (1985) find that corruption can facilitate transactions and speed-up procedures, which can increase efficiency. Bardhan (1997) historically links corruption to free thinking entrepreneurs and Dreher and Gassebner (2007) find that corruption increases entrepreneurial activity in highly regulated economies. Thus, while much research has identified the negative effects of corruption on a variety of economic and business factors, corruption has also been found to increase efficiency and economic activity in some societies. Building on this body of research, if corruption can facilitate transactions and 'grease the wheels' of economic activity, then corruption can possibly increase the quality of political management in some societies.

In sum, a significant body of research suggests that corruption should hinder political management; however, there is a small, but growing literature that implies that corruption can boost political management. If these two opposing theories are jointly considered -- 'grease the wheels' and 'sand in the wheels' -- this can suggest a nonlinear relationship between the quality of political management and corruption. Specifically, it is hypothesized that in countries where corruption is all invasive, political management is the least efficient as political leaders will face significant barriers in every area in which they seek to implement positive change and development. As corruption is reduced from the most pervasive levels to more moderate levels, political management should become increasingly more efficient as these leaders face fewer barriers and slowdowns. Nonetheless, by considering the studies finding that corruption can increase efficiency in some countries, it is hypothesized that in countries where corruption is minimal or nonexistent, political managers can be less effective. In other words, some low level of corruption can serve to assist political leaders in bringing about effective change as the existence of some corruption can ease bureaucratic rigidities and facilitate transactions. Thus, H1 is stated:

H1: The relationship between effective political management in developing nations and the level of corruption is nonlinear. Political management is least effective at high levels of corruption and improves as corruption is mitigated. Once corruption reaches some minimal or non-existent level, then the efficiency of political management will begin to decline.

This hypothesis is empirically tested using sample data from 114 countries. The data and research methods are discussed in the following section.

DATA AND METHODOLOGY

Political Management and Corruption Data

The Political Management Index (PMI), created by Bertelsmann Stiftung and the Center for Applied Policy Research, is used to proxy the overall quality of political management in developing countries. The Bertelsmann Stiftung Report (BSR, 2012) assesses the quality of political management in125 transformative countries with populations of more than two million that have not yet achieved a fully consolidated democracy and market economy. The Report describes the PMI data, which is designed to measure political decision makers' steering and management capabilities in development and

transformation processes. In particular, the focus is on political leaders' ability to lead economic, social, and political transformations in emerging nations. In its calculations, the PMI data considers the actions of governments, political elites, and nongovernmental organizations that play a role in the development process. The PMI data is the first to provide global measures of the quality of political management in emerging nations.

To calculate the PMI data, BSR defines management as consisting of four sub-indices; (1) Steering Capability, which measures the ability of political leadership to manage reform effectively and achieve it policy priorities; (2) Resource Efficiency, which assesses the government's ability to make optimum use of available resources; (3) Consensus Building, which indicates whether the political leadership establishes a broad consensus on reform with other players; and (4) International Cooperation, measuring the willingness of a country's political actors to cooperate with outside supporters, organizations, and neighboring states. In recognition that political leaders face varying degrees of challenge in their respective countries, the BSR weights each country's PMI by this level of difficulty. Specifically, the BSR considers each country's structural constraints such as internal conflicts, per capita income levels, education index, and rule of law and weights each country's PMI based on the strengths or weaknesses of these structural constraints. The PMI values range from one to ten where a higher score indicates a higher quality of political management, which takes into consideration the degree of challenge political leaders' face. In this analysis the 2012 PMI data is used, capturing political managers over the period 2009 to 2011.

The Corruption Perception Index (CPI) created by Transparency International (2007) is used in this study to proxy for country-level corruption levels. The CPI measures the degree to which officials and politicians are believed to accept bribes or illicit payments in public procurement, embezzle public funds, or commit offences. The CPI is based on a continuous scale from zero (all-pervasive corruption), to ten (no corruption). Greater CPI values indicate lower corruption levels. This index is not based upon information from the organization's own experts, but is constructed as a weighted average of different indices from ten different well-recognized international organizations and reflects the impressions of business people and risk analysts who have been surveyed. Although other measures of corruption are available, Lancaster and Montinola (1997) and Serra (2006) state that the CPI is the most comprehensive and robust measure of corruption and is unlike other measures that are based on individual sources, such as Business International, International country Risk Guide, World Bank index, and the World Competitiveness Report. As Berg (2001) notes the CPI is probably the most well-known corruption indicator.

Control Variables

Economic freedom plays an important role in determining the quality of a country's infrastructure and affects several economic, business, and political institutions and factors such as government size, business and trade freedoms, as well as the existence of property rights. Economic freedom permeates almost every facet of business and influences the ability of government officials to achieve their goals and effectively manage resources. An economically free country typically enjoys a stable legal and monetary system, has efficient markets and is generally more open and connected to global markets. As Berggren (2003) notes, economically free institutions are able to provide growth-enhancing incentives by allowing for higher return on innovation and production through low taxation and protection of private property, which results in a more efficient use of resources. Further, Akhter (2004) states that economic freedom is needed in order to facilitate international cooperation and, as Weaver and Rockman (1993) note, institutions matter for the success of public policies. Restriction of economic freedoms generally leads to resource inefficiencies and difficulties with consensus building and international cooperation. Such limitations restrict the ability of leaders to establish transformative change and thus serve to hinder the quality of political management in economically restricted countries.

Country-level economic freedom is controlled for in this analysis using the 2007 Index of Economic Freedom (EFI) created by the Heritage Foundation. The *EFI* considers 50 economic freedom variables that are divided into ten categories; Business freedom, Trade freedom, Fiscal freedom, Government spending, Monetary freedom, Financial freedom, Property rights, Freedom from corruption, Investment freedom and Labor market freedom. Each of the freedoms is individually scored and a country's overall economic freedom score is the average of its scores on the ten individual freedoms. The EFI ranges from zero to 100, with 100 representing the greatest economic freedom.

Democratic societies are typically associated with political stability, greater freedom of choice, strong government institutions and overall higher quality of governance. Moon et al. (2005) state that countries with less democratic governments tend to marginally employ services that enhance efficiency and have less transparent and interactive relations with its citizens. Further, Isham et al. (1997) find that greater civil liberties and political rights serve to increase citizen participation, resulting in greater efficacy of government actions. Greater political and civil freedoms also enhance consensus building, needed for political leaders to carry out transformative change. Thus, all else equal, political leaders operating in societies with greater democratic freedoms are more likely to have a higher overall quality of management relative to those working in more autocratic systems.

In this study, the Political (*PR*) and Civil Liberties (*CL*) indices, constructed by Freedom House (2007), are used to proxy the level of democratic freedom within a country. Political rights largely refer to the freedom to organize in political parties or groupings, the existence of party competition and the fairness of elections. Civil liberties refer to the freedoms afforded to the media, the right to open and free discussions, the freedom of assembly and religious expression, the protection from political terror and the prevalence of the rule of law. Both indicators are measured on a scale of one to seven, where higher numbers imply fewer rights and liberties. As both measures represent important facets of democracy, the average of the two values (*PRCL*) is used. Past researchers such as Barro (1999) and Emerson (2006) have used this un-weighted average of PR and CL to approximate country level democracy.

Finally, political leaders operating in different geographical regions of the world face unique challenges. Thus, regional indicators for Eastern Pacific / Southern Asia (EPSA), Latin America (LA), Eastern Europe (EE), and the Sub-Saharan African (SSA) are accounted for, using North Africa and Middle East countries as the benchmark.

Table 1 provides descriptive statistics for the data used in the analysis. With the exception of regional indicators, the data for all variables used in this analysis are collected and reported on an annual basis. The most recent 2012 *PMI* data is used as the dependent variable and, considering that the effect of the control variables cannot be expected to occur immediately, all other variables are lagged by approximately five years to allow time for these factors to affect the quality of political management. Finally, the data used in this analysis was available for 114 countries.

Table 2 provides the correlation matrix of all variables used in the analysis. As shown below, PMI is positively and significantly correlated with CPI and EFI and negatively and significantly correlated with PRCL. These relationships suggest that countries with lower levels of corruption and greater economic freedom that are more democratic tend to also enjoy a higher quality of political management. These relationships are expected given previous research. Nonetheless, the correlations only suggest associations and in order to test for a causal and possible nonlinear relationship between PMI and CPI as stated in H1, a regression analysis is necessary.

Table 1: Data Summary and Descriptive Statistics

Variable	Proxy (Name, Year Reported)	Reporting Frequency	Min	Max	Mean	St. Deviation	*n*
PMI	Political Management Index (*PMI*, 2012)	Annual	1.77	7.72	5.00	1.402	114
CPI	Corruption Perception Index (*CPI*, 2007)	Annual	1.40	9.30	3.32	1.338	114
EFI	Index of Economic Freedom (*EFI*, 2007)	Annual	28.60	87.20	57.83	8.872	114
PRCL	Freedom House (*PRCL*, 2007)	Annual	1.00	7.00	3.83	1.784	114
EPSA	Eastern Pacific / Southern Asia	N/A	N/A	N/A	N/A	N/A	19
LA	Latin America	N/A	N/A	N/A	N/A	N/A	21
EE	Eastern Europe	N/A	N/A	N/A	N/A	N/A	23
SSA	Sub-Saharan Africa	N/A	N/A	N/A	N/A	N/A	33
NAME	North Africa and Middle East	N/A	N/A	N/A	N/A	N/A	18

Table 1 provides a summary of the data sources used in the analysis in addition to the descriptive statistics. Although the PMI data represents 2012, it captures political managers' activities over the period 2009 to 2011. Thus, the independent variables are lagged approximately two years as their effect on the quality of political management cannot be expected to occur immediately.

To explore the relationship between PMI and CPI, two regression models are estimated. First, Model 1 is estimated using the data described in Table 1 for the 114 countries for which data was available for all variables:

$$PMI = \beta_0 + \beta_1 CPI + \beta_2 EFI + \beta_3 PRCL + \beta_4 EPSA + \beta_5 LA + \beta_6 EE + \beta_7 SSA + \varepsilon \quad (1)$$

This model is estimated to explore the overall relationship between corruption and the quality of political management. Given the extensive literature that suggests that corruption hampers the quality of political management, or serves as 'sand in the wheels', it is expected that the coefficient on CPI, β_1, will be significant and positive as greater values of CPI indicate lower corruption levels.

Table 2: Correlation Table

	PMI	*CPI*	*EFI*	*PRCL*
PMI	1			
CPI	0.627***	1		
EFI	0.628***	0.711***	1	
PRCL	-0.833***	0.522***	-0.575***	1

Table 2 provides the correlation matrix of all of the data used in the analyses. The correlations indicate countries with lower levels of corruption and greater economic freedom that are more democratic tend to also enjoy a higher quality of political management. These relationships are expected given previous research.

To test H1, Model 2 is estimated that allows for a nonlinear relationship between corruption and the quality of political management by including a squared CPI term. The second regression allows for the possibility that corruption can have both a 'sand in the wheels' and the 'grease the wheels' effect on the quality of political management.

$$PMI = \beta_0 + \beta_1 CPI + \beta_2 CPI^2 + \beta_3 EFI + \beta_4 PRCL + \beta_5 EPSA + \beta_6 LA + \beta_7 EE + \beta_8 SSA + \varepsilon \quad (2)$$

If β_1 is significant and positive and β_2 is significant and negative, this will provide empirical evidence to support H1.

RESULTS AND DISCUSSION

As shown in Table 3, the regression results for Model 1 provide overall support for the model with an Adjusted R^2 of 0.7433 and a significant *F* at the 99 percent confidence level. White's (1980) general test for heteroscedasticity suggests that the residuals are homoscedastic and the Variance Inflation Factor

(VIF) for each of the explanatory variables is less than 10, the cutoff suggested by Field (2005). In reference to the control variables, the coefficient on PRCL is significant and negative, indicating that countries with fewer democratic freedoms are associated with a lower quality of political management. The coefficient on EFI is not significant, which was not expected given previous research. A possible explanation for this result is that Model 1 accounts for democratic freedoms and corruption levels and when both of these factors are controlled for, they subsume some of the effect of economic freedom on the quality of political management. Finally, the significant and positive coefficient on the regional indicator for Eastern Pacific / Southern Asia countries suggests that political leaders operating in these countries have an advantage in their political management. Most importantly, the coefficient on CPI is significant and positive, which indicates that corruption hinders the ability of political managers to direct transformative change.

Table 3: Model 1 Estimated Regression Results

	Coefficient Estimate	**Std Err**	***t* Stat**	**VIF**
Intercept	5.030	0.768	6.55***	0
CPI	0.233	0.074	3.14***	2.206
EFI	0.016	0.012	1.37	2.344
PRCL	-0.512	0.056	-9.20***	2.212
EPSA	0.409	0.239	1.71*	1.792
LA	0.118	0.265	0.44	2.393
EE	0.262	0.253	1.04	2.322
SSA	0.374	0.228	1.64	2.418
Adj. $R^2 = 0.7433$	*F* stat = 47.75***	*p* <0.10*; **p <0.05; ***p<0.01		

Table 3 provides the estimated regression result for Model 1. The positive and significant coefficient on CPI suggests that, overall; corruption lowers the quality of political management.

To test H1, Model 2 is estimated using the squared CPI term. When a regression model involves a squared or nonlinear term many researchers, such as Jewell (2003), advocate using centered data in the regression. A centered regression model is often preferred as it provides a more meaningful interpretation of the coefficients and reduces the multicollinearity that often arises with the introduction of a squared term. Given that preliminary regression analyses using non-centered data suggested that multicollinearity was present, the CPI and CPI^2 data are centered by their respective means and these centered terms were included in the regression analysis. The estimated regression results are shown in Table 4.

Table 4: Model 2 Estimated Regression Results

	Coefficient Estimate	**Std Err**	***t* Stat**	**VIF**
Intercept	5.442	0.809	6.72***	0
CPI_C	0.387	0.098	3.96***	4.009
CPI_C^2	-0.059	0.025	-2.36**	2.434
EFI	0.018	0.011	1.58	2.359
PRCL	-0.457	0.059	-7.71***	2.617
EPSA	0.550	0.242	2.28**	1.910
LA	0.261	0.267	0.98	2.523
EE	0.346	0.250	1.38	2.369
SSA	0.498	0.229	2.17**	2.553
Adj. $R^2 = 0.7539$	*F* stat = 48.23***	*p* <0.10*; **p <0.05; ***p<0.01		

Table 4 provides the estimated regression result for Model 2. The subscript C indicates the CPI is centered. The positive and significant coefficient on β_1 and significant and negative coefficient on β_2 offers empirical support for H1.

As shown above, the signs and the significance of the coefficients do not change substantially from the estimated results from Model 1. Most importantly, the coefficient on β_1 is significant and positive and β_2 is significant and negative, providing empirical support for H1. These results indicate that in countries where corruption is all pervasive, the quality of political management is the poorest as political leaders

suffer from barriers and slowdowns in every avenue in which they seek to create positive change and development. As corruption is reduced to more moderate levels, the quality of political management continues to improve as leaders face few restrictions and, at some low level of corruption, political management reaches a maximum in efficiency. Nonetheless, when corruption is completely eliminated, the quality of political management decreases slightly as some minimal level of corruption serves to assist leaders in steering positive change as some minimal corruption can grease the wheels of bureaucratic rigidities and facilitate transactions.

Using the estimated regression results from Model 2, the level of corruption that maximizes the quality of political management can be calculated by taking the partial derivative of the estimated regression with respect to CPI and then solving the first order condition. Those calculations suggest that the quality of political management is maximized when CPI is approximately 6.6, holding all else constant. In developing nations, a CPI value of 6.6 represents relatively low levels of corruption. Of the developing countries considered in this analysis, four countries have CPI values close to this point; Estonia (CPI value 6.5), Slovenia (CPI value 6.6), Uruguay (CPI value of 6.7), and Chile (CPI value of 7.0). Interestingly, these countries also have some of the higher PMI values of 7.44, 6.57, 7.66, and 7.15, respectively. The empirical results also provide examples for the existence of countries where each of the two competing theories better explain the relationship between corruption and political management. For example, Zimbabwe, Venezuela, and Myanmar exhibit the 'sand' phenomenon, while Paraguay, Benin and Mali are archetypes of the 'grease' hypothesis.

CONCLUDING COMMENTS

The objective of this study was to empirically test the hypothesis of a nonlinear relationship between corruption and the quality of political management in developing nations. The results of this cross-country study indicate that a nonlinear relationship does in fact exist and that while corruption has an overall negative effect on the quality of political management in most developing nations, a minimal level of corruption can 'grease the wheels' and enhance efficiencies. In other words, political managers can benefit from a minimal level of corruption. Nonetheless, the authors are not suggesting that policies or other means of increasing corrupt practices is a desired means to enhance the quality of political management in a country. Rather, the authors' objective was to jointly consider the 'sand in the wheels' and 'grease the wheels' theories to empirically explore if there was validity to both arguments.

The results of this study have policy implications. First, policies aimed to boost democratic freedoms will also serve to improve the quality of political management within a country. Further, while some minimal level of corruption can serve to benefit political managers, overall, policies aimed to reduce corrupt practices will also increase the quality of political management. For example, policies designed to increase transparency in government transactions should reduce corruption, as such practices would be more readily exposed and subject to scrutiny. If such policies are effective in increasing transparency and lowering corruption, a country's institutions and infrastructures will strengthen, which will provide political managers with greater tools to lead their countries through positive democratic transformations.

As with all empirical studies, this study is not without its limitations. Specifically, the quantitative variables used in this analysis are proxies for qualitative factors that are arguably difficult to quantify. The measures of perceived corruption, economic and democratic freedoms, and the quality of political management are approximate measures and are not without their criticisms. Thus, the results of this study should be considered in this light. Finally, this study suggests areas for future research. In the analysis above, developing nations are considered, but can the sand and grease in the wheels theories be jointly considered in developed nations? Further, as more data becomes available over time, does the relationship between corruption and the quality of political management exist over time? In other words, does this relationship exist using a panel data set? Given the importance of political management to a

country's overall well-being, future studies exploring the factors that shape the quality and effectiveness of these managers should be encouraged.

REFERENCES

Ades, A., & Di Tella, R. (1999) "Rents, Competition and Corruption," *American Economic Review*, 89(4), p. 982-93

Ades, A., & Di Tella, R. (1997) "The Causes and Consequences of Corruption: A Review of Recent Empirical Contributions," *Institute of Development Studies Bulletin*, 27, p. 6-12

Aguilera, R.V., & Vadera, A.K. (2008) "The Dark Side of Authority: Antecedents, Mechanisms, and Outcomes of Organizational Corruption," *Journal of Business Ethics*, 77, p. 431 – 449

Akhter, S. H. (2004) "Is globalisation what it is cracked up to be? Economic freedom, corruption, and human development," *Journal of World Business*, 39(3), p. 283 – 295.

Alam, M.S. (1995) "A Theory of Limits on Corruption and Some Applications," *Kyklos*, 48, p. 419-435.

Bardhan, P. (1997) "Corruption and Development: A Review of the Issues," *Journal of Economic Literature,* 35(3), p. 1320-1346

Barro R. J. (1999) "Determinants of Democracy," *Journal of Political Economy*, 107(2), p. 158-183

Berg, E. (2001) "How Should Corruption be Measured?" MSc Economics extended essay. Retrieved July 1, 2013, from London School of Economics and Political Science Web site: http://members.multimania.co.uk/eberg/measuring_corruption.pdf

Berggren, N. (2003) "The Benefits of Economic Freedom," *The Independent Review*, VIII(2), p. 193 – 211

Cuervo-Cazurra, A. (2006) "Who Cares about Corruption?' *International Journal of Business Studies*, 37, p. 807 - 822

De Maria, W. (2008) "Cross Cultural Trespass: Assessing African Anti-Corruption Capacity," *International Journal of Cross Cultural Management*, 8(3), p. 317-341

Dreher A., & Gassebner, M. (2007) "Greasing the Wheels of Entrepreneurship? Impact of Regulations and Corruption on Firm Entry," KOF Working Paper No. 166. . Retrieved July 1, 2013, from CESifo Web site: http://ssrn.com/abstract=989301

Emerson, P. M. (2006) "Corruption, Competition, and Democracy," *Journal of Development Economics,* 81(1), p. 193 – 212

Field, A. (2005) *Discovering Statistics Using SPSS*, 2nd edition. London: SAGE.

Freedom House (2007) *Freedom of the Press 2007: A Global Survey of Media Independence*. Edited by Karin Deutsch Karlekar. New York: Rowman & Littlefield Publishers.

Gastanga, V.M., J.B. Nugent, & Pashamova, B. (1998) "Host country reforms and FDI inflows: How much difference do they make?' *World Development*, 26(7), p. 1299-1314

Heidenheimer, A. J. (1989) "Perspectives on the Perception of Corruption" in A. J. Heidenheimer, M Johnston and V. T. LeVine: *Political Corruption: A Handbook*, New Brunswick

Hellman, J., G. Jones, D. Kaufmann, & Schankerman, M. (2000) "Measuring Governance, Corruption, and State Capture: How Firms and Bureaucrats Shape the Business Environment in Transition Economies," World Bank Policy Research Working Paper 2312. Retrieved May 30, 2013, from the World Bank Web site: http://unpan1.un.org/intradoc/groups/public/documents/un-dpadm/unpan044602.pdf

Hibbs, D.A., Jr., & Piculescu, V. (2005) "Institutions, Corruption and Tax Evasion in the Unofficial Economy," . Retrieved May 15, 2013, from Göteborg, Department of Economics Web site: http://128.118.178.162/eps/pe/papers/0508/0508003.pdf

Isham, J., Kaufmann, D.,& Pritchett, L.H. (1997) "Civil Liberties, Democracy, and the Performance of Government Projects," *The World Bank Economic Review*, 11(2), p. 219-42

Jain, S. (2001) *International Marketing*, South Western Publishing: Mason, Ohio.

Jewell, N. P. (2003) *Statistics for Epidemiology*. Boca Raton, FL: Chapman & Hall/CRC.

Johnston, M. (1996) "The search for Definition: The Vitality of Politics and the issue of Corruption," *International Social Science Journal*, 149, p. 321-335

Kehoe, W.J. (1998) "The Environment of Ethics in Global Business," *Journal of Business and Behavioral Science,* 2, p. 47-56

Lamsdorff, J.G. (2003) "The Transparency International Corruption Perceptions Index 2003-Framework Document," Retrieved July 1, 2013, from the Transparency International Web site: http://www.transparency.org

Lancaster, T. D., & Montinola, G. R. (1997) "Toward a Methodology for the Comparative Study of Political Corruption," *Crime, Law and Social Change*, 27, p. 85-206

Lui F. (1985) "An equilibrium queuing model of corruption," *Journal of Political Economics,* 93, p. 760-81

Macrae, J. (1982) "Underdevelopment and the Economics of Corruption: A Game Theory Approach," *World Development*, 10(8), p. 677-687

Mahagaonkar, P. (2008) "Corruption and Innovation: A Grease or Sand Relationship?" Jena Economic Research Papers, #2008 – 017. Retrieved July 12, 2013, from the Jena Economic Research Web site: http://www.econbiz.de/archiv1/2009/63495_grease_sand_relationship.pdf

Mauro, P. (1995) "Corruption and Growth," *Quarterly Journal of Economics*, 110(2), p. 681-712

Moon, J, M., Welch, W. E., & Wong, W. (2005) "What Drives Global E-governance? An Exploratory Study at a Macro Level," *Proceedings of the 38th Hawaii International Conference on System Sciences*, p. 1-10

Osterfeld, D. (1992) *Prosperity versus Planning: How Government Stifles Economic Growth*, New York: Oxford University Press.

Romero, S. (2013). "Boom Times In Paraguay Leave Many Behind," New York Times article, April 24, 2013. Retrieved October 1, 2013, from the New York Times Web site: http://www.nytimes.com/2013/04/25/world/americas/boom-times-in-paraguay-leave-many-behind.html

Serra, D. (2006) "Empirical Determinants of Corruption: A Sensitivity Analysis," *Public Choice,* 126, p. 225 – 256

Transparency International (2007), 'Corruption Perceptions Index, Retrieved November 1, 2005, from the Transparency International Web site: http://www.transparency.org/surveys/index.html#cpi

Van Klaveren, J. (1989) "The Concept of Corruption," In Hedienheimer, A.J., Johnston, M. and LeVine, V. (eds.), *Political Corruption: A Handbook*, Transaction Publishers: New Brunswick, N.J.

Weaver, R.K. & Rockman, B.A. (1993) *Do Institutions Matter? Government Capabilities in the United States and Abroad.* Washington, United States: Brookings Institution Press

Wei, S-J. (1999) "How Taxing is Corruption on International Investors?" *Review of Economics and Statistics*, 81(4), p. 1-12

White, H. (1980) "A Heteroskedastictiy-Consistent Covariance Matrix Estimator and Direct Test of Heteroskedasticity," *Econometrica,* 48, p. 817-838

World Bank. (2008) Retrieved May 1, 2012, from the World Bank Web site: http://web.worldbank.org/WBSITE/EXTERNAL/EXTSITETOOLS/0,,contentMDK:20147620~pagePK:283622~piPK:3544780~theSitePK:95474,00.html

Zhao, H.J., H.S. Kim, & Du, J. (2003) "The Impact of Corruption and Transparency on Foreign Direct Investment: An Empirical Analysis," *Management International Review*, 43, p. 41-62

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THE RELATIONSHIP BETWEEN COMPANY PERFORMANCE AND OWNER CHARACTERISTICS: EVIDENCE FROM MEXICO

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ABSTRACT

Business continuance and growth are determined by personal attributes of the company owner. This research identifies social & demographic similarities, as well as the attitudes of business owners in two Mexico cities. These entrepreneurs have managed to stay in business in the market from one context to another context. This will set a point of reference to current and potential businesspeople in terms of developing the necessary attributes. A simple random sampling was chosen for this survey, along with a questionnaire answered by 213 businesspeople. Negotiation-skills, creativity, hard-wok and self-discipline, are reported as remarkable features on these men and women.

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KEYWORDS: Small Business, Entrepreneur, Attitudes, Socio-demographic Characteristics, Business Growth

INTRODUCTION

The potential for growth among small and medium businesses has been identified by governments of various countries. Such small and medium companies are considered to be employment-generators and have an important role in Gross Domestic Product, according to statistical data (Raupp & Beuren, 2006). S&MBs (*Small & Medium Businesses*) in Mexico are more relevant as there is a tendency among College graduates for self-employment. The Occupation and Employment National Survey; ENOE (*Encuesta Nacional de Educación y Empleo),* reported in 2011 that there were 855,588 people with no occupation. These individuals, with either College or High School education, migrate to other places or start their own business. Yet the increasing percentage of new businesses is small.

This information shows that deeper research is needed on the small and medium enterprise; its structure, behavior, and its diverse issues, as well as the way they face challenges. They may not be large Companies, yet, their structure can be complex (Montoya, 2009). On the other hand, there is a correlation between enterprise-growth and the entrepreneur´s personal features according to Ripolles and Menguzzato (2001). Entrialgo Fernandez y Vazquez (1988) explain that company-owners´ personality features, affect the outcome of their organization. Research on S&MBs is still rare. There is not enough information about their complexity. Some traits of their nature remain unknown (De La Rosa, Montoya and Pomar, 2009). Even the personal-qualities analysis of lasting S&MBs owners, is affected by the lack of research.

This research examines two aspects: the attitudes of an entrepreneur and the socio-demographic characteristics related to small-business owners from two cities in Mexico. We examine different contexts: geographic, environment, finances, etc. One city is located in Southern Mexico, in the State of

Tabasco; and other one in Sonora, in the North part of the country. There are similarities that businesspeople share even when coming from different circumstances. Yet they have managed to stay in the market. So, this may become a reference for small business striving to remain in business in the marketplace. The study was done during the 2008-2010 period.

The work is presented in five sections: the introduction section identifies the problem and research objectives are presented. The second section features the theoretical background on entrepreneur characteristics that have been associated with the permanence of the companies and geographic and economic information of the cities where the study took place. The third section presents the methodological aspects: type of study, variables and indicators, research instrument and statistical methods used to analyze the data generated. The results are presented in the fourth section. Finally in the fifth section, findings according to the purpose of the research are discussed with reference to the literature on the subject. Limitations of the research are also pointed out.

LITERATURE REVIEW

The origin of the term entrepreneur comes from the French word *'entrepreneur'* and dates back to 1775 when Richard Cantillon used it to name the people who assumed risk and responsibility to initiate and complete a project. It was Schumpeter though, through his theory on entrepreneurship, who described the performance of an entrepreneur as a factor of economic development. The businessperson figure must also integrate human-behavior factors. Entrepreneurs who become businesspeople, should be able to handle risk, have negotiating and people skills, and an ability to analyze the environment, an initiative for decision-making; have inner-strength, self-esteem and awareness of his/her capabilities, be responsible, creative and perseverant (Entriago, Fernández y Vázquez, 1998; Villa, 2008). The entrepreneur must also have skills for innovation, be capable for input-management and knowledgeable of marketing methods, as well as new organizations structure (Kets de Vries, 1977; Schumpeter, 1965; Baumol, 1968; quoted by Pereira 2003). According to Davidson (1992), as quoted by Ripollés and Menguzzato (2001), business growth is due, in large part, to a socio-demographic traits of the businessperson; experience and academic background.

Within the studies carried out to identify the features of entrepreneurs, we found some Brazilian research by Raupp and Beuren who analyzed these factors associated with entrepreneurs. The results showed that teamwork-assessment, problem-solving, an objective-based management and initiative are qualities these entrepreneurs most developed. Those developed to a lesser extent were visionary and complementary training. (Raupp and Beuren, 2006).

Ripollés and Menguzzato (2001), carried out a study about the relationship between company growth and entrepreneurial characteristics. The results showed that entrepreneur characteristics associated with business growth are related to higher education and experience in the following areas: the business-line and the direction and creation of companies. Business owners also perform processes in a formal way and involve staff in the work planning. Aira, L. (s.f.), says that among the characteristics of S&MBs (*Small & Medium Businesses*) owners in Argentina, we find experience. Almost 50% of entrepreneurs are children of other business people. They have a high motivation fostered by a desire of becoming their own boss. These people usually have many activities that overflow into operational actions.

According to Pereira´s article: *Reflections on Some Features of the Colombian Entrepreneurial Spirit* (Pereira, 2003), the innovation variable is deeply influenced by the entrepreneur´s creativity. The disadvantage is that this feature is developed on an individual basis and not collectively. At least this achievement is only reflected in the earnings of a single person, and not from a group. Risk-taking is another characteristic of Colombian businesspeople, whom by the diversifying their investments, protect themselves from the changing state of uncertainty their country faces (Pereira, 2003).

Studies conducted in some European Union countries such as Germany, France and Spain, show that attitude-factors have to do with the profile of an entrepreneur in Europe. These factors include: vision of the potential benefits and costs of the company, and at the same time a fuzzy vision of the risks involved. The average European entrepreneur has a high motivation for goal-achievement, self-assessment. The individual also has a favorable image of themself and the capacity to lead in response to short-and-medium-term objectives. Likewise, the individual undertakes risks in the economic sphere (Lanzas, V. Lanzas, F and Lanzas, A. 2009).

The 2010 Annual Report of the Global Entrepreneurship Monitor (GEM) in Spain, shows an approach to entrepreneurship through the most common socio-economic characteristics. The results of this report are summarized here. For example, a businessperson with a consolidated business with more than 42 months in the market, has the following characteristics: they are mostly men; average age: 44 with a medium-high level of education, ranging from secondary to mid-undergraduate school. They have the necessary training to start a business and previous experience as entrepreneurs.

Villahermosa, the Capital City of the State of Tabasco, is located in southern Mexico with 519,873 inhabitants. The predominant climate is warm and humid. Temperatures are high during the months of April, May and June, reaching up to 104º F. Oil activity drives the region's economy. A regional operations center from the national oil company; Petroleos Mexicanos is located in Villahermosa. Trade and services have been the fastest-growing sectors. As a result from this, major supermarket-chain companies have opened both stores in the City and distribution centers in the suburbs of Villahermosa. Such centers serve as suppliers the supermarkets in Southeastern Mexico (Chablé and Aragon, 2009).

Ciudad Obregon is a young and modern city, with just over 80 years of existence. It is the head of the township of Cajeme County, a part of the Yaqui region. The region is a fertile valley in the State of Sonora, northern Mexico. It is a five-hour drive from the U.S. border, on international road n15. Its population reaches up to 409,309 inhabitants, and the temperature fluctuates between 43°F and 73°F in the winter, and 80°F to 118°F in the summer. Its agriculture sector has one of the most advanced water-systems in the country. There exists some other sectors such as fishing, trade, aquaculture and tourism, but agriculture remains as the main economic branch. Likewise, food-processing and manufacturing, stand out in the industrial sector (Conference & Visitor Bureau of Ciudad Obregon, Sonora, Mexico, 2011).

METHODOLOGY

This is a descriptive survey, "Descriptive research seeks to specify properties, characteristics and profiles of individuals, groups, communities, processes, objects or any other phenomenon that is subject of analysis." (Danhke, 1989 quoted by Hernández Fernández and Baptista, 2006, p. 102). It is not an experimental survey because the variables and transactional cannot be manipulated, as the data collection is done in a single time period. The variables used in the study are presented in Table 1

Empirical research was first conducted in southern Mexico, in the city of Villahermosa, Tabasco. A database from Secretaría de Economía (Mexican Economics Ministry) was used as a source of information to define the statistical population under observation. The database was managed through the Business Information System (SIEM) in 2008. A statistical population of 108 small businesses was determined, and through a random sampling, a sample of 64 companies was obtained.

A questionnaire was used to obtain information on the characteristics of entrepreneurs that includes an adaptation of Surdez, Aguilar and Sandoval (2009), and a Likert scale on psychological traits of the entrepreneur (Saboia and Martin, 2006). The objective is to evaluate each indicator of entrepreneurial behavior with five response options: yes, definitively (5) it means that the phrase displays an attitude or

behavior which the businessperson is fully identified with; and definitely not (1), implies that the phrase is an attitude or behavior that does not correspond to his/her characteristics. The other options are probably not (2), undecided (3), and probably (4).

Table 1: Variables and Indicators of Research

VARIABLE	INDICATORS
Socio-demographics	Age Gender Marital Status Level of Education Dedication to the enterprise Business-Line Expertise Entrepenurial-family Background
Entrepreneurial Attitudes and Behavior	Negotiation Skills Creativity Leadership Self-discipline Hard Work Intuition Self-confidence Personal fulfillment desire Risk-taking Appetite

This table features the selected indicators to measure the research variables that allowed characterizing entrepreneurs who participated in the research regarding socio-demographic attributes and attitude attributes and behaviors.

For validity purpose, the questionnaire was submitted to 3 experts (Hernandez, Fernandez and Baptista, 2006 pp. 290-291). The reliability of the Likert scale was measured by Cronbach´s Alpha Coefficient, with a result of 0.8, considered to be acceptable (Hernandez, Fernandez and Baptista, 2006 p. 439). The analysis was performed using descriptive statistics and ANOVA variability analysis, with the support from the Statistics Package for Social Sciences Program (SPSS).

Subsequently, the questionnaire was applied in the north of Mexico to small-Company owners from Ciudad Obregon, Sonora. To identify the statistical population, the database from Secretaría de Economía (Mexican Economics Ministry), with the Business Information System (SIEM) of 2008 was used. A statistical population of 487 small businesses was determined, and through a random sampling, a Sample of 149 companies was obtained.

RESULTS

The data obtained in the survey on the socio-demographic features of entrepreneurs (Table 2), was analyzed through the frequency-distribution. The frequency-analysis shows that in Ciudad Obregon, young entrepreneurs start their businesses at an early age. Some 24% of them are between 18 and 30 years-old. Based on the gender of the interviewees, there is a dominant male participation (90%) in Villahermosa. Although in Ciudad Obregon, the percentage is higher (54% men), the number of women (45%) is not far behind.

In Villahermosa (81%) as well as in Ciudad Obregon (66%), the majority of businesspeople are married. In terms of level of education, there are a few relevant differences, for instance, in Ciudad Obregon there are businesspeople with basic or elementary education (20%). This differs from Villahermosa, where the lowest level reported was High School (9%). However, in both cities, the highest percentage of school level is a bachelor degree (72% in Villahermosa and 34% in Ciudad Obregon).

Table 2: Socio-Demographic Entrepreneur Features

Indicators	**Villahermosa Tabasco, Mexico**	**Ciudad Obregón Sonora, Mexico**
Age	41% (30-44 years old)	24% (18-30 years old)
	59 % (45-69 years old)	37% (31-43 years old)
		36% (44-68 years old)
		3% (No answer)
Gender	90% Male	54% Male
	10 % Female	45% Female
		1% No answer
Marital Status	19% Single	30% Single
	81% Married	66% Married
		4% No answer
Level of Education	9 % Senior	20% Elementary Education
	5 % Community College	20% Senior
	72 % College degree (BC)	10% Community College
	14 % Graduate degree	34% College degree (BC)
		13% Graduate degree
		3% No answer
Place of Origin	45% Tabasco	54% Sonora
	55 % Other States	11% Other States
		39% No answer
Business-line Expertise	19 % No Experience	29 % No Experience
	81 % Had Experience	68 % Had Experience
		3% No answer
Entrepenurial-family Background	42 % No Background	16 % No Background
	58 % Had Background	56 % Had Background
		28 % No answer
Dedication to the enterprise	17 % Partly	24% Partly
	83 % Fully	74% Fully
		2% No answer

This table shows the percentages obtained for each indicator of the socio-demographic characteristics variable of the entrepreneurs in the towns of Obregon, Sonora and Villahermosa Tabasco in Mexico.

In Villahermosa, the majority (55%) are from other states of the country. In Ciudad Obregon the opposite holds as 54 % are native people. It is important to know that in Ciudad Obregon, a large number of entrepreneurs (39%), did not respond to this question.

Concerning previous experience of the entrepreneur in the line of business; in both cities, most businesspeople have previous experience (81% in Villahermosa and 68% in Ciudad Obregon). On family-business background of the respondents, in both cities, the results showed: 58% for Villahermosa and 56% for Ciudad Obregon. It is worth mentioning that in Ciudad Obregon 28% of the sample did not answer this question. Finally, when asked about their dedication to the business, in both cities, the majority declared they are committed full-time to the business (83% Villahermosa, 74% Cd. Obregon).

Data obtained in this research upon entrepreneurial-behavior characteristics of businesspeople (Table 3), were analyzed by means of descriptive statistics, and by comparison of statistical means. Regarding the attitudes and behaviors of the enterprising entrepreneurs of both cities, there is much similarity. The differences in each are minimal, however the indicators of Tabasco are slightly higher, especially regarding differences in the attitude of leadership (0.46). As for attitudes and entrepreneurial-behavior, a close similarity was found in the cities. However, indicators for Tabasco are slightly higher, with 0.46 the highest on the leadership attitude area.

Subsequently, an ANOVA variability analysis was conducted to find statistically significant differences between socio-demographic characteristics, and attitudes and entrepreneurial-behavior. The results are presented in Table 4.

Table 3: Entrepreneurial Attitudes and Behavior Businesspeople Showed

Entrepenurial Attitudes and Behavior	Villahermosa Tabasco, Mexico	Ciudad Obregon Sonora, Mexico
Negotiation Skills	4.61	4.22
Creativity	4.47	4.11
Leadership	4.46	4.00
Self-discipline	4.46	4.24
Hard Work	4.44	4.34
Intuition	4.15	3.80
Self-confidence	4.15	4.01
Personal fulfillment desire	4.06	4.22
Risk-taking Appetite	3.06	2.90

This table shows the average obtained from the answers of employers to the items on a Likert scale of 5 points, for each indicator of the entrepreneurial attitudes and behaviors variable, of entrepreneurs in Ciudad Obregon, Sonora, Tabasco Villahermosa in Mexico.

The ANOVA variability analysis reported that on the businesspeople from Villahermosa, age influences the leadership entrepreneurial-behavior attitudes (0.041), risk-taking appetite (0.025) and self-confidence (0.042). As for the businesspeople from Ciudad Obregon, age only influences the enterprising attitude of leadership (0.047). In both studies, the highest average leadership is found in the age range between 48 and 58 years (4.62 Villahermosa and 4.21 Cd. Obregon). Demographic characteristics such as gender, marital status, level of education, and experience, showed no relation to attitudes.

Table 4: Analysis of Variability

Dimension	Age	N	Mean (average)	Standard Deviation	"F"	Sig. of "F"
Villahermosa, Tabasco, Mexico						
Leadership					2.915	0.041*
	26-36	9	4.56	0.527		
	37-47	20	4.24	0.565		
	48-58	29	4.62	0.376		
	59-69	6	4.29	0.534		
Risk-taking Appetite					3.353	0.025*
	26-36	9	3.11	1.269		
	37-47	20	3.70	1.342		
	48-58	29	2.90	1.496		
	59-69	6	1.67	1.633		
Self-confidence					2.906	0.042*
	26-36	9	3.59	0.760		
	37-47	20	4.07	0.762		
	48-58	29	4.36	0.654		
	59-69	6	4.33	0.699		
Obregon, Sonora, Mexico						
Leadership	Under 26	24	4.177	0 .7479	2.471	0.047*
	26-36	44	3.706	0.8911		
	37 -47	46	4.082	0.7398		
	48-58	24	4.212	0.6332		
	59-69	11	4.023	0.7454		

** P <0.05 This table displays, by cities, the indicators of the Entrepreneurs Attitudes and Behaviors variable that in the analysis of variability reported statistically significant differences between different age ranges defined.*

CONCLUSION AND ANALYSIS

This research helped us to achieve our objective: identifying the similarities (owned by) small-business entrepreneurs who have managed to stay on the market in two areas of Mexico, regarding their socio-demographic characteristics and their entrepreneurial-behavior attitudes. The descriptive analysis through frequency distribution helped determine the following similarities: Degree in a professional level, a result that agrees with the study conducted by Ripoll and Menguzzato (2001), showing that a higher level education is directly related to business growth. Previous experience in the line of business is also important, a finding also mentioned in previous studies (Davidsson,1992 cited by Ripoll and Menguzzato, 2001; Aira, sf, Global Entrepreneurship Monitor, 2010).

Family entrepreneurial background circumstance is identified in the Aira research (s.f), who found that almost 50% of the entrepreneurs are children of other entrepreneurs. In both areas of Mexico male participation prevails, a matching result with the GEM report, 2010. The GEM report showed that from 76 countries that participated, from 1999 to 2009, the majority of businesspeople are men. However in Ciudad Obregon, Sonora the percentage of women in this activity almost equals that of men, a phenomenon that merits further study.

All measured attitudes and entrepreneurial-behaviors in this research, are inherent to businesspeople in both cities. However, some features stand out in one place more than the other. In the case of Villahermosa, there is a dominant display of negotiating skills. This result can be explained if one considers this city stands out as a center of business and management for the oil and gas industry in southeastern Mexico. Creativity was the second feature displayed. This effect that may be fostered by the industrial sector as more building construction has become necessary. Projects like these are undertaken by Engineers and Architects, professions associated with creativity.

In Ciudad Obregon there is a preponderance of hard work and self-discipline, possibly because the economic activity revolves around agriculture and food processing tasks that have always required laborious work. However, it is necessary to further examine these results because there is no empirical evidence of the causes that generated this difference. The variance analysis (ANOVA) reported in the two samples a relationship between age and leadership. This finding is more evident in entrepreneurs during their adulthood. This personal characteristic is considered necessary to achieve a successful entrepreneurship (Arteaga and Lasio, 2009).

Finally, among the similarities found within businesspeople of the two study-areas, it is recommended prospective entrepreneurs should reflect and consider the importance of a college-preparation and prior experience in similar business or activities he or she endevours. Also, current and potential businesspeople should pursue the training necessary on negotiation (Criqui y Matarrasse, 1991), creativity (Hinojosa, 2003), leadership (Maxwell, 2009). At the same time, they should be aware that hard-work and self-discipline are important to develop a business and keep it in good shape.

Although the study contributes primary data on attributes of entrepreneurs who have managed to remain in business, in two cities that belong to regions with different contexts, it is necessary to continue this research towards geographically extensive studies to provide further evidence of the characteristics of successful entrepreneurs.

REFERENCE

Aira, L. (s.f.) Principales características del empresario PyME en Argentina *(Main features of the S&MBs entrepreneur in Argentina)* p.p. 1-2. Excerpt from
www.jvazquezyasociados.com.ar/files/empresariopyme.pdf

Arteaga, M.E., y Lasio, V. (2009) Empresas dinámicas en Ecuador: factores de éxito y competencias de sus fundadores Academia, Revista latinoamericana de administración, *"Dynamic companies in Ecuador: success factors and skills of its founders" - Academy -American Journal of directors.* 42, p.p. 49-67. Excerpt from redalyc.uaemex.mx/pdf/716/71611933002.pdf

Criqui, P., y Matarasse E. (1991) Cómo llegar a ser un maestro de la negociación *(How to master negotiation)* Barcelona España: Ediciones Juan Gárnica S.A.

Chablé, J.J., y Aragón, A. (2009) Análisis estratégico para el desarrollo de la micro, pequeña y mediana empresa de Tabasco. *(Strategic Analysis for the development of micro, small and medium-sized enterprise of Tabasco)* Tabasco, México: Universidad Juárez Autónoma de México.

De la Rosa, A., Montoya, M.T., y Pomar, S. (2009) Análisis organizacional y micro pequeñas y medianas organizaciones: estado actual y perspectivas *(Organizational analysis and micro small and medium organizations: current status and perspectives)* en A. de la Rosa, M.T. Montoya y S. Pomar (coordinadores) "Pequeñas organizaciones: complejidad y diversidad organizacional. Estudio de casos de organizaciones mexicanas" (*Small organizations: organizational complexity and diversity. Case studies of Mexican organizations*) México: Universidad Autónoma Metropolitana-Juan Pablo Editor. --

Entrialgo, M., Fernández, E., y Vázquez, C. (1998) Características psicológicas y proceso: el papel del comportamiento emprendedor en la PyME española, (*Psychological characteristics and process: the role of entrepreneurial behavior in Spanish S&MBs*) Investigaciones Europeas de Dirección y Economía de la Empresa (*European research direction and Business Economics)* 4 (3), p.p. 57-72 Universidad de Oviedo. Excerpt from www.aedem-virtual.com/articulos/iedee/v04/043057.pdf -

Global Entreprenerur Ship, Monitor (2010) Informe Ejecutivo GEM España 2010. (Executive Report, GEM Spain, 2010). Excerpt from www.ie.edu/GEM/img/informes/34.pdf.

Hernández, R., Fernández, C., y Baptista, P. (2006). *Metodología de la Investigación,* (*Research Methodology)* (4ª. ed.), México: McGraw- Hill/Interamericana Editores S.A. de C.V.,

Hinojosa, M. (2003) *Pensamiento creativo libro del maestro, (Creative thinking teacher's book),* México: Editorial Trillas.

Lanzas, V., Lanzas, F., y Lanzas, A. (2009) Propuesta para medir el perfil de los emprendedores en base tecnológica, *Scientia Et Technica*, XV (*Proposal for measuring the profile of the entrepreneurs in technological base, Scientia Et Technica*, XV)(43), Pereira, Colombia. p.p. 267-272. Excerpt from redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=84917310047&iCveNum=0

Maxwell, J.C. (2009) *Las 21 Leyes irrefutables del Liderazgo, (The 21 Irrefutable Laws of Leadership)* Estados Unidos de América: Lidere.

Montoya, M.T. (2009) Organizaciones hechas a la medida: configuración organizacional, mujer e identidad. El caso de una cooperativa pequeña, (*Tailored Organizations: organizational configuration; woman & identity. The case of a small credit Union.)* en A. de la Rosa, M.T. Montoya y S. Pomar (coordinators) *Pequeñas organizaciones: complejidad y diversidad organizacional. Estudio de casos de organizaciones mexicanas,* (*Small organizations: organizational complexity and diversity. Case Study of Mexican organizations)* México: Universidad Autónoma Metropolitana-Juan Pablo Editor.

Oficina de Convenciones y Visitantes de Ciudad Obregón, Sonora México (17 de Septiembre de 2011). Excerpt from www.ocvobregon.com.mx/

Pereira, F. (2003) Reflexión sobre algunas características del espíritu emprendedor colombiano, (*Reflection on some of the features of the Colombian entrepreneurial spirit) /* Economía, gestión y desarrollo *(Economics, Management and Development)*, 1, p.p. 9-26. Excerpt from javerianacali.academia.edu/FernandoPereiraLaverde/Papers/100391/

Raupp, F.M., y Beuren, I.M. (2006) Soporte de las incubadoras Brasileñas para potencialidad las características emprendedoras en las empresas incubadas (Support for potential Brazilian incubators in the entrepreneurial characteristics incubated companies) Revista de administración RAUSP, 41 (4), p.p. 419-430. Excerpt from redalyc.uaemex.mx/src/inicio/ArtPdfRed.jsp?iCve=223417480006&iCveNum=0

Ripollés, M., Y Menguzzato, M. (2001) La importancia del empresario en el crecimiento de las pymes: una aplicación al sector de la cerámica española, (*The importance of the entrepreneur in the growth of S&MBs: an application to the Spanish ceramic sector) Investigaciones europeas de dirección y economía de la empresa*. 7, (1), p 87-98. Excerpt from www.aedem-virtual.com/articulos/iedee/v07/071087.pdf

Saboia, F. N., y Martín (2006). Los Rasgos Psicológicos del Emprendedor y la Continuidad del Proyecto Empresarial: Un Estudio Empírico de Emprendedores Brasileño, (*Psychological Traits of the Entrepreneur and Business Continuity Project: An Empirical Study of Brazilian) Documento de Trabajo: Nuevas Tendencias en Dirección de Empresas.* www.uva.es/empresa. Accessed on September 5, 2008.

Servicio Nacional de Empleo. Indicadores Trimestrales (*National Employment Service. Quarterly Indicators* (2010 Cesus). Excerpt from www.empleo.gob.mx/wb/BANEM/BANE_enoe_trim_f2010

Secretaría de Economía de México, Sistema de Información Empresarial Mexicano (2008) (*Ministry of Economy of Mexico, Mexican Business Information System)* Estadísticas por Tamaño, Estado y Sector. (*Statistics by Size, State and Sector*) Excerpt from www.siem.gob.mx/siem2008/portal/estadisticas/EstadoTamano.asp.

Surdez, E.G., Aguilar, N., y Sandoval, M.C. (2009) "Perfil del empresario de la pequeña empresa comercial", Primer Congreso Internacional en México sobre la MIPyME: El impacto de la investigación académica en el desarrollo de la MIPyME, Pachuca, Hidalgo, México.

Villa, M. (2008) "El espíritu emprendedor, la gran fuerza del progreso", *Cuadernos de pensamiento político*, 18. p.p. 215-232 Fundación para el análisis y los estudios sociales. Excerpt from www.jstor.org/pss/25597125

GRATITUDE

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EMPLOYEES' PERCEPTION ABOUT THE EFFECT OF TRAINING ON PROMOTION: EVIDENCE FROM LEBANON

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ABSTRACT

Through training, employees add significance to their soft skills and to their expertise in the work field, thus working more efficiently and effectively. To achieve the skill or expertise mentioned, an employee needs to attend a training session or more, which can be either his own choice on his own expense, or a training session prearranged by his company. Yet, employees always suspect the affectivity of training. Researchers conducted this research is to study the effect of training on employee's advancement. The researchers use Primary research to conduct this research. The most useful observation found in the research was that the majority of employees agreed that training contribute to salary increase, as most employees were satisfied in their current position and feel loyal towards their company. Training and development should enhance and widen the employees' perspective to enable them identify their role and strengthen themselves to climb up through the organizational ladder.

JEL: M51, M53

KEYWORDS: Training, Promotion, Salary Increase, Development, Satisfaction

INTRODUCTION

In a competing market, every organization needs to have a skilled workforce with the right knowledge to gain competitive edge over its rivals (Jassim, 2007). Having the right people in the right places is the key of success companies seek, and training is the only path for such a success (Wright et al, 1994). In this study, we examine the perception of employees regarding the effect of training specifically on their promotion in their organizations. Companies invest a lot of money on training in order to improve employee's skills at their work, hoping to get a profitable return on investment (Matthews, 2012). The level of interest in training varies between employees. Some see it as a waste of time; others consider it valuable to their career path. Many workers finds training programs relevant to their jobs and a direct reason for promotions, others find it non-relevant and of no use in their progress path.

This research evaluates the effects of training on promotion in different companies in Lebanon from the employees' point of view. Researchers collected data through 200 questionnaires distributed to employees working in 19 different companies covering different sectors in the Lebanese economy. Researchers analyze training effects on promotions, which is generally associated with wage increase and defined as the upward movement from one income group to another. Promotions are important not only from the employer's point of view but also in the perception of the employee. Though the study is in Lebanon, the literature review is mainly from western countries. Here comes the importance of such a study, a similar literature is not available in Lebanon, thus such a research fills a gap in the Lebanese social studies,

especially the perception among Lebanese employees for training as a reason for promotion. The paper will proceed from the introduction, to the Literature review, followed by the objective and the methodology used and its results. The final section summarizes the conclusion, the implications, and the limitation of the study.

LITERATURE REVIEW

After analyzing the information from a multilevel, multidisciplinary, and global perspective, Aguinis and Kraiger (2009) concluded in their study, that training will not only benefit the individual, it will benefit the organizations and the society as whole, and eventually it will help the economy of the country. However, to be able to maximize the benefits to the organization, Aguinis stressed on the need to pay attention to pre-training states of the trainees and not to toss them in any training available. Each employee should have a specific training that suits his/her abilities. Putting the wrong person in the wrong place can be costly. Estimates suggest that having an employee in the wrong position costs up to 6 times the more than that of an employee turnover; this is for an individual contributor. The cost can reach as high as 15 times for a managerial position, and up to 27 times for an executive. Therefore promoting trained employees from within is an adopted procedure by many organizations as a new and more effective way to run a specific position (Smart, 2008). Many researchers have seen that employees who are engaged in a training program will be more committed to the organization and less likely to consider leaving it, feeling that he/she is a necessary part, and that the organization cares about him/her being good enough for the job. Although it is costly to give training to employees, in the end it gives back more, many trainees become ready for promotion thus removing the expenses of recruiting another person from outside (Heras, 2006). Sarah Dinolfo and Julie S. Nugent (2010) discussed mentoring and its impacts, in their research, they emphasized on how training programs could span an entire career. Their study showed how formal training helps employees gain key job competencies, prepare them for expanded job responsibilities and leverage workplace relationships.

Dr. K. Francis Sudhakar, Mr. M. Kameshwara Rao,and Dr. B. Koteswara Rao Naik (November 2011), in their study of employees perception of training, emphasized the importance of training for employees in such a competitive market, where workforce should be well trained to meet the demands of the industry. Besides, they shed the light on the differences in perception employees have about training. Some employees will consider training as part of their career pathway and note its significance for their personal added skills and knowledge, which in return may help them in advancement such as promotions, whereas other employees will take training programs lightly. Informal interviews and unstructured questionnaire were conducted, where employees expressed their views freely about their training programs. The findings were that most of the participants perceive training given to them as meeting their needs, and useful for their own career by offering the chance to develop their skills and knowledge. Very few participants argued that their training does not meet their needs both on organizational and individual level. Moreover majority of employees disagreed on the fact that training has a direct effect on their promotion, according to them, it depends on the individual skills not the training itself.

Lindsey Straka West (August 2010), in her study of impact of training on the frequency of internal promotion, highlighted the relationship between formal training and internal promotions within a company. Her research was to support the importance of investing in employees through training and development as training by most companies is considered an expense to be cut. The hypothesis that the increased hours of training focusing on general skills would positively contribute to promotion rates, produced mixed results after the analysis. Multiple regressions revealed that this hypothesis is not supported for either employee or managers. Satterfield, J.M. & Hughes (2007), concluded in their study that there is a relationship between training and promotion. Training allows employees to be hired from within, since it is important for them to practice and figure out their work. Hiring employees from within can save time, money and improve person-organization relationship rather than hiring from external

workforce. Moreover, Satterfield links training to promotion; the more training an organization's employees have, the better the chance they have to be promoted.

Frazis and Loewenstein (2005) use survey information of the "National Longitudinal Study of Youth and the Employer Opportunity Pilot Project" to know the results of training on promotion. Promotion reports indicate if the promotion employees have obtained is through hierarchal level or through increased responsibilities. Studies that focus on training effects on productivity use industry information or "matched employer–employee information" (Bartel, 2000); this type of literature uses the standard Cobb–Douglas production theory and watch firms over several years. However, most of these studies find outstanding effects on trained workers and on employee's productivity, which decreases with the modulation of human resource management criteria's. Mattijs Lambooij; Andreas Flache; Karin Sanders; Jacques Siegers (October 2007), studied the effects of sponsored training and promotion practices on employees willingness to work overtime. They argued that training and promotions are career-enhancing measures by which companies should invest in, and examined the measure of willingness of employees to work overtime after they are trained and promoted. To test their hypothesis, they conducted experiments in five organizations, analysis showed that employees are more willing to work overtime after they had attended training, but promotion has no direct effect on employee's willingness to work over time.

The study concluded that when an employer invests in an employee, the employee would react with more co-operative manner. Studies find that instruments affect training, however not the outcome variable (Leuven and Oosterbeek, 2004). Second, most information sets are relatively short so that either low variation or training cases can be counted (Dearden et al., 2006). Third, after all the effort that is made to measure training participation, few studies obtain special outcome variables, which does not show much promotions in hierarchy and productivity on the individual level (Bartel, 2000). Another study by Breuer and Kampkötter (2010) uses three years of personnel data from a German multinational company and fixed effects methods. The main conclusion is that training has only a positive effect on many performance-related outputs in the same year that training took place. Krueger and Rouse (1998), examined the effect of workplace training programs on one blue-collar and one white-collar company. They studied one standardized training form, to limit heterogeneity, which is partially governmentally financed. By estimating an ordered model, the authors found that trained workers are much more likely to make job bids and to receive job upgrades in comparison to untrained workers.

RESEARCH OBJECTIVE

The research aims to determine the effects of training on employees' promotion and salary from employees' point of view. The relationship between training and promotions in companies is examined. To study the difference in employees' perceptions towards training and its effect on promotion at different levels in an organization, researchers ask the following question: Do employees perceive training as a direct cause of their promotion? Alternatively, are there other reasons affecting promotions?

METHODOLOGY

A specific questionnaire is constructed to determine what employees think about regarding training for both the career and the personal level. The questionnaire includes 17 questions, in which seven questions use the Likert scale and 10 questions uses the multiple choices form. Only 172 questionnaires were returned back from the 200 distributed in 19 companies for blue and white-collar employees, different gender, age, specialization, and years of experience. Respondents answered several questions to study their perception about training, their opinion about the relation between training and salary increase, how related it is to their current job, their level of loyalty to their organization and how much are they willing to pay themselves for training. Moreover, interviews with some employees are done to get direct results about how they perceive training affects their career and if they would like to be included in a training

program. Data were collected during December 2012. Data derived from questionnaires are analyzed using IBM SPSS. The results of the regression analysis will be shown in a linear form equation:

$$Y = \alpha + \sum_{i=1}^{n} \beta_i x_i \qquad 1$$

α= Constant Coefficient
β_i= Slop of constant variable
X_i= Coefficients of variables affecting Y
Y= Dependent variable

RESULTS AND DISCUSSION

Frequency analysis shows that employees interviewed were fairly distributed between males and females, as shown in the table below, with an age between an age group of 21 – 34 years old. Most employees' annual income level ranged between $ 12,000 and $ 24,000 working at middle management – level in centralized firms with high satisfaction and loyalty levels towards their companies. Most of them saw that training contributes to salary increase especially when training is directly related to their duties. Employees mostly do not reject training opportunities but when they should pay for their training, some reject training. Employees' views about discrimination regarding employee promotion had uncertain results. Most of the respondents work at Lebanese Local Companies and use English language via emails for communication at work.

Table 1: Frequency Results

		Count	Table N %	Mode
Gender	Male	89	51.7%	
	Female	83	48.3%	
Age Group				21-34
Salary				Agree
Training				Yes
Current Position at Company				Middle Level
Annual Income Level				$12,000-$24,000

Table 1 summarizes the frequency analysis results. Gender response was almost equal; most respondents work as middle level managers and earn between $12,000 and $24,000 annually; most of them agree that training increase salary levels and accept training opportunities.

Correlation

Correlation is a relation. It is a set of ordered pairs of observations. Correlation means the co-varying of the variables. "Table 1" shows all independent variables relation to the dependent variable being "Contribution of training on employee promotion/salary." Variables with the highest correlation are with levels 1, 5, and then 10

Table 2: Variables With High Significance Levels of Correlation

Cross-Tabs	Gender	Current position	Training directly to responsibility	Self-pay for training	Satisfied in current position	Promotion discrimination	Annual income
Contribution of training on employee promotion/salary	0.0010***	0.0000***	0.0150*	0.0010***	0.0000**	0.0040**	0.0460**

*Table 2 shows all independent variables with high relation to the dependent variable being "Contribution of training on employee promotion/salary. Variables with the highest correlation are with levels 1, 5, and then 10 having the following marks * → level 1, ** → level 5, and *** → level 10*

The results shows that the correlation between the contributions of training on salary increase in relation to employee's gender had an approximate significance of 0.0010, which means that more males agreed that salary increase is directly related to training than females. In addition, the correlation between employees' current position at the company and the contribution of training on promotion/salary is very significance, where more Mid-level employees agreed that training directly affect their promotion. Similarly, the correlation between the employees training directly related to their job and the contribution of training on employee promotion/salary has a significance of 0.0150 where the majority agreed that their training contributes to their salary increase. Moreover, the correlation between employees pay for their training and the contribution of training on employee promotion/salary has a significance of 0.0010; with 81 of the interviewers who would pay for their training believed that it contributes directly to their promotion. The correlation between employees' satisfaction in their current position and the contribution of training on employee promotion/salary was very significant, where 78 percent of employees were satisfied with their current position at the company, which may explain why they believe that training is directly affected with employee promotion.

Furthermore, the correlation between the contribution of training on employee promotion/salary and the promotion discrimination policy at work has a significance of 0.004. Additionally, the correlation between employees' annual income level and the contribution of training on employee promotion/salary has a significance of 0.0460 When a new variable is entered between "Contribution of training on employee promotion + Training directly related to responsibility" the following results emerge: The correlation between employees' training directly related to their responsibility and the contribution of training on employee promotion/salary with their training directly related to their job had a strong significance of 0.000 where mostly all employees agreed. Moreover, the correlation between the contribution of training on employee promotion/salary with their training directly related to their job and the contribution of training on employee promotion/salary was very significant, where most employees' choose did not decide, and 50 disagreed.

Regression

Regression analysis is conducted to detect the effect of some independent variables over other dependent variables. Regression analysis is conducted to find the variables that affect the dependent variable "salary." A two-step method has been used. First, a stepwise method is used to show the significant variables (predictors), which were X1="Self pay for training," X2="Satisfaction with position," X3="Gender". Then, an Enter method is used to show the explanatory power of those above significant independent variables over the independent variable. "Table 2" shows the results of the three predictors "self-pay for training", "satisfied with position", "gender" on the independent variable "Salary".

Table 3: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
0.4840 a	0.2340	0.2200	1.055	0.2340	17.120	3	168	0.0000

Table 3 shows the results of the three predictors "self-pay for training," "satisfied with position," "gender" on the independent variable "Salary" + the "constant". The results are clarified in the regression equation used below.

The effects of the three independent variables "Self pay for training", "Satisfaction with position, and " Gender" on the dependent variable "Salary increase" , can be shown clearly in the below linear regression formula applied.

$$Y = \alpha + \sum_{i=1}^{n} \beta_i x_i \qquad 2$$

Y= Salary Increase

$$Y = a + bX1(\text{self pay for training}) + cX2(satisfaction\ at\ position) + dX3(gender)$$

$$Y = 0.376 + 0.251X1 + 0.312X2 + 0.668X3$$

t = 1.083 + 3.314 + 4.181 + 4.101
Sig.= 0.280 0.001 0.000 0.000

The conducted analysis has shown an R of 0.484 meaning that about 48.4% is the sum of the coefficients of the independent variables only, being the most influencer factors of all independent variables on the dependent variables. The analysis has shown also an R2 of 0.234, which means that 23.4% of the dependent variable is explained by the three dependent variables. Table 4 below shows the ANOVA, which is the analysis of variables. It shows a brief analysis for both the dependent and independent variables. Significance is very high at 0.0000.

Table 4: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	57.194	3	19.065	17.120	.0000
Residual	187.09	168	1.1140		
Total	244.28	171			

Table 4 shows the analysis for the independent variables "Predictors": (Constant), gender, satisfied with position, self-pay for training and the dependent Variable: Salary. The significance level of the variables is very high at 0.0000

Interpretation of Result

This study was made, to study the effect of training on employee's promotion and salary from employee's point of view. After the study is done and questionnaires are filled, researchers can interpret that, most employees are working at middle level management in centralized companies. However, the study shows that most employees are loyal to their companies and jobs, and the training they got is directly related to their jobs. On the other hand, most employees are certain about the relation between salary increase and training programs. Researcher noticed that, most of the time, employees do not reject training programs, but when it comes to self paying for the program almost half of the employees are not willing to pay for training. The research shows, there is not a total satisfaction at employees' current positions, and most employees are uncertain about discrimination in their companies, which may go back to their fear on their current positions. Most of the employees interviewed work in Lebanese local companies and use English language for communication. This research gains its credibility and reasonability through questionnaires distribution. Questionnaires were distributed equally between males and females between 21 and 34 years old and with an annual income between $12,000 and $24,000.

When making the correlations between the factors, more males agree that salary increase is directly related to training than females. However, a very poor relation exists between loyalty to the company and promotion policy followed. Moreover, more Mid-level managers agree that training directly affects their promotion and the majority agree that their training contributes to their salary increase. When referred to self-pay for training, employees who would pay for their training believed that it does contribute directly to their promotion. What explained the question "why employees believe that training is directly related to employee promotion?" is that these employees are satisfied with their current positions at their

companies. Because of the fear employees have regarding their current positions, they had a neutral answer concerning discrimination in their companies. An average significance was noticed when relating discrimination with promotion factors. Males agree and females disagree that there is a relation between employee's gender and their promotion. However, employees with annual income between $12,000 and $24,000 agree that there is a relation between training and their promotion and that employee training is directly related to more responsibility and the contribution of training on employee promotion.

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS FOR FURTHER RESEARCH

The objective of the research was to study the effects of training on employees' promotion and salary from employees' point of view at different levels in an organization. In this research, a specially designed questionnaire was distributed to a number of companies to study the effect of training on employees' promotion, from employees' point of view. This questionnaire addressed issues such as taking and rejecting training opportunities, the willingness of employees to pay for their own training, the relation between training and salary increase and the relation between training and promotion. Researchers found that the opportunities for training were barely rejected, but when it comes the paying for own training, almost 50% of the opportunities were rejected. In addition, positive relations were established between training and both salary increase and promotion, as most of the employees believed that training is affecting both in a positive manner. Overall, the results are consistent with that training has positive impact on employees' careers, which confirms the findings of earlier studies. As for promotion, it has been seen that it is directly affected by training for the majority of employees. At the end, three main variables had the great impact on salary increase and promotion which are "Self pay for training," "Satisfaction with position," and "Gender."

The research, though achieved it objective, it faced some limitations. It is often difficult to gather accurate data and reliable data due to the differences in size of organizations employees are valued in, the difficulty of gaining permissions, and limited time required to gather the metrics. Questionnaires were distributed across the Lebanese market amongst 19 different companies. There were 172 questionnaires distributed, most of them were filled by young employees whose ages range between 21 – 34 years old. Moreover, the study was conducted in a time limit of a 4 months period. Finally yet importantly, only few companies in Lebanon apply training to their employees as they consider it high cost to the company.

For such an important study based on the effects of training on employee promotion, researchers recommend further studies to examine more employees on an international scale. Filling more than 5,000 questionnaires would have a broad scale, which will increase the effectiveness and accuracy of the study. Moreover, there should be a fair distribution of questionnaires between different ages, gender, positions and management levels with sufficient time for the research. Such a research needs governmental aid for it has the prospective of raising productivity among employees, hence on the entire economy.

REFERENCES

Aguinis H, & Kraiger, K. (2009) "Benefits of training and development for individuals and teams, organizations and society". Annual Review Psychology, 60, 451-474.

Bartel, A. P. (2000) "Measuring the Employer's Return on Investments in Training: Evidence from Literature". Industrial Relations 39(3), 502-524.

Breuer, K., and Kampkötter, P. (2010) "The effects of intra-firm training on earnings and job performance- evidence from a large German company". Paper presented at EALE/SOLE Meeting 2010.

Dearden, L., Reed, H., Van Reenen, J., (2006) "The Impact of Training on Productivity and Wages: Evidence from British Panel Data". Oxford Bulletin of Economics and Statistics 68(4), 397-421.

Frazis, H., and Loewenstein, M. (2005) "Reexamining the returns to training: Functional form, magnitude, and interpretation". Journal of Human Resources 40(2), 453-476.

Jassim, R.K., (2001) "Competitive advantage through the employees: A practical guide", Arab Second Conference in Management, Cairo Egypt 6-8 Nov. pp 387-413.

K. Francis Sudhakar, Mr. M. Kameshwara Rao, Dr. B. Koteswara Rao Naik, (2011) "Employees perception about training and development". International Journal of Research in Economics & Social Sciences, November 2011, 35-36.

Krueger, A., and Rouse, C. (1998) "The Effect of Workplace Education on Earnings, Turnover, and Job Performance". Journal of Labor Economics 16(1), 61-94.

Lambooij, Mattijs, Flache, Andreas, Sanders, Karin, and Siegers, Jacques (2007) "Encouraging employees to cooperate: the effects of sponsored training and promotion practices on employees' willingness to work overtime". The International Journal of Human Resource Management, 18:10, 1748 — 1767.

Leuven, E. (2004) "A Review of the Wage Returns to Private Sector Training". Paper presented at the EC_OECD Seminar in Human Capital and Labour Market Performance: Evidence and Policy Challenges. Brussels

Matthews C., (2012) "Future of Retail: Companies That Profit By Investing in Employees", Time Business and Money, June 18, 2012
http://business.time.com/2012/06/18/future-of-retail-companies-that-profit-by-investing-in-employees/#ixzz2P8JQzg9u

Sarah Dinolfo and Julie S. Nugent (2010) "Making mentoring work". Nation Wide catalyst Company, 3 pp. http://www.catalyst.org/system/files/Making_Mentoring_Work.pdf

Satterfield, J.M. & Hughes, E. (2007) "Emotion skills training for medical students: a systematic review". Medical Education, 41(10), 935-941.

Smart, Brad, (2008) "The high cost of mis-hires: Five steps to better hiring". Paper 360, January 15, 2008, from *www.smarttopgrading.com*.

West, Lindsey Straka, (2010) "The impact of training on the frequency of internal promotions of employees and managers." Doctor of Philosophy (Industrial- Organizational Psychology), August 2010, 81 pp., 13 tables, references, 121 titles.

Wright, P., McMaham, G. and McWilliams, A., (1994) "Human resources and sustained competitive advantage: a resource-based perspective" Int. J. of HRM, Vol.5, No 2, pp 301-326.

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PERFORMANCE ANALYSIS OF BANKS HEADQUARTERED IN HOLLYWOOD VERSUS SILICON VALLEY

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ABSTRACT

In this study we examine the performance of banks headquartered in Hollywood and banks headquartered in Silicon Valley in the period - first quarter 2008 until second quarter 2012, which includes the period of the Great Recession - December 2007 to June 2009. We find that during the financial crisis both Silicon Valley and Hollywood banks suffered but Silicon Valley banks much less than Hollywood banks. After the recession, banks in both regions improved performance again Silicon Valley banks recovering faster. We also find that the level of deposits, the leverage ratio and total loan charge-offs consistently play a role in the performance of banks.

JEL: G20, G21

KEYWORDSs: Bank Performance, Hollywood Banks, Silicon Valley Banks, Financial Crisis

INTRODUCTION

Recently, Boudreau (2012) reported on the forthcoming merger between Lucasfilm and Disney and its effects on the apparent difference in business attitude and hostility between Silicon Valley and Hollywood. Boudreau (2012) emphasizes that the conflict between Silicon Valley and Hollywood is mainly due to the difference in business model used. Historically Silicon Valley has been driven by the "disruptive technology" entrepreneurship spirit of internet video and audio file sharing for free which is in direct conflict with the old established business model of Hollywood. Boudreau (2012) suggests that with the acquisition of Lucasfilm by Disney, which is one of the major Hollywood players, the differences between Hollywood and Silicon Valley will disappear and both regions will get more and more integrated.

In this study we address the question – is Silicon Valley as a region that much different from Hollywood as a region? We focus on one particular finance related aspect in those two regions - bank performance. We examine the performance of banks headquartered in Hollywood and banks headquartered in Silicon Valley during the recent recession.

We focus only on Hollywood and Silicon Valley because outside of those two regions California is the same – rural and agricultural. Since the nature of the regions outside of Hollywood and Silicon Valley is the same they would not contribute to the analysis on the differences between the two regions, if they exist. The National Bureau of Economic Research (NBER) identifies December 2007 to June 2009 as the period of the most recent recession.

We find that Silicon Valley banks have a consistently higher ROE throughout the examined period which includes two periods during and after the recession relative to Hollywood banks. Hollywood banks on the other hand have higher ROA only in the last two quarters of the examined period the rest of the time Silicon Valley banks consistently have higher ROA. We also find that the level of deposits, the leverage ratio and total loan charge-offs consistently play a role in the performance of banks.

The paper is organized as follows: in the next section we examine the existing relevant literature. Then, we describe the data and methodology used in the study, followed by a results section discussing our findings. Concluding remarks are offered at the end of the paper.

LITERATURE REVIEW

Most studies examine bank performance around the time of the implementation of the Riegel-Neal Interstate Banking and Branching Efficiency Act of 1994, which became effective in 1997. This act allows for expansion of bank operations across state lines and adds to bank performance through diversification. This naturally has had an influence on bank performance. Levonian (1994) studies the benefits of diversification in the Twelfth Federal Reserve District. His correlation analysis of bank returns in the district suggests that there has been a potential for diversification.

Rose (1996) study the accelerated diversification of banks due to the passage of the Riegel-Neal Interstate Banking and Branching Efficiency Act of 1994. Contrary to the anticipated benefits of diversification the author finds increased risk levels of firms engaged in interstate banking. Rose suggests that if a bank operates in three or more Federal Reserve Bank districts it would experience lower insolvency probability and lower volatility of return on equity (ROE). Rose also uses correlation analysis and documents lowest correlation ratios among small and medium sized banks, which suggests that they would benefit the most from the passage of the Riegel-Neal Act. He also finds that larger banks have high correlation coefficients which he interprets as indicating lower diversification benefits if combined. In contrast to Rose (1996) findings Shiers (2002) finds that economic and geographic diversification reduce bank risk. Naturally, the Shiers study is based on a later period sample.

Zou, Miller and Malamud (2011) find evidence in support of the Rose (1996) findings that small banks experience decrease in risk levels due to interstate diversification. Zou, Miller and Malamud document that medium-sized banks experience increase in risk levels due to the passage of the Riegel-Neal Act. They document mixed results for large banks. They also examine bank performance and document that small and medium sized banks' performance is related to state level macro variables. Also, that large bank performance is not related to state level macro variables.

Clark-Neely and Wheelock (1997) examine the factors affecting bank performance across states. They find that bank earnings are consistently related to the local intra-state business climate and to a lesser extent to the national economy and inter-state business climate.

Other studies examine bank performance internationally, such as Megginson, Nash and Van Randenborgh (1994), Tadesse (2002), Barth, et al. (2003), Williams (2003), Bonin, Hasan and (2005), Beccalli (2007) and Altunbaş and Marqués (2008).

The Federal Reserve Bank of San Francisco provides studies of bank performance in the state of California but not in the micro regions of California. This paper attempts to fill this void in the literature. Zimmerman (1996) provides a study on the performance of California community banks. He finds that community banks in California underperform relative to large state banks due to the local market focus – such as real estate and building conditions. Therefore, to the best of our knowledge this is the first study to examine bank performance during the recent crisis in Silicon Valley and Hollywood as sub-regions of California.

DATA AND METHODOLOGY

The data used in this study are quarterly and are obtained from the Federal Deposit Insurance Corporation's website, http://www2.fdic.gov/idasp/main.asp, for the period first quarter 2008 until second

quarter 2012. The Federal Deposit Insurance Corporation collects detailed accounting data on all banking institutions in the US. The S&P/Case-Shiller US National Index is from www.standardandpoors.com and the vacancy rate in California is from www.census.gov. The S&P/Case-Shiller US National Index tracks residential real estate prices in the United States. There are 48 unique banks and 706 bank-quarter observations in the Hollywood sample. There are 39 unique banks and 625 bank-quarter observations in the Silicon Valley sample.

Similar to Goldberg and Rai (1996), Berger, et al. (2000), Cebenoyan and Strahan (2004), Hernando and Nieto (2007) and Hassan Al-Tamimi (2010), we use return on equity (ROE) and return on total assets (ROA) as measures of bank performance. We consider the following cities as representing Hollywood - Los Angeles, Burbank, Beverly Hills, West Hollywood, Culver City and Santa Monica. We consider the following cities as representing Silicon Valley – Atherton, Berkeley, Campbell, Cupertino, Emeryville, Hayward, Hillsborough, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Mountain View, Morgan Hill, Palo Alto, Pleasanton, San Carlos, San Jose, Santa Clara, San Leandro, San Rafael, San Ramon, Saratoga, Sunnyvale, East Palo Alto, Foster City, Fremont, Menlo Park, Monterey, Newark, Portola Valley, Redwood City, Santa Cruz, Scotts Valley, South San Francisco and Woodside. Surprisingly San Francisco is not considered part of Silicon Valley.

We use univariate and multivariate analyses to examine the performance of Hollywood and Silicon Valley banks. We use multivariate analysis to examine what are possible factors for the difference of bank performance in Hollywood and Silicon Valley. The multivariate analysis model that we use in this study is as follows:

$$P_{i,q} = \beta_0 + \beta_1 LDEP_q + \beta_2 OFFDOM_q + \beta_3 SMALLBANK_q + \beta_4 MEDIUMBANK_q + \quad (1)$$
$$+ \beta_5 LARGEBANK_q + \beta_6 INSSAVE_q + \beta_7 DR_q + \beta_8 CRISIS_q + \beta_9 CS\_US_q + \beta_{10} CA\_VR_q ,$$
$$+ \beta_{11} DRLNLS_q + \beta_{12} DRRE_q + \beta_{13} DRCI_q + \beta_{14} DRCRCD_q + \beta_{15} DRAUTO_q + \varepsilon_q$$

where $P_{i,q}$ is the performance measure, ROE or ROA for bank i in quarter q, $ldep_q$ is natural logarithm of total bank deposits, $offdom_q$ is the number of domestic offices, $smallbanks_q$ have assets up to $100 million, $mediumbanks_q$ have assets between $300 million and $1 billion, $largebanks_q$ have assets exceeding $15 billion, $inssave_q$ is insured savings institution, dr_q is debt ratio, crisis is a dummy variable with value of one during the period of the recession First Quarter 2008 to Second Quarter 2009 and zero

Figure 1: Temporal Behavior of ROE and ROA

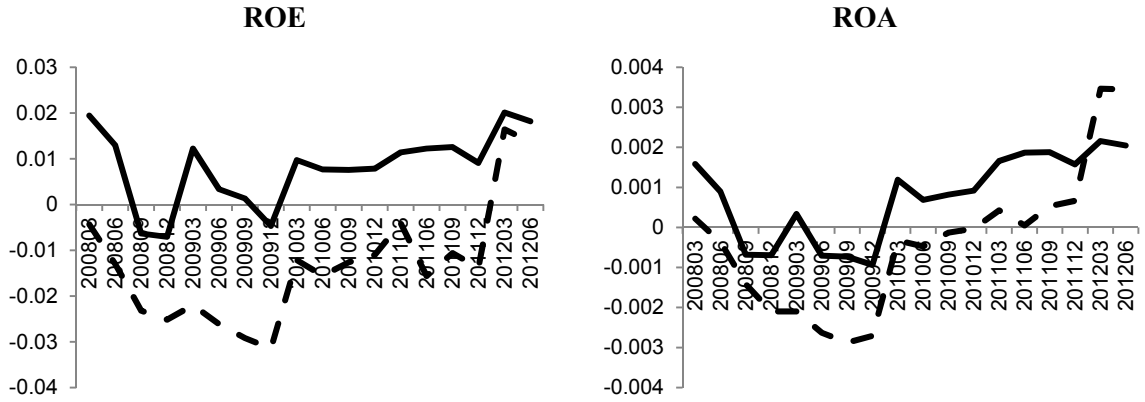

Figure 1 presents the quarterly temporal behavior of performance measures – ROE and ROA. Note: Solid line – Silicon Valley Banks, Dashed line Hollywood Banks.

otherwise, Cs_us_q is the rate of change of the Case-Shiller US Index and ca_vr_q is the vacancy rate in California in quarter q. Drlnls is total bank charge-offs, drre is loan secured by real estate charge-offs, drci is commercial loan charge-offs, drcrcd is credit card loan charge-offs, drauto is auto loan charge-offs and ε_q is the error term.

RESULTS

Figure 1 displays the temporal behavior of ROE and ROA of Silicon Valley and Hollywood banks. Silicon Valley banks have a higher ROE both during and after the recession than Hollywood banks. Hollywood banks exhibit higher levels of ROA only in the last two quarters of the examined period.

Table 1 provides descriptive statistics of the performance measures, ROE and ROA, and of the additional variables used in the analysis. The table clearly indicates higher levels of ROE and ROA for Silicon Valley banks. The table also shows that Silicon Valley banks on average have higher levels of deposits than Hollywood banks.

Table 1: Descriptive Statistics

Panel A: During the Recession, First Quarter 2008 until Second Quarter 2009										
	Silicon Valley Banks					**Hollywood Banks**				
	N	**Mean**	**Std Dev**	**Min**	**Max**	**N**	**Mean**	**Std Dev**	**Min**	**Max**
dep (‘000)	221	1,797	7,131	1	56,020	251	1,274	2,373	0.501	14,856
offdom	221	10.42	23.56	1	132	251	11.78	16.93	1	68
dr	221	0.87	0.09	0.08	0.99	245	0.83	0.19	0.06	0.98
asset (‘000)	221	3,201	14,227	21	102,826	251	1,770	3,175	22,887	17,330
eq (‘000)	221	709	3,770	2	23,657	245	213	367	4	1,711
ni	221	47,594	338,586	-245,912	2,901,718	245	-3,904	45,748	-395,853	163,363
roa	221	0	0.01	-0.04	0.02	245	0	0.01	-0.0454	0.02485
roe	221	0.01	0.06	-0.53	0.12	245	-0.02	0.08	-0.65	0.050375
drlnls	221	64,519	398,180	0	3,766,597	245	11,429	34,566	0	369,264
drre	221	665	2,377	0	19,699	245	8,841	32,901	0	367,325
drci	221	8,391	48,451	0	439,761	245	2,396	5,612	-4	44,198
drcrcd	221	51,834	345,295	0	3,288,971	245	12	53	0	402
drauto	0	0	0	0	0	0	0	0	0	0
Panel B: After the Recession, Third Quarter 2009 until Second Quarter 2012										
	Silicon Valley Banks					**Hollywood Banks**				
	N	**Mean**	**Std Dev**	**Min**	**Max**	**N**	**Mean**	**Std Dev**	**Min**	**Max**
dep (‘000)	404	2,260	7,809	0	51,549	455	1,448	3,250	0	21,222
offdom	404	10.92	26.09	1	131	455	11.6	18.36	1	87
dr	404	0.87	0.09	0.04	0.97	443	0.83	0.17	0.007683	0.98
asset (‘000)	404	4,694	20,558	25	146,310	455	1,871	3,892	39	24,418
eq (‘000)	404	828	4,144	4	27,940	443	265	481	0.732	2,348
ni	404	49,894	335,459	-426,217	3,947,252	443	4,515	34,389	-137,993	201,915
roa	404	0	0	-0.02	0.02	443	0	0.01	-0.03165	0.03
roe	404	0.01	0.03	-0.2	0.08	443	-0.01	0.06	-0.39055	0.2
drlnls	404	184,159	1,255,795	0	15,000,577	443	15,297	34,423	0	289,440
drre	404	1,576	4,477	0	40,310	443	10,971	26,703	0	287,729
drci	404	15,447	104,290	0	1,053,744	443	3,956	10,115	-4	99,985
drcrcd	404	164,218	1,149,204	0	13,863,783	443	16	73	0	657
drauto	193	469.26	2221.23	0	16,943	222	11.26	53.29	0	496

Table 1 provides descriptive statistics of the performance measures, ROE and ROA, and of the additional variables used in the analysis. Dep is total bank deposits ($), offdom is the number of domestic offices. Dr is debt ratio (%). Assets is total assets ($), eq is total shareholders’ equity ($), ni is net income ($), roa is return on assets (%), roe is return on equity (%). Drlnls is total bank charge-offs, drre is loan secured by real estate charge-offs, drci is commercial loan charge-offs, drcrcd is credit card loan charge-offs, drauto is auto loan charge-offs. Descriptive statistics are over the period first quarter of 2008 until second quarter of 2009.

Silicon Valley banks have an average level of deposits during the recession of $1,797,175 whereas Hollywood banks average $1,274,259 even though Hollywood banks have a higher number of domestic offices. After the recession Silicon Valley banks are still bigger with $2,260,410 in deposits whereas Hollywood banks have $1,448,456 in deposits. Silicon Valley banks also have higher net income than Hollywood banks during and after the recession. Silicon Valley banks have positive net income during and after the recession of $47,594 and $49,893, respectively. Whereas, Hollywood banks suffer losses during the recession of $-3,904 but recover after the recession to average net income of $4,514.

Some parameters that indicate that Hollywood banks perform better than Silicon Valley banks are leverage, total loan charge-offs, commercial and credit card loans. Hollywood banks have an average debt ratio of 83%, whereas Silicon Valley banks have a higher debt ratio of 87%. During the recession Silicon Valley banks have average total loan charge-offs of $64,519.34 and Hollywood banks have $11,428.67. After the recession, Silicon Valley banks still have higher levels of loan charge-offs of $184,158.9 and Hollywood banks of $15,297.16.

A more detailed analysis of the total loan charge-off components reveals that during the recession Silicon Valley banks have written-off less real estate loans, $664.91, than Hollywood banks, $8,840.94, but more commercial and credit card loans, $8,390.81 and $51,834.03, respectively. Hollywood banks have written-off during the recession only $5,611.88 and $53.1383, respectively. After the recession the loan write-off pattern of higher real estate write-offs for Hollywood banks and higher commercial and credit card loan write-offs for Silicon Valley banks remains.

Table 2: Independent Variables Correlation Table

	ldep	off dom	small bank	medi bank	large bank	ins save	dr	hw	cs_us	drlnls	drre	drci	dr crcd
off dom	0.48	1											
small bank	-0.38	-0.17	1										
medium bank	-0.32	-0.27	-0.27	1									
large bank	0.43	0.19	-0.07	-0.13	1								
ins save	-0.06	-0.06	-0.07	0.22	-0.05	1							
dr	0.57	0.10	-0.07	-0.01	0.00	-0.01	1						
hw	0.03	0.02	-0.15	-0.16	-0.04	-0.05	-0.13	1					
cs_us	0.02	0.01	-0.04	0.03	0.01	0.00	0.01	0.00	1				
drlnls	0.26	-0.02	-0.04	-0.07	0.50	-0.02	-0.04	-0.09	0.01	1			
drre	0.33	0.30	-0.11	-0.18	0.08	0.10	0.09	0.21	0.02	0.01	1		
drci	0.29	0.00	-0.05	-0.09	0.51	-0.04	-0.03	-0.08	0.02	0.95	0.03	1	
dr crcd	0.24	-0.03	-0.04	-0.06	0.49	-0.03	-0.04	-0.09	0.01	1.00	-0.02	0.93	1
dr auto	0.13	0.17	0.05	0.00	-0.03	-0.04	-0.38	-0.15	-0.03	-0.01	0.00	-0.01	-0.02

Table 2 reports the correlation coefficients among the independent variables used in the analysis. ldep is natural logarithm of total bank deposits and offdom is the number of domestic offices, dr is debt ratio. Small banks have assets up to $100 million, medium banks have assets between $300 million and $1 billion, and large banks have assets exceeding $15 billion. Inssave is insured savings institution. Hw is a dummy variable with value of one for Hollywood Banks and zero otherwise. Cs_us is the rate of change of the Case-Shiller US Index. Drlnls is total bank charge-offs, drre is loan secured by real estate charge-offs, drci is commercial loan charge-offs, drcrcd is credit card loan charge-offs, drauto is auto loan charge-offs.

Naturally, one might argue that the higher levels of loan charge-offs by Silicon Valley banks might be interpreted as prudent banking, whereas the fact that Hollywood banks have lower levels of charge-offs might be interpreted as not as prudent banking. One might argue that it is better for a business to absorb losses once they have realized that they have made a mistake and not to wait too long to acknowledge that a mistake has been made. Maybe this is why Silicon Valley banks on average have better performance than Hollywood banks as presented in Figure 1.

The univariate analysis is informative but does not allow us to make inference on the factors causing the different levels of performance and does not allow for interaction of the possible factors influencing bank performance. That is why we also perform multivariate analysis. Before we do this though, we examine the correlation among the variables to identify potential multicollinearity issues which might weaken the results and conclusions of the multivariate analysis.

Table 2 reports correlation coefficients among the independent variables. The table shows that potential problems might exist if total charge-offs are combined with commercial and credit card charge-offs due to the correlation coefficients of above 0.9. Therefore, in the analysis that follows we use different model specifications to allow for the potential multicollinearity issues and to check for stability in the results.

Table 3 presents multivariate regression results based on equation 1. Panel A shows the level of deposits, leverage ratio and total loan charge-offs consistently play a role in bank performance. The larger the level of deposits the higher the bank performance. The higher the debt ratio and loan charge-offs the lower the bank performance. The results in Panel B indicate the level of deposits, the leverage ratio for Hollywood banks only and total loan charge-off components consistently play a role in bank performance.

Table 3: Regression Results

Panel A: Total Charge Offs								
	ROE				**ROA**			
	SV		**HW**		**SV**		**HW**	
	coeff	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**	**Coeff**	**p-value**
Intercept	-0.0249	0.6605	0.2316**	0.0179	0.0071	0.1703	0.0084	0.3011
ldep	0.0155***	<.0001	0.0161**	0.0105	0.0017***	<.0001	0.0017***	0.0013
offdom	0.0004***	0.0002	0.0004	0.2132	0.0001***	0.0062	0.0001	0.2052
smallbank	0.0037	0.7084	-0.0719***	0.0002	-0.0001	0.9073	-0.0065***	<.0001
mediumbank	0.0169***	0.0098	-0.0002	0.9825	0.0012**	0.0376	-0.0001	0.9495
largebank	-0.0090	0.5978	0.0050	0.8062	0.0002	0.8728	-0.0003	0.8417
inssave	-0.0118	0.1673	0.0056	0.6842	-0.0014*	0.0798	0.0002	0.8449
dr	-0.1359***	0.0004	-0.3771***	<.0001	-0.0241***	<.0001	-0.0195***	0.0001
crisis	-0.0039	0.4117	-0.0152	0.0356	-0.0007	0.1311	-0.0018***	0.0022
cs_us	0.0286	0.5975	0.0662	0.4157	-0.0006	0.8981	0.0067	0.3173
ca_vr	-0.2354	0.2905	-0.2663	0.4300	-0.0337*	0.0951	-0.0529	0.0587
ldrlnls	-0.0058***	<.0001	-0.0146***	<.0001	-0.0007***	<.0001	-0.0014***	<.0001
Adj R-sq		0.1623		0.2775		0.2348		0.3043
N		502		494		502		494
Panel B: Charge-Off Components								
	ROE				**ROA**			
	SV		**HW**		**SV**		**HW**	
	coeff	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**
Intercept	-0.1298***	0.0936	0.7846***	<.0001	-0.0152*	0.0726	0.0382***	0.0013
ldep	0.0191***	<.0001	0.0159**	0.0350	0.0019***	<.0001	0.0019***	0.0018
offdom	0.0003***	0.0001	0.0007*	0.0671	0.0001**	0.0318	0.0001	0.1460
smallbank	-0.0144	0.1581	-0.1250***	<.0001	-0.0019*	0.0932	-0.0091***	<.0001
mediumbank	0.0048	0.3709	-0.0033	0.8175	0.0003	0.6574	-0.0002	0.8963
largebank	-0.0148	0.4243	0.0049	0.8102	-0.0029	0.1548	-0.0004	0.8058
inssave			0.0303*	0.0932			0.0023	0.1278
dr	-0.0444	0.5498	-1.0358***	<.0001	0.0003	0.9732	-0.0595***	<.0001
crisis	0.0001	0.9748	-0.0150	0.1029	-0.0004	0.4492	-0.0017	0.0209
cs_us	0.0127	0.7882	0.0299	0.7462	-0.0006	0.9096	0.0046	0.5481
ca_vr	-0.1244	0.5181	0.0979	0.8066	-0.0359*	0.0883	-0.0337	0.3049
ldrre	-0.0048***	0.0001	-0.0156***	<.0001	-0.0005***	0.0001	-0.0013***	<.0001
ldrci	-0.0064***	<.0001	0.0001	0.9591	-0.0007***	<.0001	-0.0002	0.3532
Adj. R-sq		0.4688		0.4363		0.3965		0.4017
N		254		362		254		362

Table 3 presents multivariate analysis results based on regression equation (1). Ldep *is natural logarithm of total bank deposits and offdom is the number of domestic offices, dr is debt ratio. Small banks have assets up to $100 million, medium banks have assets between $300 million and $1 billion, and large banks have assets exceeding $15 billion. INSSAVE is insured savings institution. Dr is the debt ratio and crisis is a dummy variable with one representing the recession and zero otherwise. Cs_us is the rate of change of the Case-Shiller US Index and ca_vr is the vacancy rate in California. Ldrlnls is the log of total bank charge-offs, ldrre is the log of loan secured by real estate charge-offs, ldrci is the log of commercial loan charge-offs. Significant difference from zero at the 10%, 5% and 1% level is denoted with *, ** and ***, respectively.*

Analysis based on the combined samples of Silicon Valley and Hollywood banks and loan charge-off components indicates that Hollywood banks consistently underperform Silicon Valley banks and that small banks have lower levels of performance and the higher the level of deposits the higher the performance of banks. These results are presented in Table 4. Debt ratios again are significantly negatively related to bank performance and so are total loan charge-offs and real estate and commercial loan charge-offs.

Table 4: Regression Results – Combined Dataset and Detailed Loan Charge-Offs

	ROE		ROA		ROE		ROA	
	coeff	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**
Intercept	0.1181**	0.0219	0.0094**	0.0312	0.6455***	<.0001	0.0330***	<.0001
ldep	0.0170***	<.0001	0.0018***	<.0001	0.0162***	<.0001	0.0018***	<.0001
offdom	0.0004***	0.0002	0.0000**	0.0318	0.0005***	<.0001	0.0000***	0.0005
smallbank	-0.0262***	0.0051	-0.0026***	0.0013	-0.0752***	<.0001	-0.0059***	<.0001
mediumbank	0.0052	0.3833	0.0003	0.4939	-0.0042	0.5782	-0.0003	0.6496
largebank	-0.0015	0.9015	0.0005	0.6091	0.0078	0.5803	-0.0001	0.9192
inssave	-0.0125	0.1044	-0.0009	0.1635	0.0190	0.2060	0.0014	0.2523
dr	-0.2680***	<.0001	-0.0242***	<.0001	-0.8375***	<.0001	-0.0492***	<.0001
crisis	-0.0110**	0.0123	-0.0013***	0.0005	-0.0126**	0.0286	-0.0014***	0.0051
cs_us	0.0352	0.4788	0.0020	0.6432	0.0026	0.9662	0.0012	0.8142
ca_vr	-0.2714	0.1836	-0.0467***	0.0072	-0.0195	0.9386	-0.0362*	0.0891
ldrlnls	-0.0107***	<.0001	-0.0010***	<.0001				
ldrre					-0.0122***	<.0001	-0.0010***	<.0001
ldrci					-0.0025*	0.0932	-0.0004***	0.0013
HW	-0.0288***	<.0001	-0.0027***	<.0001	-0.0408***	<.0001	-0.0028***	<.0001
Adj R-sq		0.2557		0.3001		0.4276		0.4056
N		996		996		616		616

*Table 4 presents regression results based on combined dataset and detailed loan charge-offs.ldep is natural logarithm of total bank deposits and offdom is the number of domestic offices, dr is debt ratio. Small banks have assets up to $100 million, medium banks have assets between $300 million and $1 billion, and large banks have assets exceeding $15 billion. INSSAVE is insured savings institution. Dr is the debt ratio and crisis is a dummy variable with one representing the recession and zero otherwise. Cs_us is the rate of change of the Case-Shiller US Index and ca_vr is the vacancy rate in California. Ldrlnls is the log of total bank charge-offs, ldrre is the log of loan secured by real estate charge-offs, ldrci is the log of commercial loan charge-offs. HW is a dummy variable with value of one for banks headquartered in Hollywood and zero for Silicon Valley banks. Significant difference from zero at the 10%, 5% and 1% level is denoted with *, ** and ***, respectively.*

As robustness tests we repeat the regression analysis with the loan charge-offs scaled by the total amount of bank deposits. The regression results by region are presented in Table 5. Panel A presents results for total scaled loan charge-offs, whereas Panel B presents results for the components of the scaled total charge-offs – scaled real estate charge-offs and scaled commercial loan charge-offs. The results are similar to the non-scaled parameters.

Table 6 reports regression results for the combined data sets of both regions but with parameters scaled by bank deposits. The results are similar to the non-scaled factor regressions.

CONCLUDING COMMENTS

In this study we examine the performance of banks headquartered in Hollywood and banks headquartered in Silicon Valley during the recent recession. We use return on equity (ROE) and return on total assets (ROA) as measures of bank performance to compare the two regions in California. We use univariate and multivariate analyses to examine the performance of banks in these regions in the period - first quarter 2008 until second quarter 2012, which includes the period of the Great Recession - December 2007 to June 2009.

Table 5: Regression Results

Panel A: Total Charge-Offs, Scaled by Total Deposits								
	ROE				**ROA**			
	SV		**HW**		**SV**		**HW**	
	coeff	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**
Intercept	-0.0342	0.4077	-0.0041	0.8478	-0.013***	0.0031	0.0307***	<.0001
ldep	0.0081***	0.0077	0.00936***	<.0001	0.00108***	0.0009	-0.0021***	<.0001
offdom	0.0004***	0.0001	-0.0002	0.1983	0.0001	0.2137	0.0001***	<.0001
smallbank	0.00048	0.9534	-0.0355***	<.0001	-0.001	0.2353	-0.0109***	<.0001
mediumbank	0.0167***	0.0034	-0.0057	0.2718	0.00165***	0.0065	-0.0054***	<.0001
largebank	0.0082	0.6018	-0.0039	0.7925	0.00171	0.3073	-0.0013	0.4248
inssave	-0.0035	0.5822	0.00644	0.4001	0.00038	0.5756	-0.0003	0.7136
dr	-0.0531**	0.0304	-0.0949***	<.0001	0.00359	0.1669	0.00376	0.1248
crisis	-0.0032	0.4180	-0.0211***	<.0001	-0.0009**	0.0398	-0.0024***	<.0001
cs_us	-0.0055	0.9047	-0.032	0.5311	-0.005	0.3045	-0.0017	0.7717
ca_vr	-0.3103*	0.0995	-0.1037	0.6204	-0.0488**	0.0146	-0.0563**	0.0175
sdrlnls	-0.2553***	0.0002	-3.2673***	<.0001	-0.0193***	0.0069	-0.2718***	<.0001
Adj. R-sq		0.1486		0.4944		0.2123		0.5078
N		622		687		622		687
Panel B: Charge-Off Components, Scaled by Total Deposits								
	ROE				**ROA**			
	SV		**HW**		**SV**		**HW**	
	coeff	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**
Intercept	-0.0856**	0.0306	-0.0106	0.6225	-0.0193***	<.0001	0.03031***	<.0001
ldep	0.0091***	0.0013	0.01067***	<.0001	0.00129***	<.0001	-0.002***	<.0001
offdom	0.0003***	0.0006	-0.0002	0.1783	0.0000	0.7025	0.00011***	<.0001
smallbank	0.00241	0.7580	-0.0353***	<.0001	-0.0007	0.3989	-0.011***	<.0001
mediumbank	0.01626***	0.0026	-0.0036	0.4892	0.00168***	0.0033	-0.0053***	<.0001
largebank	-0.0084	0.5654	-0.0065	0.6594	0.00042	0.7864	-0.0013	0.4247
inssave	-0.0059	0.3294	0.00919	0.2395	0.0001	0.9259	-0.0004	0.6881
dr	-0.0139	0.5345	-0.1093***	<.0001	0.00695***	0.0035	0.00308	0.217
crisis	-0.0077**	0.0426	-0.0199***	<.0001	-0.0013***	0.0014	-0.0023***	<.0001
cs_us	-0.0163	0.7043	-0.0316	0.5365	-0.006	0.1889	-0.0015	0.7977
ca_vr	-0.1252	0.479	-0.1161	0.5821	-0.0252	0.1786	-0.0551**	0.0217
sdrre	-2.7289***	<.0001	-3.5647***	<.0001	-0.255***	<.0001	-0.2694***	<.0001
sdrci	-2.0655***	<.0001	-2.3968***	<.0001	-0.2635***	<.0001	-0.2775***	<.0001
Adj. R-sq		0.2582		0.4909		0.3139		0.4992
N		622		687		622		687

*Table 5 presents robustness test results based on scaled factors. Ldep is natural logarithm of total bank deposits and offdom is the number of domestic offices, dr is debt ratio. Small banks have assets up to $100 million, medium banks have assets between $300 million and $1 billion, and large banks have assets exceeding $15 billion. INSSAVE is insured savings institution. Dr is the debt ratio and crisis is a dummy variable with one representing the recession and zero otherwise. Cs_us is the rate of change of the Case-Shiller US Index and ca_vr is the vacancy rate in California. Ldrlnls is the log of total bank charge-offs, ldrre is the log of loan secured by real estate charge-offs, ldrci is the log of commercial loan charge-offs. Significant difference from zero at the 10%, 5% and 1% level is denoted with *, ** and ***, respectively.*

We find that Silicon Valley banks have a consistently higher ROE throughout the examined period which includes two periods during and after the recession relative to Hollywood banks. Hollywood banks on the other hand have higher ROA only in the last two quarters of the examined period the rest of the time Silicon Valley banks consistently have higher ROA. We also find that the level of deposits, the leverage ratio and total loan charge-offs consistently play a role in the performance of banks. We suggest that the reason for the better performance of Silicon Valley banks might be due to the fact that they have realized that they have made a mistake prior to the Great Recession by absorbing higher loan charge-offs earlier than Hollywood banks. We base this argument on the age-old wisdom that it is better for a business to absorb losses once the business has realized that they have made a mistake.

A natrual limitation of the study, as mentioned earlier in the paper, is the fact that San Francisco, as a city, is not considered part of Silicon Valley, whereas Los Angeles is part of Hollywood. San Francisco as a world financial center has many banks located there which might have an effect on the results, if included. However, from strictly scientific standpoint adhering to the definitions is vital. Nevertheless, the further investigation of banks headquartered in San Francisco will be conducted by the authors in a future study. Another limitation of the study is the use of quarterly data. There might be vital information lost

due to the quarterly frequency, which might be available if higher frequency data were used, such as monthly or daily. However, as of the writing of the paper only quarterly data were available to the authors. This limitation, of course, can be used as an idea for a future study – re-examination of the research question in this study with higher frequency data.

Table 6: Regression Results – Combined Dataset and Detailed Loan Charge-Offs, Scaled by Total Deposits

	ROE		ROA		ROE		ROA	
	coeff	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**	**coeff**	**p-value**
Intercept	0.0504***	0.0083	0.0274***	<.0001	0.0080	0.6257	0.0234***	<.0001
ldep	0.0086***	<.0001	-0.0009***	<.0001	0.0070***	<.0001	-0.0010***	<.0001
OFFDOM	0.0001	0.5247	0.0000***	0.0004	0.0002***	0.0043	0.0000***	<.0001
smallbank	-0.0186***	0.0015	-0.0079***	<.0001	-0.0210***	<.0001	-0.0081***	<.0001
mediumbank	0.0050	0.2358	-0.0030***	<.0001	0.0009	0.7932	-0.0033***	<.0001
largebank	0.0227**	0.0278	0.0074***	<.0001	-0.0163*	0.0647	0.0045***	<.0001
INSSAVE	-0.0045	0.4290	-0.0002	0.7986	0.0001	0.9865	0.0002	0.7693
dr	-0.1277***	<.0001	-0.0079***	<.0001	-0.0707***	<.0001	-0.0035**	0.0307
crisis	-0.0101***	0.0036	-0.0016***	<.0001	-0.0156***	<.0001	-0.0021***	<.0001
cs_us	-0.0204	0.6085	-0.0034	0.4295	-0.0268	0.4324	-0.0040	0.3147
ca_vr	-0.4002**	0.0139	-0.0764***	<.0001	-0.1263	0.3669	-0.0500***	0.0020
sdrlnls	-0.9253***	<.0001	-0.0669***	<.0001				
sdrre					-3.4298***	<.0001	-0.2748***	<.0001
sdrci					-2.2579***	<.0001	-0.2078***	<.0001
HW	-0.0289***	<.0001	-0.0025	<.0001	-0.0121	<.0001	-0.0011	0.0004
Adj. R-sq		0.2194		0.2686		0.429		0.3935
N		1309		1309		1309		1309

*Table 6 reports regression results for the combined data sets of both regions but with parameters scaled by bank deposits. ldep is natural logarithm of total bank deposits and offdom is the number of domestic offices, dr is debt ratio. Small banks have assets up to $100 million, medium banks have assets between $300 million and $1 billion, and large banks have assets exceeding $15 billion. INSSAVE is insured savings institution. Dr is the debt ratio and crisis is a dummy variable with one representing the recession and zero otherwise. Cs_us is the rate of change of the Case-Shiller US Index and ca_vr is the vacancy rate in California. Ldrlnls is the log of total bank charge-offs, ldrre is the log of loan secured by real estate charge-offs, ldrci is the log of commercial loan charge-offs. HW is a dummy variable with value of one for banks headquartered in Hollywood and zero for Silicon Valley banks. Significant difference from zero at the 10%, 5% and 1% level is denoted with *, ** and ***, respectively.*

REFERENCES

Altunbaş, Yener and David Marqués. (2008). Mergers and acquisitions and bank performance in Europe: The role of strategic similarities. *Journal of Economics and Business*, 60(3), 204-222.

Angbazo, Lazarus. (1997). Commercial bank net interest margins, default risk, interest-rate risk, and off-balance sheet banking, *Journal of Banking & Finance*, 21(1), 55-87.

Barth, James R., Daniel E. Nolle, Triphon Phumiwasana and Glenn Yago. (2003). A Cross-Country Analysis of the Bank Supervisory Framework and Bank Performance. *Financial Markets, Institutions & Instruments,* 12(2), 67-120.

Beccalli, Elena. (2007). Does IT investment improve bank performance? Evidence from Europe. *Journal of Banking & Finance*, 31(7), 2205-2230.

Berger, Allen N., Seth D. Bonime, Daniel M. Covitz and Diana Hancock. (2000). Why are bank profits so persistent? The roles of product market competition, informational opacity, and regional/macroeconomic shocks. *Journal of Banking & Finance*, 24(7), 1203-1235.

Bonin, John P., Iftekhar Hasan and Paul Wachtel. (2005). Bank performance, efficiency and ownership in transition countries. *Journal of Banking & Finance*, 29(1), 31-53.

Boyd, John H., and Mark Gertler. (1994b). The Role of Large Banks in the Recent U.S. Banking Crisis, *Federal Reserve Bank of Minneapolis Quarterly Review,* 18, 2–21.

Boudreau, John. (2012). Lucasfilm deal tightens ties between Hollywood and Bay Area. *San Jose Mercury News*, Sunday, November 4, 2012, retrieved from: http://www.mercurynews.com on November 5, 2012.

Cebenoyan, A.Sinan and Philip E Strahan. (2004). Risk management, capital structure and lending at banks. *Journal of Banking & Finance*, 28(1), 19-43.

Clark-Neely, Michelle and David C. Wheelock. (1997). Why Does Bank Performance Vary Across States? *Review*, 1, 27-40.

Goldberg, Lawrence G. and Anoop Rai. (1996). The structure-performance relationship for European banking. *Journal of Banking & Finance*, 20(4), 745-771.

Hassan Al-Tamimi, Hussein A. (2010). Factors Influencing Performance of the UAE Islamic and Conventional National Banks. *Global Journal of Business Research*, 4(2), 1-9.

Hernando, Ignacio and María J. Nieto. (2007). Is the Internet delivery channel changing banks' performance? The case of Spanish banks. *Journal of Banking & Finance*, 31(4), 1083-1099.

Levonian, Mark. (1994). Interstate Banking and Risk. *Weekly Letter, Federal Reserve Bank of San Francisco*, 92-26.

Megginson, William L., Robert C. Nash and Matthias Van Randenborgh. (1994). The Financial and Operating Performance of Newly Privatized Firms: An International Empirical Analysis*. The Journal of Finance,* 49(2), 403-452.

Rose, Peter S. (1996). The Diversification and Cost Effects of Interstate Banking. *The Financial Review*, 31, 431-452.

Shiers, Alden F. (2002). Branch Banking, Economic Diversity and Bank Risk. *The Quarterly Review of Economics and Finance*. 42, 587-598.

Tadesse, Solomon. (2002). Financial Architecture and Economic Performance: International Evidence. *Journal of Financial Intermediation*, 11(4), 429-454.

Williams, Barry. (2003). Domestic and international determinants of bank profits: Foreign banks in Australia. *Journal of Banking & Finance*, 27(6), 1185-1210.

Zimmerman, Gary Chris. (1996). Factors influencing community bank performance in California. *Economic Review*, 1, 26-40.

Zou, YongDong, Stephen M. Miller and Bernard Malamud. (2011). Geographic Deregulation and Commercial Bank Performance in U.S. State Banking Markets. *The Quarterly Review of Economics and Finance*. 51, 28-35.

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THE IMPACT OF "NEED FOR VARIETY" ON COUNTRY IMAGE EFFECTS

Ting-Hsiang Tseng, Feng Chia University

ABSTRACT

This study applies the concept of product typicality to account for graded country images effects across products of a country on consumers' purchase intention. Consumers need for variety impacts consumer purchase intentions when the perspective of product typicality is applied. A two-by-two between subjects experiment was conducted in Taiwan with 152 undergraduate students. The results of the experiment suggest that typical products of a country attract more purchase intention and possess more positive country images than atypical products. Moreover, consumers with a high need for variety exhibit lower purchase intention to products, especially to atypical products of a country, than consumers with low need for variety. However, consumer need for variety is independent of the evaluation of country images.

JEL: M3

KEYWORDS: Country-of-Origin, Product Typicality, Need for Variety

INTRODUCTION

Country image or Country-of-Origin (COO) effects play an important role in international marketing (Ahmed et al., 2004; Clarke III et al., 2000; Hsieh, 2004; Laroche et al., 2005). Many product categories, such as cars, software, perfume, are strongly identified with certain countries (Kotler, and Gertner, 2002) (e.g., French perfume; German cars, etc.). However, only limited research to date explores the implications of the product-specific COO phenomenon. Product typicality is a concept which provides a new way to explain the product-specificity character of COO effects (Tseng, and Balabanis, 2011; Usunier, and Cestre, 2007). Using product typicality to express COO effects can easily incorporate certain product information with COO images in one construct and can introduce more psychologically meaningful explanations to the product-specific phenomenon of COO effects. This research applies the construct of product typicality instead of traditional measure of COO images to test product-specific COO effects.

When using product typicality to test COO effects, some factors that may impact the effects can emerge. For instance, consumers with a high need for variety may show different attitude patterns to typical products. Typical products are usually the most common and popular products in the market. However, consumers with a tendency to seek variety may find these products attractive. For example, iPhone, a typical smartphone brand, is losing some attractiveness in Asian countries in part because of consumer "iPhone fatigue". Data from StatCounter (gs.statcounter.com), which measures traffic collected across a network of 3 million websites, show a decline in Apple's share of mobile devices in 2012 in affluent Asian countries (e.g., Singapore: from 74.83% in January 2012 to 50.32% in January 2013, refer to gs.statcounter.com/#mobile_vendor-SG-monthly-201201-201301).

Evidence also reveals that many consumers switch to other Android devices which provides more mobile phone varieties. Many consumers feel bored with a brand when it becomes typical and common in the market. Nevertheless, we do not know if the story repeat for typical product categories of a country?

Existing variety seeking studies mostly focus on distinguishing between variety seeking and other purchasing behavior (e.g., Fishbach et al., 2011; Punj, 2011; Sharma et al., 2010), finding the determinants of variety seeking (e.g., Desai, and Trivedi, 2012; Ha, and Jang, 2013; Levav, and Zhu, 2009), and testing the impacts of variety seeking on different marketing mixes (e.g., Kim, 2013; Seetharaman, and Che, 2009). However, no known study examines the impact of need for variety in a

COO context. This gap may lead to problematic issues for practitioners who use country images to promote typical products. They do not know how variety seekers would react to typical country products. The current experiment explores possible impacts of need for variety on consumer purchase intention toward products of different levels of typicality concerning COO images. The article will first provide a literature review to develop several hypotheses for the objective. This section is followed by the methodology section which describes the experiment. The results of the analysis is presented with some discussions, and the conclusion section will manifest implications of this research.

LITERATURE REVIEW

The concept of typicality derives from prototype theory of category learning in cognitive psychology. Based on the prototype theory, typicality is defined as the degree to which an item is perceived to represent a category (Hamzaoui-Essoussi et al., 2011; Loken, and Ward, 1990). A product which is considered more typical than others means the product properties are more central (i.e., similar to the prototype of the product category) in consumers' perception than those of other product members in that category (Michel, and Rieunier, 2012). This is consistent with research in cognitive psychology that argues categories have graded structure (Lingle et al., 1984).

Similar to the argument of graded category structure, COO images have a graded structure as well. Usually, there are many different products produced in a country, but not all can possess equally high COO images in the market. Japanese consumer electronics may be attached a very positive COO image by consumers, but not Japanese shoes. COO images are graded across various products of a country. Products from the specific country possessing properties more central (i.e., closer to the prototype of COO images) are more typical, and thus have more positive COO images, than other products of the country. We define the typicality of products to the country as country typicality(Tseng, and Balabanis, 2011), which can help us speculate different levels of typicality and graded COO images across products of a country. According to the inference here, we can have the following hypothesis:

H1: Typical products of a country (i.e., products possessing high country typicality) have more positive COO images than atypical products of that country (i.e., products possessing low country typicality).

Previous studies have demonstrated positive relationships between typicality and consumer attitudes or purchase intention in a variety of product categories (Loken, and Ward, 1987; Nedungadi, and Hutchinson, 1985; Roest, and Rindfleisch, 2010). This result can also apply to country typicality. On one hand, products with a high level of country typicality have more positive COO images than others. On the other hand, products possessing positive COO images induce consumers' purchase intention (Chai et al., 2004; Peterson, and Jolibert, 1995; Verlegh, and Steenkamp, 1999). Moreover, Usunier and Cestre (2007) also find evidence to support that "willingness to buy a particular product is positively related to the degree of congruence between the product's COO and its ethnicity" (p. 42). We propose typical products of a country can evoke consumers' purchase intention as the following hypothesis:

H2: Typical products of a country can induce more positive consumers' purchase intention than atypical products of that country.

Variety seeking theory suggests that people sometimes prefer more alternatives when stimulation falls below the optimal stimulation level (Driver, and Streufert, 1965; McAlister, and Pessemier, 1982; Raju, 1980). The optimal stimulation level (OSL) is an ideal level of stimulation that a consumer seeks (e.g. novelty, incongruity, complexity, change, and so on). This ideal level exists in the consumer's mind and may reach different degrees among different consumers. As stimulation falls below the ideal level, cognitive action produces more input (e.g. exploration, novelty seeking). As the stimulation increases beyond the ideal level, cognitive action will attempt to reduce or simplify input (Sharma et al., 2010). The optimal level is positively related to a consumer's desire for unusual products and services (Raju, 1980). Based on the above arguments, when given the same product stimulation, consumers with high OSLs (i.e., consumers with a high need for variety) may show lower purchase intentions toward the products than do

consumers with low OSLs. Specifically, for consumers with high OSLs, the products may not be able to provide a satisfactory level of stimulation, and can drive consumers to seek some more varieties (Ha, and Jang, 2013). Hence, their purchase intention toward the given products can be mitigated in general. However, consumers with low OSLs may easily be satisfied by the given product stimulation, and will not engage in the action of seeking other alternatives. Therefore, we can have the following hypothesis:

H3: In general, high OSLs (i.e., high consumer need for variety) may mitigate consumers' purchase intention toward products of given countries.

Although the study argues that high OSLs could mitigate consumer purchase intentions toward products as mentioned in H3, we believe that the mitigation effects of OSLs can be different across product categories. This is especially true between typical and atypical products, of a given country since product typicality could play an important role in evaluating a new product (Hong, and Kang, 2006; Tseng, and Balabanis, 2011). Typical products are usually more familiar and popularized, thus reducing their stimulation potential for the buyer because the product is no longer novel or complex for the consumer (Berlyne, 1960). This characteristic leads to a perception of boredom (or lack of stimulation), and the consumer may then attempt to increase stimulation by switching to something different or novel in choice of a product (Menon, and Kahn, 1995). However, the story may be different in the context of COO effects. When a product is atypical of a country, the industry of that product in the country usually does not thrive and cannot provide many varieties of that product. This may cause consumers with high OSLs to feel even more boredom and further reduce their purchase intention. On the contrary, the industry of typical products of a country is usually prosperous in that country, and can therefore supply many varieties and alternatives of the products. This may reduce the perception of boredom for consumers with a high need for variety and lessen the mitigation effects on their purchase intention (Tuu, and Olsen, 2013). Hence, the mitigation effects of consumer need for variety on purchase intention may be stronger for atypical products of a country than for typical products of a country.

H4: Consumers with high OSLs will exhibit much lower purchase intention toward atypical products of a country than will consumers with low OSLs. However, such a mitigation effect on purchase intention will be slight or insignificant for typical product of the country.

While this research claims need for variety could mitigate consumers' purchase intention toward products of a country on the one hand, some literature notices that variety seeking can be independent of preferences for a particular item (Feinberg et al., 1992; Givon, 1984; Kahn et al., 1986; Lattin, and McAlister, 1985). For instance, a consumer may choose a glass of Spanish wine following a choice of a glass of French wine not because his or her preference for French wine has changed but just because s/he wants something different. Thus, variety-seeking behavior can occur when preferences for the items remain constant but a need for increased variety or stimulation exists. Similarly, variety-seeking behavior can also occur when COO images of the items remain constant. People may possess a positive COO image of Italian pizzas but sometimes may want to try some Mexican alternatives, especially for consumers with high OSLs. Therefore, we propose the degree of OSLs does not change consumers' evaluations of COO images of products as stated in the following hypothesis:

H5: Different degrees of consumers' OSLs will not change their COO image evaluations of products.

METHODOLOGY

A two-by-two between subjects factorial design was applied to the experiment. Country typicality (typical product of a country vs. atypical product of a country) and consumer need for variety (consumers with high OSLs vs. consumers with low OSLs) were the two factors considered.

Several studies suggest that variety seeking is germane to hedonic products, such as restaurant, music, or leisure activities. Individuals tend to spread their choices across available alternatives among hedonic products (Ratner et al., 1999; Read, and Loewenstein, 1995; Simonson, 1990; Van Trijp et al., 1996). To

avoid possible bias due to product hedonism, we controlled for this variable and used only hedonic products for the tests. South Korea was selected as the country of origin in this study since Taiwanese students are familiar with products from this country. LCD TV and wine were selected as typical and atypical hedonic products of South Korea respectively for Taiwanese consumers according to a discussion with some experts. A pilot test was launched to check the selection of typical and atypical hedonic products of South Korea. A separate pool of undergraduate students attended the pilot test. They rated their perception of hedonism and typicality on the two selected products of South Korea. Results showed that Korean LCD TV was regarded as a typical hedonic product while Korean wine as atypical hedonic.

The study subjects were 152 undergraduate students at a college in Taiwan who enrolled in two marketing classes. Subjects were required to rate their need for variety on the Exploratory Acquisition of Products (EAP) scale (Van Trijp et al., 1996) in early October 2012. This occurred one month before the formal test. Seven-point Likert scales were applied to the measure. Based on the scores, we classified subjects into two groups, high-OSL and low-OSL, on the basis of a median split (3.4 in this case). Thus each group included 76 subjects. The 76 subjects in each group were randomly assigned to the conditions of typical or atypical products in a balanced way. This measure also assured manipulation of consumer need for variety in the experiment. The mean OSL value (mean=5.06) for the high OSL group was significantly higher than the mean OSL value (mean=2.26) for the low OSL group ($p < 0.01$). The difference between groups of typical and atypical products in the mean value of OSL was insignificant ($p > 0.9$).

Two weeks before the formal test, all subjects were required to evaluate the level of country typicality of the product assigned to them (Korean LCD TV or Korean wine). They rated the product on the 7-point Likert scale ranging from 1 = "strongly disagree" to 7 = "strongly agree" with three descriptions ("extremely good example", "very typical", and "very representative"), respectively (Loken, and Ward, 1990). The results of this test assured the manipulation of country typicality. The mean typicality value for the high typicality groups was 5.32, which is significantly higher than the mean of 2.16 for the low typicality groups ($p < 0.01$). There was no significant difference between high-OSL and low-OSL subjects in the mean value of typicality ($p > 0.3$).

In the formal experiment, all subjects were asked their purchase intention and their perceived COO images toward the product assigned to them. Purchase intention was evaluated by the following items: "Do you intend to buy…?", "How likely is it that you would buy…?", and "Do you like the idea of owning the…?" Participants also rated on scales modified from Nebenzahl, Jaffe, & Usunier's (2003) questionnaire that measured product-specific COO images of each category. Seven-point Likert scales were applied to all items.

We separated the three tests weeks apart from each other to minimize demand effects. In each test, participants were instructed different research purposes and needed to rate on some extra measures irrelevant to this study in the first two tests. In a short interview with participants after the formal experiment, most subjects did not associate the three tests with each other as a single study.

RESULTS AND DISCUSSION

Table 1 presents means of purchase intention and COO images for each condition in the experiment. ANOVAs (analysis of variance) with between-subjects factors of country typicality (typical versus atypical) and consumer need for variety (high-OSL subjects versus low-OSL subjects) were performed separately for purchase intention and country image evaluation (see Table 2).

This research argues that products with different levels of country typicality may possess different degrees of COO images even if the products are from the same country. The more typical a product is to the country, the more favorable the COO image of that product can be. The significant main effect of country typicality ($F(1, 148) = 130.33$, $p < 0.01$) on COO images showed that COO images of Korean LCD TV's (mean = 4.57) are more favorable than are COO images of Korean wine (mean = 2.81). This supports the argument of H1.

Table 1: Means of Purchase Intention and Country Image Evaluations

	Purchase Intention			Country Image Evaluation		
	Typical product	**Atypical product**	**Total**	**Typical product**	**Atypical product**	**Total**
High-OSL	4.83	2.48	3.66	4.50	2.86	3.68
Low-OSL	5.22	3.64	4.43	4.64	2.76	3.70
Total	5.03	3.06	4.04	4.57	2.81	3.69

This table shows the means of consumers' purchase intention and country image evaluations in different conditions. The column labeled Typical product indicates Korean LCD TV and Atypical product indicates Korean wine. The row labeled High-OSL indicates consumers with high need for variety and Low-OSL indicates consumers with low need for variety.

The significant main effect of country typicality on purchase intention provides empirical support for H2 (F (1,148) = 188.26, $p < 0.01$). Korean LCD TV's (mean = 5.03) induce more positive purchase intention than do Korean wine (mean = 3.06). This indicates that although products are from the same country – South Korea, consumers may tend to show a preference for buying products typical rather than atypical to the country. Further, the main effect of consumer need for variety on purchase intention is significant (F (1,148) = 29.05, $p < 0.01$). Subjects with higher OSLs (mean = 3.66) show less purchase intention than do subjects with lower OSLs (mean = 4.43), which supports H3.

Table 2: ANOVAs of Country Typicality and Need for Variety on Purchase Intention and Country Image Evaluation

	Purchase Intention			Country Image Evaluation		
	df	**F**	**Sig.**	**df**	**F**	**Sig.**
Corrected model	3	74.85	0.000***	3	43.65	0.000***
Intercept	1	3190.17	0.000***	1	2281.88	0.000***
CT	1	188.26	0.000***	1	130.33	0.000***
NV	1	29.05	0.000***	1	0.02	0.890
CT x NV	1	7.26	0.008**	1	0.62	0.433
R^2	0.60			0.47		

*This table shows the ANOVA results of country typicality and need for variety on consumers' purchase intention and country image evaluation. The column labeled df indicates degree of freedom, F indicates F value, and Sig. indicates p-value. The row labeled CT indicates country typicality, NV indicates need for variety, and CT x NV indicates the interaction between CT and NV. The notation *** means p<0.001; ** means p<0.01; * means p<0.05.*

The interaction between country typicality and consumer need for variety on purchase intention was also significant (F (1,148) = 7.26, $p < 0.01$). Among the four experiment cells, subjects with a high need for variety exhibited the lowest purchase intention toward Korean wine (mean = 2.48); subjects with a low need for variety showed the highest purchase intention to Korean LCD TV's (mean = 5.22). For atypical products, subjects with a high need for variety presented a significant lower purchase intention than did subjects with a low need for variety (t (74) = -6.70, $p < 0.01$). For typical products, however, the difference of purchase intention between high-OSL and low-OSL subjects was insignificant (t (74) = -1.69, $p > 0.01$). The results support H4.

We proposed that consumer variety seeking behavior can be independent from their evaluation of COO images. The results of insignificant main effects of consumer need for variety and insignificant interaction effects between consumer need for variety and country typicality on COO images supports the argument. Consumers with high OSLs held similar COO images of products with consumers with low OSLs. This situation did not change for typical or atypical products of the country. Therefore, different levels of need for variety will not change consumer perception of a product's COO image, supporting the H5 argument.

CONCLUSION

We tested our theory using a two-by-two between subjects factorial experiment. As expected, participants show higher purchase intention to typical products than atypical products of a country in the experiment. This is consistent with typicality studies that maintain more typical examples tend to be favored more by human beings (Barsalou, 1983; 1985; Loken, and Ward, 1987; Nedungadi, and Hutchinson, 1985). Our

experiment extends the argument to the context of COO images. The experiment also confirms the proposition that COO images are graded across products of a country. As we proposed, typical products of a country received more favorable COO images than atypical products of that country.

Participants with different levels of consumer need for variety showed different degrees of purchase intention to the products in the experiment. Specifically, subjects with high need for variety showed a significantly lower purchase intention to the atypical product than did subjects with low need for variety. But the difference of purchase intention between subjects with high OSLs and low OSLs toward typical product was insignificant. Typical products of a country are usually superior and have many varieties in the market. For example, French perfume is a typical French product. Many kinds of French perfume exist in the market. Consumers with a high need for variety can easily find novel or different French perfumes in the shop. Therefore, their strong innate drives for variety seeking can be satisfied by those various typical products of a country and will not greatly mitigate consumers' purchase intention to those products. On the contrary, atypical products of a country are usually less popular and not a lot of varieties can be found in the market. Consumers with high OSLs tend to have a perception of boredom and eagerly try to switch to something else. However, there is no significant difference in the evaluation of COO images between subjects with high OSLs and low OSLs. Subjects with high OSLs will not modify their COO images of a product although they may reduce their purchase intention of products, especially to atypical products of a country.

We controlled product types and used only student samples in the experiment to avoid possible bias and noise. Although a controlled experiment setting can offer benefits and opportunities for researchers (Kardes, 1996), future research is encouraged to use different stimuli and samples of consumers to further establish external validity of our theory.

REFERENCES

Ahmed, Z. U., J. P. Johnson, X. Yang and C. K. Fatt. (2004) "Does country of origin matter for low-involvement products?," *International Marketing Review*, vol. 21 (1), p. 102-120.

Barsalou, L. W. (1983) "Ad hoc categories," *Memory & Cognition*, vol. 11 (3), p. 211-227.

Barsalou, L. W. (1985) "Ideals, central tendency, and frequency of instantiation as determinants of graded structure," *Journal of Experimental Psychology: Learning, Memory, and Cognition*, vol. 11 (4), p. 629-654.

Berlyne, D. E. (1960), *Conflict, arousal, and curiosity*, McGraw Hill, New York.

Chai, Y., B. Cude and R. Swagler. (2004) "Country-of-origin effects on consumers' willingness to buy foreign products: An experiment in consumer decision making," *Journal of Consumer Interests Annual*, vol. 50, p. 98-105.

Clarke Iii, I., M. Owens and J. B. Ford. (2000) "Integrating country of origin into global marketing strategy," *International Marketing Review*, vol. 17 (2/3), p. 114-126.

Desai, K. K. and M. Trivedi. (2012) "Do consumer perceptions matter in measuring choice variety and variety seeking?," *Journal of Business Research*, vol.

Driver, M. J. and S. Streufert. (1965), *The 'General incongruity adaptation level' (GIAL) hypothesis: An analysis and integration of cognitive approaches to motivation*, Purdue University, West Lafayette, IN.

Feinberg, F. M., B. E. Kahn and L. Mcalister. (1992) "Market Share Response When Consumers Seek Variety," *Journal of Marketing Research*, vol. 29 (May), p. 227-237.

Fishbach, A., R. K. Ratner and Y. Zhang. (2011) "Inherently loyal or easily bored?: Nonconscious activation of consistency versus variety-seeking behavior," *Journal of Consumer Psychology*, vol. 21 (1), p. 38-48.

Givon, M. (1984) "Variety seeking through brand switching," *Marketing Science*, vol. 3 (Winter), p. 1-22.

Ha, J. and S. S. Jang. (2013) "Determinants of diners' variety seeking intentions," *Journal of Services Marketing*, vol. 27 (2), p. 155-165.

Hamzaoui-Essoussi, L., D. Merunka and B. Bartikowski. (2011) "Brand origin and country of manufacture influences on brand equity and the moderating role of brand typicality," *Journal of Business Research*, vol. 64 (9), p. 973-978.

Hong, S.-T. and D. K. Kang. (2006) "Country-of-origin influences on product evaluations: The impact of animosity and perceptions of industriousness brutality on judgments of typical and atypical products," *Journal of Consumer Psychology*, vol. 16 (3), p. 232-239.

Hsieh, M.-H. (2004) "An investigation of country-of-origin effect using correspondence analysis: a cross-national context," *International Journal of Market Research*, vol. 46 (3), p. 267-295.

Kahn, B. E., M. U. Kalwani and D. G. Morrison. (1986) "Measuring variety-seeking and reinforcement behaviors using panel data," *Journal of Marketing Research*, vol. 23 (2), p. 89-100.

Kardes, F. R. (1996) "In defense of experimental consumer psychology," *Journal of Consumer Psychology*, vol. 5 (3), p. 279-296.

Kim, H. (2013) "How Variety-Seeking Versus Inertial Tendency Influences the Effectiveness of Immediate Versus Delayed Promotions," *Journal of Marketing Research*, vol. 50 (3), p. 416-426.

Kotler, P. and D. Gertner. (2002) "Country as brand, product, and beyond: A place marketing and brand management perspective," *Brand Management*, vol. 9 (4-5), p. 249-261.

Laroche, M., N. Papadopoulos, L. A. Heslop and M. Mourali. (2005) "The influence of country image structure on consumer evaluations of foreign products," *International Marketing Review*, vol. 22 (1), p. 96-115.

Lattin, J. M. and L. Mcalister. (1985) "Using a variety-seeking model to identify substitute and complementary relationships among competing products," *Journal of Marketing Research*, vol. 22 (3), p. 330-339.

Levav, J. and R. J. Zhu. (2009) "Seeking freedom through variety," *Journal of Consumer Research*, vol. 36 (4), p. 600-610.

Lingle, J. H., M. Altom and D. Medin. (1984), "Of cabbages and kings in assessing the extendability of natural object concept model to social things", In Wyer, R. and Srull, T. (Eds.), *Handbook of Social Cognition*, Erlbaum, NJ, p.

Loken, B. and J. Ward. (1987) "Measures of the attribute structure underlying product typicality," *Advances in Consumer Research*, vol. 14 (1), p. 22-26.

Loken, B. and J. Ward. (1990) "Alternative approaches to understanding the determinants of typicality," *Journal of Consumer Research*, vol. 17, p. 111-126.

Mcalister, L. and E. Pessemier. (1982) "Variety-seeking behavior: An interdisciplinary review," *Journal of Consumer Research*, vol. 9 (3), p. 311-322.

Menon, S. and B. E. Kahn. (1995) "The impact of context on variety seeking in product choices," *Journal of Consumer Research*, vol. 22 (December), p. 285-295.

Michel, G. and S. Rieunier. (2012) "Nonprofit brand image and typicality influences on charitable giving," *Journal of Business Research*, vol. 65 (5), p. 701-707.

Nebenzahl, I. D., E. D. Jaffe and J.-C. Usunier. (2003) "Personifying country of origin research," *Management International Review*, vol. 43 (4), p. 383-406.

Nedungadi, P. and J. W. Hutchinson. (1985), "The prototypicality of brands: Relationships with brand awareness, preference, and usage", In Hirschman, E. C. and Holbrook, M. B. (Eds.), *Advances in Consumer Research*, Association for Consumer Research, p. 498-503.

Peterson, R. A. and A. J. P. Jolibert. (1995) "A meta-analysis of country-of-origin effects," *Journal of International Business Studies*, vol. 26 (4), p. 883-900.

Punj, G. (2011) "Impulse buying and variety seeking: Similarities and differences," *Journal of Business Research*, vol. 64 (7), p. 745-748.

Raju, P. S. (1980) "Optimum stimulation level: Its relationship to personality demographics and exploratory behavior," *Journal of Consumer Research*, vol. 7 (3), p. 272-282.

Ratner, R. K., B. E. Kahn and D. Kahneman. (1999) "Choosing less-preferred experiences for the sake of variety," *Journal of Consumer Research*, vol. 26 (1), p. 1-15.

Read, D. and G. Loewenstein. (1995) "Diversification Bias: Explaining the discrepancy in variety seeking between combined and separated choice," *Journal of Experimental Psychology: Applied*, vol. 1 (1), p. 34-49.

Roest, H. and A. Rindfleisch. (2010) "The influence of quality cues and typicality cues on restaurant purchase intention," *Journal of Retailing and Consumer Services*, vol. 17 (1), p. 10-18.

Seetharaman, P. and H. Che. (2009) "Price competition in markets with consumer variety seeking," *Marketing Science*, vol. 28 (3), p. 516-525.

Sharma, P., B. Sivakumaran and R. Marshall. (2010) "Impulse buying and variety seeking: A trait-correlates perspective," *Journal of Business Research*, vol. 63 (3), p. 276-283.

Simonson, I. (1990) "The effect of purchase quantity and timing on variety-seeking behavior," *Journal of Marketing Research*, vol. 27 (2), p. 150-162.

Tseng, T.-H. and G. Balabanis. (2011) "Explaining the product-specificity of country-of-origin effects," *International Marketing Review*, vol. 28 (6), p. 581-600.

Tuu, H. H. and S. O. Olsen. (2013) "Consideration set size, variety seeking and the satisfaction–repurchase loyalty relationship at a product category level," *Asia Pacific Journal of Marketing and Logistics*, vol. 25 (4), p. 4-4.

Usunier, J.-C. and G. Cestre. (2007) "Product Ethnicity: Revisiting the Match Between Products and Countries," *Journal of International Marketing*, vol. 15 (3), p. 32-72.

Van Trijp, H. C. M., W. D. Hoyer and J. J. Inman. (1996) "Why switch? Product category-level explanations for true variety-seeking behavior," *Journal of Marketing Research*, vol. 33 (3), p. 281-292.

Verlegh, P. W. J. and J.-B. E. M. Steenkamp. (1999) "A review and meta-analysis of country-of-origin research," *Journal of Economic Psychology*, vol. 20 (5), p. 521-546.

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DYNAMIC RETURN-ORDER IMBALANCE RELATIONSHIP RESPONSE TO LEVERAGED BUYOUT ANNOUNCEMENTS

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Yao-Hsuan Chang, National Taiwan University

ABTRACT

Many researches indicate informed trading during Leveraged buy-out (LBO) processes. In this study, we examine intraday dynamic relations between order imbalance, volatility and stock returns. The dynamic relation between volatility and order imbalances by a time-varying GARCH model is insignificant, suggesting that market makers have a good ability to mitigate volatility of LBO firms on event dates. Our imbalance-based trading strategy earns a positive profit but cannot beat a buy-and-hold return.

JEL: G14, G34

KEYWORDS: Leveraged-buyout, Order Imbalance, Return, Volatility

INTRODUCTION

Leveraged buyouts (LBO) are an important issue in corporate restructuring activities. During a LBO process, a financial sponsor acquires a controlling equity interest and a significant percentage of the purchase price is financed through leverage. Assets of the acquired company are used as collateral for the borrowed capital, sometimes with assets of the acquiring company. The bonds or other papers issued for leveraged buyouts are commonly considered not to be investment grade because of the significant risks involved.

Companies of all sizes and industries have been the target of leveraged buyout transactions. Of interest is the importance of debt and the ability of the acquired firm to make regular loan payments after the completion of a leveraged buyout. Some features of potential target firms make them for attractive leveraged buyout candidates. These features include: low existing debt loads; hard assets (property, plant and equipment, inventory, receivables) that may be used as collateral for lower cost secured debt; the potential for new management to make operational or other improvements to the firm to boost cash flows; market conditions and perceptions that depress the valuation or stock prices.

Several papers document that LBOs create real wealth gains and improvements in operating performance, perhaps because of a more efficient ownership structure and allocation of residual claims under private ownership (e.g. Alperovych et al., 2013). In contrast, others argue that leveraged buyouts mainly affect wealth transfers (Arthur and Ivo, 1993; Baran and King, 2010) from bond-holders or tax authorities to shareholders, or transfers from selling stockholders to manager-insiders rather than wealth creation.

Degeorge and Zeckhauser (1993) indicated the reverse LBO might include asymmetric information and managers use their private information to time the Initial Public Offering (IPO) and manipulate performance. Therefore, we examine informed trading during the LBO process. According to Chordia and Subrahmanyam (2004), order imbalances are strongly positively auto-correlated in their sample stocks and the relation between lagged imbalances and returns is significantly positive. In addition, contemporaneous imbalances strongly relate to current returns, but the positive relation between lagged imbalances and current returns disappears after controlling for the contemporaneous imbalances. Following Chordia and Subrahmanyam (2004), we examine intraday LBO convergence process.

Chordia and Subrahmanyam (2002) found that the price impact of the contemporaneous imbalance is highest for the largest firms as is the reversal in the lagged imbalances. We employ a time-varying GARCH (1,1) model to examine dynamic relations between volatility and order imbalances. Based on our empirical evidence, we develop an imbalance-based trading strategy to investigate whether our trading strategies are able to beat the market at different time intervals. Finally, we investigate dynamic causality relations between order imbalances and returns to explore intraday dynamics in convergence process.

We have two marginal contributions. First, announcement day LBO trading could mainly be initiated by uninformed traders. If the information cannot be incorporated into the price immediately, the uninformed traders could develop a trading strategy, which yields a positive return. Second, on the LBO announcement day, market maker behavior plays a very important role in mitigating volatility from discretionary trades through inventory adjustments.

The remainder of this paper is organized as follows. In literature review section, we review some papers about LBO and information asymmetry. In the data and methodology section, we describe the data and methods. In the results section, we present the empirical results, and we provide our conclusions in section concluding comments.

LITERATURE REVIEW

Many scholars have studied information asymmetry in LBO's, finding that stockholders and managements benefit from the LBO process. Kaplan (1989) indicated that management could take advantage of the LBO process to realize tax benefits. Muscarella and Vetsuypens (1990) and Ippolito and James (1992) found that operating efficiency after the LBO process is significantly better. Chou, Gombola, and Liu (2006) studied the sample of 247 reverse LBOs in America. Their evidence further supported previous findings. Cumming and Zambelli (2010) examined LBOs within the Italian private equity market, whose transactions were only recently legalized. They found that laws prohibiting LBOs result in less efficient LBO arrangements. Palepu (1990) summarized the LBO literature and offers some observations as follows: First, stockholders of firms undergoing LBOs earn substantial returns from the transactions. Second, LBOs appear to have two opposing effects on firm risk. Although the leverage increases financial risk, the increases in operating efficiency reduces business risk. The net result is that LBO investors bear significantly lower risk than comparably levered investments in public corporations.

Grossman (1976) indicated that uninformed traders could detect the implications in informed traders' trading behaviors by observing the stock price change patterns. He also found that participation of noise traders who tend to imitate behaviors of informed traders increase trading volume of the stock. Kyle (1985) built a dynamic model of insider trading with sequential auctions. He stated that insiders place orders according to their monopolistic information and make positive profits. However, the noise trading provided some "camouflage" concealing insider trading. Holden and Subrahmanyam (1994) extended Kyle's model into a multi-period auction model and concluded that all private information is revealed immediately when market depth is gets larger. Foster and Viswamathan (1994) also extended Kyle's assumption to provide a dynamic model of strategy trading of two asymmetrically informed traders. They found that common information is released quickly to the market while private information spreads slowly. Wang (1993) indicated that information asymmetry among investors can increase price volatility and cause negative autocorrelation in returns and less-informed investors might be like price chasers.

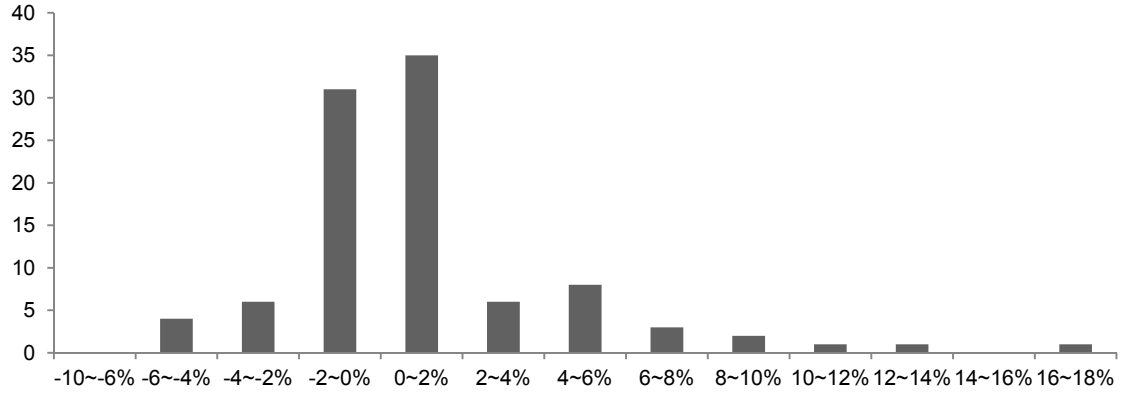
DATA AND METHODOLOGY

All LBO samples are from the SDC database from 1998 through 2008. We obtain intraday trading data on the announcement day of LBO stocks from TAQ (Trade and Automated Quotations). Stock are included or excluded depending on the following criteria. First, the firm shall be included in both SDC and the TAQ. Finance and Real estate firms are excluded. Second, the stock shall be liquid and be traded frequently, and the daily trading volume is above 200,000. Third, the stock trading characteristics might differ from certificates American Depository Receipts, shares of beneficial interest, units, companies

incorporated outside the U.S, closed-end funds, Americus Trust components, preferred stocks and REITs. For these reasons we expunge these kinds of securities. Fourth, if there are any stock splits, reverse splits, stock dividends, repurchases or a secondary offerings, the firm is deleted from our sample. To avoid noise trading, we delete those transactions recorded within the first 90 seconds after the market opens. Fifth, we dropped those quotes with an abnormally-large bid-ask spread and a negative bid-ask spread.

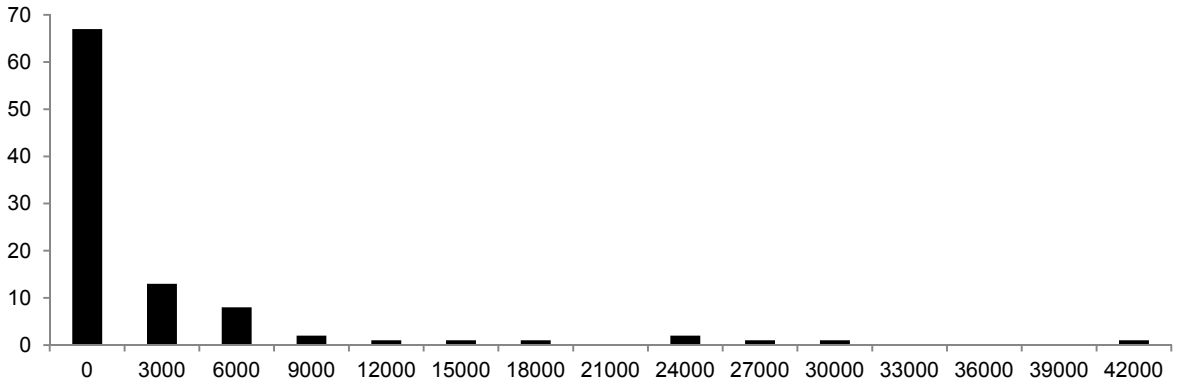
After processing the data, 99 firms remain in our sample. The average open-to-close return of our sample stock is 0.99%, with a median 0.16%. The standard deviation of return is 3.63%, with a maximum of 16.83% and a minimum of -5.72%. The distribution of sample open-to-close returns is graphed in Figure 1. As can be seen, 84.8% of the return is limited below 4%, whereas only 3% of the firms have a return above 10%. The distribution of market capitalization is demonstrated in Figure 2. The average market capitalization of the sample is $4,455.13 million, with a median of $1,880.98 million. The standard deviation of market capitalization is $7,556.91 million, with a maximum of $44,372.38 million and a minimum of 126.265 million. The distribution of market capitalization is a rightward skewed distribution.

Figure 1: Distribution of Open-to-close Return of the Sample Stocks



This figure shows the distribution of open-to-close return of all LBO samples in 1998 through 2008.

Figure 2: Distribution of Market Capitalization of the Sample Stocks



This figure shows the distribution of market capitalization of all LBO samples in 1998 through 2008.

In addition, we use the Lee and Ready (1991) procedure to assign buyer-initiated or seller-initiated orders. First, we examine an unconditional lagged order imbalances regression as follows:

$$R_t = \alpha_0 + \alpha_1 OI_{t-1} + \alpha_2 OI_{t-2} + \alpha_3 OI_{t-3} + \alpha_4 OI_{t-4} + \alpha_5 OI_{t-5} + \varepsilon_t \quad (1)$$

where R_t is the stock return in period t, defined as $\ln(P_t)$-$\ln(P_{t-1})$, OI_t is lagged order imbalance at time t of each stock.

We expect a positive relation between return and lagged order imbalances. We also include contemporaneous imbalance and four lags of order imbalance to examine conditional return-imbalance relations. We expect a significantly positive current imbalance, and negative relations between return and lagged imbalances. In addition, we examine dynamic relations between volatility and order imbalance. Intuitively, we expected a high order imbalance following a large volatility. A time varying GARCH(1,1) model is employed as follows:

$$\begin{aligned} &R_t = \alpha + \varepsilon_t \\ &\varepsilon_t \mid \Omega_{t-1} \sim N(0, h_t) \\ &h_t = A_t + B_1 h_{t-1} + C_1 \varepsilon_{t-1}^2 + \gamma * OI_t \end{aligned} \tag{2}$$

where R_t is the stock return in period t, defined as $\ln(P_t)$-$\ln(P_{t-1})$, OI_t is the order imbalance, γ is the coefficient describing the impact of order imbalance on stock volatility, ε_t is the residual of the stock return in period t, h_t is the conditional variance in the period t, Ω_{t-1} is the information set in period t-1

RESULTS

We use a multi-regression model to examine the unconditional lagged return-order imbalance OLS relation. We present the empirical results in Table 1. The significantly positive percent of lagged-one imbalance at the 5% significant are 9.12%, 10.1%, and 6.11% for 5-, 10-, and 15-min time intervals respectively.

Table 1: Unconditional Lagged Return-Order Imbalance OLS Relation

	Average Coefficient	Positive	Positive and significant	Negative and significant
Panel A: 5-minute interval				
OI_{t-1}	16.23**	50.0%	9.12%	5.12%
OI_{t-2}	-23.18*	52.5%	11.10%	7.12%
OI_{t-3}	25.68	54.0%	6.11%	1.01%
OI_{t-4}	-3.82	36.9%	2.02%	7.19%
OI_{t-5}	-19.18	56.6%	7.14%	8.19%
Panel B: 10-minute interval				
OI_{t-1}	5.97**	51.5%	10.10%	4.02%
OI_{t-2}	-13.28*	34.3%	4.03%	11.10%
OI_{t-3}	-24.14	50.5%	3.02%	3.01%
OI_{t-4}	29.08	49.5%	6.15%	5.19%
OI_{t-5}	-8.82	47.5%	5.17%	3.09%
Panel C: 15-minute interval				
OI_{t-1}	23.68*	47.5%	6.18%	5.12%
OI_{t-2}	-26.25**	42.4%	4.04%	6.12%
OI_{t-3}	38.48	48.5%	3.05%	3.01%
OI_{t-4}	-42.38	54.0%	7.12%	5.19%
OI_{t-5}	4.35	52.0%	5.16%	1.09%

*This table shows regression estimates of the equation: $R_t=\alpha_0 + \alpha_1 OI_{t-1}+\alpha_2 OI_{t-2}+\alpha_3 OI_{t-3}+\alpha_4 OI_{t-4}+\alpha_5 OI_{t-5}+\varepsilon_t$, where R_t is the current stock return of the individual stock, and OI_t is lagged order imbalance at time t for each individual stock. Panels A, B and C present the results in 5, 10 and 15 minute intervals respectively. The average coefficients are multiplied by 10^9. *, ** and *** indicate significance at the 10, 5 and 1 percent levels respectively.*

The result of our empirical study is consistent with Chordia and Subrahmanyam (2004). The possible reason for our lower prediction power is that either the time interval is too short to reveal information timely or the LBO market is efficient. Another possible reason is that market makers have information advantages. Market markers are accommodated before LBO announcements to reduce inventory risk.

Next, we include contemporaneous order imbalance into the regression. Table 2 shows the percentage of significantly positive contemporaneous imbalances are 21.2%, 16.2%, and 16.2% for 5-, 10-, and 15-min intervals respectively. Although most coefficients of lagged-one imbalance are negative for all time intervals, the percentage of negative and significant coefficients are only 6.14%, 6.14%, and 7.19 % at 5-, 10-, and 15-min intervals.

Table 2: Conditional Contemporaneous Return-Order Imbalance OLS Relation

	Average Coefficient	Positive	Positive and significant	Negative and significant
Panel A: 5-minute interval				
OI_{t-1}	77.88**	60.6%	21.20%	11.10%
OI_{t-2}	-9.97*	46.5%	5.16%	6.14%
OI_{t-3}	15.38	53.5%	9.17%	3.07%
OI_{t-4}	7.39	57.6%	8.18%	3.08%
OI_{t-5}	22.28	33.3%	3.05%	12.10%
Panel B: 10-minute interval				
OI_{t-1}	8.98**	66.7%	16.20%	6.14%
OI_{t-2}	-7.52**	53.5%	11.10%	6.14%
OI_{t-3}	-38.58*	37.4%	7.19%	10.10%
OI_{t-4}	-23.32	52.5%	4.04%	3.08%
OI_{t-5}	30.23	52.5%	8.14%	3.08%
Panel C: 15-minute interval				
OI_{t-1}	93.86**	54.5%	16.20%	4.04%
OI_{t-2}	-32.31*	43.4%	4.04%	7.19%
OI_{t-3}	-34.77	37.4%	3.05%	6.14%
OI_{t-4}	44.42	54.5%	3.05%	3.05%
OI_{t-5}	-51.68	46.5%	3.05%	5.16%

*This table shows the regression estimates of the equation: $R_t=\alpha_0 + \alpha_1 OI_t+\alpha_2 OI_{t-1}+\alpha_3 OI_{t-2}+\alpha_4 OI_{t-3}+\alpha_5 OI_{t-4}+\varepsilon_t$ where R_t is the current stock return of the individual stock, and OI_t is lagged order imbalance at time t for each individual stock. Panels A, B and C present the results in 5, 10 and 15 minute interval respectively. The average coefficients are multiplied by 10^9. *, ** and *** indicate significance at the 10, 5 and 1 percent levels respectively.*

Our empirical results from LBO market are consistent with Chordia and Subrahmanyam (2004) information overweighing argument. We employ a time varying GARCH to examine dynamic relation between volatility and order imbalance. The empirical results are reported in Table 3. We expected a positive relationship between order imbalance and volatility. However, our empirical results show a different picture. At the 5% significant level, only 12.3%, 6.17%, and 1.23% of order imbalance variables have significant positive impact on volatility for 5-min, 10-min, and 15-min interval respectively.

Table 3: Dynamic Volatility-Order Imbalance GARCH(1,1) Relation

	Percent positive and significant	Percent negative and significant
5-min interval	12.30%	1.23%
10-min interval	6.17%	2.47%
15-min interval	1.23%	1.23%

This table shows the regression estimates of the equation: $R_t = \alpha + \varepsilon_t \ , \varepsilon_t / \Omega_{t-1} \sim N(0, h_t)$, $h_t = A + Bh_{t-1} + C\varepsilon_{t-1}^2 + \gamma * OI_t$ where R_t is the return in period t, and is defined as $\ln(P_t/P_{t-1})$, OI_t is the explanatory variable, order imbalance, γ is the coefficient describing the impact of order imbalance on stock volatility, ε_t is the residual value of the stock return in period t, Ω_{t-1} is the information set in period t-1.

We explain the empirical results by market makers behaviors as follows. Market makers have a good capability to mitigate volatility during secondary market making. While in an LBO announcement, discretionary investors try to take advantage of the information. Market makers have sufficient inventories on hand to stabilize the market.

Given the significantly positive relation between contemporaneous order imbalance and returns, we develop an intra-day trading strategy based on order imbalances. First, we trim off 90% noisy trades. Then, we buy at the ask when there is a positive order imbalance, and sell at a negative imbalance. The performances show negative average daily return of -0.017, -0.018, and -0.017 respectively for 5-, 10-,

and 15-min time intervals on quotes. We perform three hypothesis tests to evaluate this strategy. First, we use the z-test presented in Panel A of Table 4 to examine whether the trading strategy can earn a positive return. We cannot reject the null hypothesis. Second, we use a paired t-test in Panel B of Table 4 to test whether our strategy can beat the original open-to-close return. Obviously, the strategy is unsuccessful in beating the original open-to-close return (the p-value of 0.0001, 0.0001, and 0.0002 respectively for 5-, 10-, and 15-min interval). Finally, we use another paired t-test to examine the difference between returns of the three intervals. Panel C of Table 4 shows the p-values of each interval equal 0.4673, 0.6918, and 0.6274 respectively. Thus, we cannot find any significant difference among the three strategies.

Table 4: Trading Profit under the Basis of Quote price

Panel A: Returns compared with zero			
	Mean		P-value
5-min return strategy	-0.017		0.9999
10-min return strategy	-0.018		0.9998
15-min return strategy	-0.017		0.9997
Panel B: Returns compared with returns of buy-and-hold strategy			
	Mean		P-value
Original open-to-close returns	0.0099		
5-min return strategy	-0.0170		0.0001
10-min return strategy	-0.0183		0.0001
15-min return strategy	-0.0174		0.0002
Panel C: Differences in returns among the three intervals			
P-value	5-min return	10-min return	15-min return
5-min return			
10-min return	0.4673		
15-min return	0.6918	0.6274	

We define μ_i as the trading strategy return. *i denotes 5-, 10-, and 15-min intervals* *The Panel A specification is:* $\begin{cases} H_0 : \mu_i \le 0 \\ H_1 : \mu_i > 0 \end{cases}$.

The Panel B specification is: $\begin{cases} H_0 : \mu_i \ge \mu_0 \\ H_1 : \mu_i < \mu_0 \end{cases}$ *where* μ_0 *is the original open-to-close return .*

The Panel C specification is: $\begin{cases} H_0 : \mu_i = \mu_j \\ H_1 : \mu_i \ne \mu_j \end{cases}$, $i \ne j$

In addition, we modify the imbalance-based trading strategy on trade price. We earn an average daily return of 0.0048 0.0044, and 0.0034 respectively for 5-, 10-, and 15-min intervals. Obviously, the strategy on trade price is better than on quote. We perform three hypothesis tests to evaluate this strategy. The z-test reported in Panel A of Table 5 shows the p-values in 5-, 10-, and 15-min intervals are 0.0724, 0.1750, and 0.2553 respectively. We find that at 10% significant level, the 5-min trading strategy implemented by trade prices is able to earn a significantly positive return. Similarly, we use a paired t-test to investigate whether our strategy, after switching from quote prices to trade prices, can beat the original open-to-close returns. The results are presented in Panel B of Table 5. The one-tail p-values are 0.1675, 0.2170, and 0.1181 respectively for 5-, 10-, and 15-min intervals, respectively. We cannot reject the null hypothesis.

Finally, we test whether this strategy brings significantly different profits among 5-, 10-, and 15-min intervals, after switching quotes prices to trade prices. The two-tail p-values of the t-test in Panel C of Table 5 display 0.9466, 0.7622, and 0.8394, meaning that there is no significant difference among the three intervals.

Table 5: Trading Strategy under the Basis of Trade Price

Panel A: Returns compared with zero			
	Mean		P-value
5-min return strategy	0.0048		0.0724
10-min return strategy	0.0044		0.1750
15-min return strategy	0.0034		0.2553
Panel B: Returns compared with returns of buy-and-hold strategy			
	Mean		P-value
Original open-to-close returns	0.5264		
5-min return strategy	0.0048		0.1675
10-min return strategy	0.0044		0.2170
15-min return strategy	0.0034		0.1181
Panel C: Differences in returns among the three intervals			
P-value	5-min return	10-min return	15-min return
5-min return			
10-min return	0.9466		
15-min return	0.7622	0.8394	

We define μ_i as the trading strategy return. *i denotes 5-, 10-, and 15-min intervals* *The Panel A specification is:* $\begin{cases} H_0 : \mu_i \le 0 \\ H_1 : \mu_i > 0 \end{cases}$.

The Panel B specification is: $\begin{cases} H_0 : \mu_i \ge \mu_0 \\ H_1 : \mu_i < \mu_0 \end{cases}$ *where* μ_0 *is the original open-to-close return .*

The Panel C specification is: $\begin{cases} H_0 : \mu_i = \mu_j \\ H_1 : \mu_i \ne \mu_j \end{cases}$, $i \neq j$

CONCLUDING COMMENTS

Previous literature suggests that information asymmetry plays an important role in the LBO process. There are two main theories to explain the LBO transactions. First, LBOs create real wealth gains and improvements in operating performance, perhaps because of a more efficient ownership structure and allocation of residual claims under private ownership. Second, LBOs mainly effect wealth transfers from bond-holders or tax authorities to shareholders, or transfers from selling stockholders to manager-insiders rather than creating wealth. Stockholders in the target firms often enjoy high returns after the LBO process. In addition, evidence shows that order imbalance is a good indicator to capture some information asymmetries. The central purpose of our study is to investigate whether order imbalance is a good indicator to forecast stock price movements on the LBO announcement day.

We collect the LBO firms from 1998 through 2007, including 99 samples. Following Chordia and Subrahmanyam (2004), we perform two OLS regression models, with and without contemporaneous order imbalances. From the unconditional lagged return-order imbalance OLS model, our result is consistent with Chordia and Subrahmanyam (2004). The lagged-one imbalances have a positive impact on returns, but the predictive powers of lagged-one imbalances on returns in our results are lower than their findings.

We find a positive relation between contemporaneous order imbalances and returns, which is consistent with Chordia and Subrahmanyam (2004). After controlling for contemporaneous order imbalance, lagged order imbalances are negatively related to current price movements. This result is also consistent with Chordia and Subrahmanyam (2004).

From the volatility-order imbalance GARCH (1,1) model, our result shows that the relation between volatility and order imbalances is insignificant. We infer that market makers have good capability to mitigate volatility either from accommodated inventory or inside information.

Finally, we develop an imbalance based trading strategy. We use two definitions of prices, quote prices and trade prices, to implement our strategy. Only the return earned by our strategy implemented by trade prices is significantly positive at 10% significant level, and neither beats the original open-to-close return.

REFERENCES

Achleitne , A-Kristin., R. Braun, B. Hinterramskogler and F. Tappeiner (2012)"Structure and Determinants of Financial Covenants in Leveraged Buyouts," *Review of Finance* , vol.16 (3),p.647-684.

Alperovych. Y., K. Amess and M. Wright (2013) "Private Equity Firm Experience and Buyout Vendor source: What is their impact on efficiency? " *European Journal of Operational Research,* vol 228(3-1, August) , p. 601–611.

Arthur, W., and I.Welch (1993) "Bondholder Losses in Leveraged Buyouts," *The Review of Financial Studies,* vol.6(4), p. 959-982.

Baran, L.C., and T.H.D. King (2010) "Going Private Transactions, Bondholder Returns and Wealth Transfer Effects," *Journal of Banking & Finance,* vol. 34(8, August), p.1856-1872.

Brown, P., D.Walsh and A. Yuen (1997) "The Interaction Between Order Imbalance and Stock Price," *Pacific-Basin Finance Journal*, vol.5(5, December), p.539-557.

Chen, C., and C. Wu (1999) "The Dynamics of Dividends, Earnings and Prices: Evidence and Implications for Dividend Smoothing and Signaling," *Journal of Empirical Finance*, vol. 6(1 ,January), p.29-58.

Chou, D.W., M.Gombola and F.Y.Liu (2006) "Earnings Management and Stock Performance of Reverse Leveraged Buyouts," *Journal of Financial and Quantitative Analysis*, vol.41(2 ,June) ,p.407-438.

Chordia, T., R.Roll and A.Subrahmanyam (2002) "Order Imbalances, Liquidity, and Market Returns," *Journal of Financial Economics*, vol.65(1,July), p. 111-130.

Chordia, T., and A.Subrahmanyam (2004) "Order Imbalances and Individual Stock Returns: Theory and Evidence," *Journal of Financial Economics,* vol.72(3 ,June), p. 486-518.

Cumming, D., and S. Zambelli (2010) "Illegal Buyouts," *Journal of Banking & Finance,* vol.34(2 ,February), p.441-456.

Degeorge, F., and R.Zeckhauser (1993) "The Reverse LBO Decision and Firm Performance: Theory and Evidence," *Journal of Finance,* vol.48(4,September), p.1323-1348.

Foster, D.F., and S. Viswanathan (1994) "Strategic Trading With Asymmetric Information Traders and Long-Lived Information," *Journal of Financial and Quantitative Analysis,* vol.29(4,December), p. 499-518.

Grossman, S., (1976) "On the Efficiency of Competitive Stock Markets Where Traders Have Diverse Information," *Journal of Finance*, vol.31(2), p.573-85.

Holden, C., and A. Subrahmanyam (1994) "Risk Aversion, Imperfect Competition, and Long-Lived Information," *Economics Letters*, vol.44(1, February), p. 181-90.

Ippolito, R.A., and W.H. James (1992) "LBOs, Reversions and Implicit Contracts," *Journal of Finance*, vol.47(1,March), p.139-167.

Kaplan, S., (1989) "Management Buyouts: Evidence on Taxes as a Source of value," *Journal of Finance*, vol.44(3, June), p.611-632.

Kyle, A.S., (1985) "Continuous Auctions and insider Trading," *Econometrica,*vol.53(6 ,November), p.1315-1335.

Lee, C.M.C., amd M.J. Ready.(1991) "Inferring Trade Direction From Intraday Data," *Journal of Finance*, vol.46(2,June), p. 733-747.

Llorente, G., R Michaely, G. Sarr, amd J. Wang (2002) "Dynamic Volume-Return Relation of Individual Stocks," *Review of Financial Studies*, vol.15(4), p.1005-1047.

Man, K.,and C. Chen (2009) "On a Stepwise Jypotheses Testing Procedure and Information Criterion in Identifying Dynamic Relations between Time Series," J*ournal of Data Science*, vol.7, p. 139-159.

Muscarella, C.J., and M.R. Vetsuypens (1990) "Efficiency and Organizational Structure: A Study of Reverse LBOs," *Journal of Finance*, vol.45(5, December), p.1389-1413.

Palepu, K.G., (1990) "Consequences of Leveraged Buyouts," *Journal of Financial Economics*., vol.27(1, September), p. 247-262.

Wang, J., (1993) "A model of Intertemporal Asset Prices Under Asymmetric Information," *Review of Economic Studies*, vol.60(2), p.249-282.

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OPERATIONAL RISK ANALYSIS OF INDUSTRIAL SMALL AND MEDIUM ENTERPRISES

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ABSTRACT

This paper develops a quantitative analysis of operative risk. We model the volatilities of major financial indices Chemicals Industry for the period 2000-2009. The model uses an Analytical Hierarchy Process (AHP), a multicriterio technique, to identifying the weight of major financial indices: profitability, indebtedness, liquidity, efficiency and viability. Next, we set up an operative risk measure capturing the whole Industry indices. It becomes the risk measurement benchmark to settle level business risk by a membership function which qualitatively sorts as severe, moderate or low. The model uses time series analysis to predict industry ratios. We use a linear programming model and choose the method that produces the minimum forecast error. Last, we project ratios and their volatility. We use business information issued by the Annual Manufacturing Survey 2010, and information of the 5000 Money Magazine companies.

JEL: C61, C32, D81

KEYWORDS: Operational Risk, Modeling, AHP, Time Series

INTRODUCTION

According to the Joint Industrial Opinion Survey —JIOS— Antioquia industries represents 20% of the industry totals in Colombia and of 32% of non-traditional exports. Antioquia assembles 141,424 employees out of a total of 641,446. Thus, they represent 22% of people employed in domestic industry, even though Antioquia's population represents 13% of the country's total. On the other hand, Antioquia's imports show great growth: U.S. $ 4,844 million, and a contribution of 11.9%. The most relevant data comes from non-traditional exports, which increased by U.S. $ 4,501 million, up to 31.1%.

The National Association of Financial Institutions showed the results of the "Great SME Survey" for the first half 2010 (ANIF, 2011). The survey was conducted among 1,546 entrepreneurs from different sectors of the Colombian economy: industry, trade and services. The main focus was the current status of the industry and its projections. For 41% of those surveyed, the economic situation improved during the second semester of 2009 compared to the same period in 2008. Chemical companies and printing and publishing companies showed the highest growth according to the views presented. Metal and rubber and plastic companies had the lowest favorable opinions filed.

A study of SME competitiveness in the region recorded the lack of continuous recording of accounting and financial information as a weakness Restrepo M J. (2009). Many studies aimed at analyzing the companies and sectorare based on financial diagnoses. But. there are few studies with the purpose of determining and measuring risk associated with the company's activity. F. Celaya P. & Lopez (2004).

Financial risk modeling for companies and large corporations is widely addressed, particularly LDA methods (Loss Distribution Approach). It shows a high degree of acceptance in modeling loss distributions, which is basic for developing the matrix proposed by Basiles. The following is a

chronological list of the authors studied: Restrepo & Medina (2012); Aue & Kalkbrener (2007); Akkizidis & Bouchereau (2006), Dutta & Perry (2006); BÖcker (2006); Medina (2006); NeŠlehová et al. (2006); Chernobai & Rachev (2006); Degen et al (2006); Shevchenko & Donely (2005); Frachot et al (2004); Frachot et al (2003); Frachot et al (2001); Cruz (2002), Lee (2001), but the case of risk quantifying SMEs, as indexed cases are few.

This paper presents a simple scheme for computing business risks in SMEs by calculating the volatility of major financial indices. Next, we develop an AHP analysis, and use time series to predict expected operational and financial risks. The proposed model identifies total risk as a convolution of operational and financial risks. We assess a weighted average of profitability, efficiency, viability, liquidity and debt indices. While "traditional financial indices techniques present major limitations for decision making, they are widely used because they allow for comparisons and analysis of trends in business performance. In addition, they allow for comparison between results and standards measurements which may be the target or averages of the company or industry." Restrepo M J. (2009).

The proposed method allows for determining consistency over time, and the industry's ability to generate high returns and mitigate overall risk. Likewise, the obtained measurement for industrial risk becomes a benchmark for settling the risk that one particular business expects to face. Companies can show high performance in certain periods, and low performance in others. This is called consistency of risk indices. When the company performance has a random behavior of indices that explain their overall risk, greater uncertainty is involved in the estimation of future performance. Bouchaud & Potters (2003, Page 11) argue that "The statistical approach consists in drawing from past observations some information on the frequency of possible price changes. If one then assumes that these frequencies reflect some intimate mechanism of the markets themselves, then one may hope that these frequencies will remain stable in the course of time."

In this paper, we measure the risk for Colombian SMEs in the Chemical industry during the period 2000-2009. In the first part, we discuss literature related to the risk measurement approach for SMEs, and the theoretical framework of the hierarchical analysis technique. In the second part, we mention the data and methodology used to measure the volatility of indices, and carry out the time series analysis to predict indices and evaluate the risk level that these companies take. Finally, we present the main results for the chemical industries, determine the expected risk level, present some limitations of the model, and propose future research.

LITERATURE REVIEW

Risk Definition

The Basel Committee on Banking Supervision (2003) states that risk analysis can be defined as a systematic use of available information to discover the frequency with which some events may occur, and the scale of its effects. Castillo M. (2008) defines operational risk as the possibility of financial losses in in firms because of events associated with failures or shortages. These financial losses can emerge from decision making or business tactics or strategies, internal employees or people somehow related to the company, the technology used orexternal events, including legal risk. The cited author considers no losses resulting from unexpected changes in the political, economic and social environment.

Restrepo and Medina (2012) define risk as the possibility for an event to occur, and the impact or negative consequence derived from it. They state that a company, in its life cycle, can go through operational failures in the execution of its ordinary course of business. Finally, they conclude that operational risk is latent in every activity of any company or organization.

Jorion (2000) defines risk as "the volatility of expected results, generally expressed in the value of interest assets or liabilities". Large companies usually classify risk in four pillars or categories: credit risk, market risk, strategic or business risk, and operational risk. Many entrepreneurs associate risk with negative events: the case of not covering the fixed costs in a given period. However, by analyzing risk, opportunities for improvement can be found, since risk fosters the exploration of all the possible results deriving from an event considered unfavorable.

Risk Variables

For Basel, risk is generally limited exclusively to a financial company's main activity. This concept is generally considered to be true in the business world. However, real economy companies, particularly SMEs, face several risks associated with their course of business. These companies need to identify and manage risk actively to clear the way towards achieving their goals.

For financial institutions, taking risks is a business opportunity. It means managing risks by understanding and controlling them in order to turn them into other risks that can be taken or transferred. De la Fuente and De la Vega (2003) state that most non-financial companies do not use risk management as an opportunity to generate profits because of the lack of techniques that would allow them to manage risks as financial institutions. These two facts make risk management through banks more convenient and comfortable, at different levels, for said companies.

Medina (2006) insists that all investment, financing and dividend-related decisions affect all business units, such as human talent, quality, technology, market, production, etc. Moreover, pressure increases as a result of the changing complexity of business deriving from laws, the influence of other industries and countries, changes in the international monetary system, economic trends, socio-political conditions, and so on.

We mark out four different types of risk, as described below. The so-called business risk associated with an external incident or event that prevents the company from reaching its goals is not considered. This paper focuses on the quantification of operational risk to greater detail. Several authors, such as M. Castillo (2008), Jorion (2000), JP. Morgan (2011), Medina (2006), and Sturm P. (2013) agree on the following classification:

For the purposes of this paper, financial risk is associated with cash flow and a company's inability to fulfill its obligations. This risk is related to the environment of financial transactions, which includes credit risk related to borrowers, and market risk of the investment portfolio. Other types of risk may be included: market price variations of goods and services provided, exchange rate risks, financing costs, liquidity mismatches of liabilities, and commitments and investments within deadlines of assets. In general, all risks offer the possibility of being modeled and managed with techniques developed in the financial world.

Operational risk includes all risks associated with errors or shortcuts in the production line, commercial area, accounting, and internal processes required to perform the ordinary course of business. These risks arise from possible errors in operations performed by the staff, a flawed definition of programs, and information and communication technologies, energy source crashes, etc. Likewise, other types of risks are included, such as delays in production, marketing, supply and entry of merchandise and raw materials, fraud both internal and external, lack of employees, etc.

High severity risks are circumscribed to those risks associated with possible losses derived from high-impact external events that take place rarely, such as strikes, riots, political events and acts, weather

conditions, among others. Modeling and managing this type of risk is essential for business continuance. The low probability, but the high impact of this type of risk may bring terrible consequences to the sustainability of the business.

Reputational Risks include all risks derived from possible violations of the laws, policies and standards of national and international organizations, as well as the lack of good practices related to social responsibility, and alterations or lack of awareness of rules and practices that affect business recognition. In short, in risk management, a company's main concern lies in identifying and classifying a subjective group of risks. For example, for travel agencies, the weather represents a critical factor for success. Therefore, it would be an operational risk, not a high severity risk, as it might be for an industrial company that loses its merchandise because of a tornado.

Operational, Financial and Total Risk

This study follows the approach of Celaya Figueroa (2004), which considers that these risks are derived from a company's business strategies and tactics, and the company's relation to the business environment. Operational risks represent the lack of resources in the company to cover fixed and production costs, as well as general costs. Financial risks point to the possibility of not facing the overload associated to debt, while total risk is considered the convolution of the latter two.

This paper defines operational risk from the financial and accounting viewpoint, where operational expenses are divided into fixed and variable expenses. Fixed expenses do not depend directly on the business operation volume. The key driver depends on the manufacture and sale of merchandise, but causation and payment are events that do not depend on income. Production and accounting income are reduced to a product of expenses. Operational risk is defined as a linear weighted average of the profitability, efficiency and sustainability indices

Financial risk, is defined as the probability of occurrence of an event with negative financial results for the company. The general idea includes the possibility for financial results to be above or below estimates. This risk must include the fact that investors may take positions contrary to market movements, which involves the possibility of profit or loss according to the investment strategy.

Some authors argue that this type of risk is the consequence of uncertainty of financial operations, which in turn, is derived from volatility of financial and credit markets. Meanwhile, Mascareñas (1998) holds that financial exposure refers to uncertainty associated with investment profitability derived from the possibility of the company's not fulfilling its financial obligations: payment of interest and amortization of debt. In other words, financial risk has one single cause: fixed financial obligations assumed by the company.

Similarly, Cazorla (2004) points out that, in the framework of SMEs that do not participate in the stock exchange, entrepreneurs' reluctance to issue shares is justified because of the loss of control over the entry of new shareholders. This is why SMEs operate outside financial markets. Hernández (2004) reaches the same conclusion.

Under the above premise, this paper approaches financial exposure from the viewpoint of five first-level indicators: liquidity, indebtedness, profitability, efficiency and business viability. Likewise, this paper is based on 20 second-level indicators to assess and quantify risks for Small and Medium Enterprises. Assessment of volatility of said financial indicators is used. The techniques of Analytic Hierarchy Process and Time Series Analysis are also used to classify the importance of the indicators, and project them to explain and quantify financial risk later.

Hierarchical Process Analysis

Analytic Hierarchy Process (AHP) is a widely used technique for analyzing multi-criteria decisions. Saaty, T.L. developed AHP in 1970, and since then, this technique has been widely studied, and made more sophisticated.
It is specifically used for team decision-making, and is widely accepted in a large variety of multi-criteria decisions, as well as in business, industry, health, education, the government, and so on.
Vadiya & Kumar (2006) present a paper where they list over 150 instances of AHP application, 27 of which present reviews of this technique. This paper presents a succinct theoretical reference of AHP, thus becoming a guide for researchers and experts of this technique. Likewise, (Zahedi, 1986) reviews AHP and its applications to diverse decision-making problems. He also addresses some of the main reviews and extensions of the technique.

Haas & Meixner (2012) argue that AHP is used to aid many decision-makers, both in the government and corporations, in various problems that involve decisions, such as: choosing a telecommunications system, establishing a drug policy, selecting a product marketing strategy, etc.

Thomas (2000) states that credit and behavioral scoring help organizations decide whether or not to grant credit to consumers who apply for it. Surveys, both statistical and operational, are the means to support these decisions. He also discusses the need to incorporate economic conditions of borrowers into the scoring system. In this way, systems could change from estimating the probability for a consumer to default to estimating the benefits derived from the loan for the organization.

In the case of risk estimation, Saaty (1987) shapes the way that risk and uncertainty can be faced through AHP, a new approach to index measurement. It is important to clarify that, instead of proposing a "correct" decision, AHP helps decision-makers find the one that best adjusts to their goal and understanding of the problem. AHP provides an easy to understand, rational and complete framework to organize a problem with multi-criteria decisions. This enables representation and quantification of variables, and allows for linking such variables to global goals, as well as evaluating different solutions.

AHP experts first break down the decision problem into a hierarchy of secondary, less complicated problems. Each can be analyzed on its own. The basis for the hierarchy makes it possible to share any opinion about the problem characteristics, be it tangible or intangible, correctly or almost assessed, correctly or incorrectly understood. That is, any situation that can be applied to the solution.

Assembly comes after the hierarchy. Decision-makers methodically estimate the various foundations for comparison by pairs, and place the impact of a factor above others in the hierarchy. When comparing, AHP users can use concrete variable data. Judgment on the meaning and relative importance of the variables is generally used. The basis of the AHP technique is that human judgment, not only underlying information, can be used in evaluations.

AHP translates these evaluations into numerical values that can be compared and developed in every problem range. For each hierarchy item, a numerical weight or priority is determined, which often generates different and uncountable factors to be compared among themselves in a rational and coherent way. This feature distinguishes AHP from other decision-making techniques.

In the final stage, each decision alternative will have a calculated numerical priority. These numbers represent the relative ability of these alternatives to achieve the decision's goal. For this reason, they allow for a direct consideration of the innumerable courses of action. In short, AHP is a technique to quantify experts' opinions or judgments on the relative importance of each criterion, generally in conflict with one another, used in the complex decision-making process.

It consists of eight stages:

1. Breaking down the decision problem into a hierarchy of components related to one another by determining: (a) the general goal, (b) criterion (i = 1, 2, ... m), and (c) the possible alternatives (j = 1, 2, ... n).

Steps 2-5 converge into a nested loop for each "m" in the judgment criteria involved.

2. Developing the pair-wise ranking matrix of the alternatives for each criterion. It is necessary to establish the degree of relative importance of the alternatives under study.

The degree is established through the following scale: 1 = indifferent, 3 = moderately preferred, 5 = strongly preferred, 7 = very strongly preferred, 9 = extremely preferred. When intermediate values such as 2, 4, 6, 8 arise, there is no incoherence in the model, even for a reciprocal degree of preference, such as 1/9, 1/7, 1/5, 1/3, among others. These are likely to occur when the second alternative presents a degree of preference above the first one. The main diagonal takes the value of 1 as a result of the comparison of alternatives among themselves.

3. Developing the MCN-normalized matrix by dividing each element of the comparison matrix column cells by pairs by the sum of each column.

4. Developing the priority vector for each criterion by averaging out each MCN row. This vector, whose content is the average per row, represents the priority vector of each alternative with respect to the criteria considered.

5. Determining consistency of opinions used in the pair-wise comparison matrix through the Coherence Relation, CR. When the CR value is below 0.10, it is considered acceptable. CR values above 0.10 show that the opinions and judgments must be reconsidered. In this paper, the model proposes some fixed tolerance margins, and a traffic light indicates the CR. When it turns red, it means that it is necessary to redefine opinions and judgments. Yellow stands for a warning of proximity to the border. It means a checkup would be advisable, but not necessary. Green shows the consistency of judgments and opinions of the pair-wise comparison matrix.

6. Collecting the results obtained, and summarizing them in the MP-priority matrix, which presents the alternatives in rows, and the criteria in columns, after the nested cycle of steps 2, 3, 4, and 5 has been completed for all criteria.

7. Implementing the pair-wise comparison criteria of the matrix by using the method described in the alternatives of 2, 3, and 4.

8. Lastly, developing a global priority vector by multiplying the criteria priority vector (7) by the priority matrix for each alternative (6).

For each row of the pair-wise comparison matrix, the weighted sum is obtained based on the sum of the value of each alternate priority cell for each line. Then, the weighted sum is divided by the alternate priority, and the average of the result of step (2) — λ— as well as the calculated consistency index for each alternative are fixed. The RI value is found using the random data in Table 1.

To determine the Consistency Index, CI, Equation 1 is used.

$$CR = CI/R \quad (1)$$

Table 1 Random numbers to Find out The RI

Total Alternatives (n)	Random Index
3	0.58
4	0.90
5	1.12
6	1.24
7	1.32
8	1.41

This table represents the random numbers used to find the consistency index for each alternative.

AHP Limitations

Wang et al (2008) found that traditional AHP only allows for comparing a limited number of decision alternatives, usually not above 15. When there are hundreds or thousands of alternatives to compare, the pair-wise comparison model used by the traditional AHP is unfeasible. For these cases, the author proposes an integrated AHP-DEA method, and illustrates it in the risk analysis and evaluation of bridges, where maintenance priorities must be determined for hundreds or thousands of structures.

DATA AND METHODOLOGY

This paper presents a method to quantify business risk in SMEs by calculating volatility of the main financial indices. It is developed based on the AHP technique, and uses time series to predict expected operational and financial risk. The model is applied in the chemical products sector, the fastest-growing sector in Colombian industry, according to a study that measures business perception through surveys carried out by Encuesta Anual Manufacturera 2011 (Annual Manufacturing Survey of 2011).

The risk faced by SMEs depends on the random behavior of their financial indices. The goal of this paper is to measure the industry's volatility indices by using historical data from 2000-2009. The commercial information in Encuesta Anual Manufacturera of 2010 is used. This survey is late by two years. Therefore, information available for 2013 has partial data for 2011, which are not sufficient for modeling. Since the data obtained through the model are sector data, they become the standard measure or reference point to describe and quantify risk in a particular chemical sector company.

The indices that best explain operational risk are summarized in Table 2. For each major index, the level-two indicators that best explain them are defined. Column 2 in this table displays a code of the indicators' names for later use in the results presented in Table 7.

To quantify Operational Risk, *OR*, through the financial indicators presented in Table 2, Equation 2 is used.

$$Ro = \sum_{j=1}^{m} \sum_{i=1}^{n} Wj\, Xi \qquad (2)$$

Where:

J = 1-5 represent the level-one indices
I = 1-20 represent the level-two indices summarized in Table 1

The database takes the financial indicators of the industry within the period 2000-2009. The average and the annual growth rate are estimated. For risk measurement, we use the volatility of each type-I index, where 1 = 1-5 main units, and J = 1-20 secondary units. Then the analysis is developed based on AHP to quantify experts' opinions about the relative importance of each major financial ratio: profitability,

indebtedness, liquidity, efficiency and viability. Later, expected operational and financial risks are predicted through a time series analysis.

To project the expected operational risk through the indices that explain it, we carry out a time series analysis for J = 1-20 secondary units, and for I = 1-5 main units. Then, the corresponding consistency proofs are carried out, and with the aid of a linear programming model, the prognosis method is chosen to minimize the prediction error. The method chosen is applied to project the sector indices, and the indices of a particular company. An Excel matrix is used to evaluate operational risk, which is made up of the weighted average of the two groups of financial indices, and the main (5) and secondary (20) units by the corresponding weight found using AHP.

Table 2: Five Major Financial Indices Level 1 and 20 Secondary Indicators to Explain Operational Risk

Indices	Code Name Ratio
PROFITABILITY	1
Gross Margin (%)	1.1
Operating margin (%)	1.2
Net margin (%)	1.3
Return / Equity (ROI) (%)	1.4
Return of Assets	1.5
EFFICIENCY	2
Asset Turnover (times)	2.1
Portfolio turnover (days)	2.2
Rotation suppliers (days)	2.3
Inventory turnover (days)	2.4
Operating cycle (days)	2.5
INDEBTEDNESS	3
Debt to equity ratio (%)	3.1
Financial obligations / liabilities (%)	3.2
Total Liabilities / Sales (%)	3.3
Current Liabilities / Total Liabilities (%)	3.4
VIABILITY	4
Ebitda (MLL)	4.1
EBITDA / Sales (%)	4.2
Sales / Financial duties (sometimes)	4.3
LIQUIDITY	5
Current ratio (times)	5.1
Acid test (times)	5.2
Working capital (MLL)	5.3

This table shows the five major financial indices used to explain Operational Risk: Profitability, Efficiency, Indebtedness, Viability and Liquidity and the nineteen second- level indicators to explain the major indicators. The Code Name Ratio, will be used in table 7 for results

Table 3 shows values of expert opinions assigned in pair-wise comparisons for level-one indices, namely: profitability (Pro), efficiency (Eff), indebtedness, (Deb), viability (Via), and Liquidity (Liq) using AHP. The values in columns 3 and 4 make it possible to infer an index's relative importance with respect to another. For example, if (Pro) and (Deb) in row 2 are compared, the value of (A-4) is highlighted, which means that (Pro) is more important than (Deb) with an intensity of 4, according to experts' opinions.

The method is carried out for all chosen indicators used to quantify operational risk. In Table 4, the pair-wise comparison, and matrix of available alternatives, MCP, are carried out for each main indicator. The degree is established in the following scale: 1 = indifferent, 3 = moderately preferred, 5 = strongly preferred, 7 = very strongly preferred, 9 = extremely preferred. Then, the normalized matrix, MCN, is carried out by dividing each cell in the comparison matrix column by pairs by the sum of the column. The criterion priority vector is generated by finding the average in each MCN column. This vector, which contains the average per row, represents the vector called Priority Alternative regarding the criteria

considered. The consistency of opinions used in the pair-wise comparison matrix is determined through the Coherence Relation, CR. The CR value is 0.9, in Table 4, under 0.10, which is considered acceptable.

Table 3: Pair-wise Comparisons

	A	B	More Important	Intensify
1	**Pro**	**Eff**	A	4
2		**Deb**	A	4
3		**Via**	B	2
4		**Liq**	A	4
5				
7				
1	**Eff**	**Deb**	A	5
2		**Via**	B	4
3		**Liq**	A	5
4				
5				
6				
1	**Deb**	**Via**	B	9
2		**Liq**	A	2
3				
4				
5				
1	**Via**	**Liq**	A	7
2				
3				
4				

This table shows the expert judgment values assign by paired comparisons of level 1 indices, namely: Profitability -Pro-, Efficiency-Eff-, Debt -Deb-, Viability-Via- and Liquidity-Liq-, by applying the AHP method, the values in columns 3 and 4 show the importance an indice on another.

After the cycle has been completed for all criteria, the results obtained are collected and summarized in a Priority Matrix, MP. Alternatives are presented in rows, and criteria in columns. For each pair-wise comparison matrix row, the weighted sum is obtained by adding the cells of each alternate priority row. The weighted sum is divided by the alternate priority, and then the mean — λ— is found. The results and calculated consistency index for each alternative are presented in Box 4.

After AHP is executed, the model for each index forecast was developed. A time series analysis was executed for each financial index. In addition, with the aid of a linear programming model on Solver, the value that minimized forecast errors was determined. Once the model that best adjusts to forecasting was identified, the statistical analysis to determine the best adjustment to the time series was begun. Different functions were used for each indicator. Once the best adjustment was identified, we calculated each financial ratio from Table 2.

The analysis time series method applied to the 20 second-level indicators is explained below. The contribution margin is chosen at random to illustrate the process. First, heteroscedasticity is eliminated from the series through an algorithmic transformation, and then the trend graph is analyzed. If the trend in the graph clearly shows a series that does not follow a deterministic trend, it means it is proper to use a linear trend. In this case, a way to estimate the general trend is to suppose that the series evolves slowly over time, and a simple function by intervals could be estimated for a short time.

We have a seasonally adjusted series, and we move on with the selection of the exponential smoothing method. By using Solver, we get the lowest forecast error. Table 5 shows the three methods used to determine the best adjustment to the time series. The single and double exponential smoothing methods were used. The table presents the method's standard error of best adjustment, and the slope obtained with this forecast method. It highlights the mean square error —MSE— with a value of 0.24% for the gross margin forecast (%) by exponential smoothing.

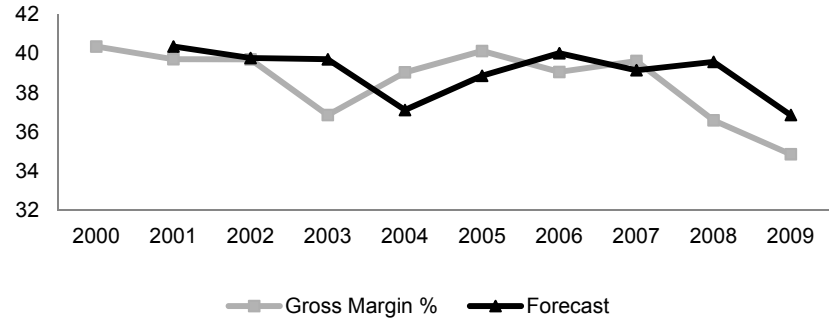
Table 4: Consistency Analysis for Level-One Indicators

AHP	**Pro**	**Eff**	**Ded**	**Via**	**Liq**				
Pro	1	**4**	**4**	**½**	**4**				
Eff	1/4	1	**5**	**¼**	**5**				
Deb	¼	1/5	1	**1/9**	**2**				
Via	2	4	9	1	**7**				
Liq	1/4	1/5	½	1/7	1				
SUM (col)	3.75	9.4	19,5	2.0039	19	1ra	5ª		
Pro	0.26667	0.4255	0.2051	0.2495	0.21053	27%	**27%**		
Eff	0.06667	0.1063	0.2564	0.1247	0.26316	16%	**12%**		
Deb	0.06667	0.0212	0.0512	0.0554	0.10526	6%	**6%**		
Via	0.53333	0.4255	0.4615	0.499	0.36842	46%	**49%**		
Liq	0.06667	0.0212	0.0256	0.0712	0.05263	5%	**6%**		
Lambda	1.0157	1.1525	1.1126	0.9805	1.1434	**5.405**	**Major**		
N	**5**				CI	0.101			
					CR	**9.00%**	**Consistency**		
N	1	2	3	4	5	6	7	8	9
RI	0.	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45
Check	5.405								
l*I		5.405							
			5.405						
				5.405					
					5.405				
A-l*I	-4.4	4	4	0.5	4				
	0.3	-4.4	5	0.3	5				
	0.3	0.2	-4.4	0.1	2				
	2	4	9	-4.4	7				
	0.3	0.2	0.5	0.1	-4.4				
(A-l*I)x	0.01	0.01	0.01	0.01	0.01				
	0.24	0.24	0.24	0.24	0.24				
	0.02	0.02	0.02	0.02	0.02				
	-0.19	-0.19	-0.19	-0.19	-0.19				
	-0.07	-0.07	-0.07	-0.07	-0.07				

This Table presents the consistency analysis results from 5x5 matrixes for level one´s financial ratio: profitability (Pro), Efficiency (Eff) Indebtedness (Deb), Viability (VIA) and Liquidity (Liq). The results shows a CR value of 9%, below 10% which is considered acceptable. The results show the random numbers used to determine the consistency index. Rows 1-5 show the results of paired comparisons using the technique AHP to quantify operational risk. This method is applied consistently to all level 1 financial ratio and their respective explanatory factors for Chemical Industry, Period 2000-2009.

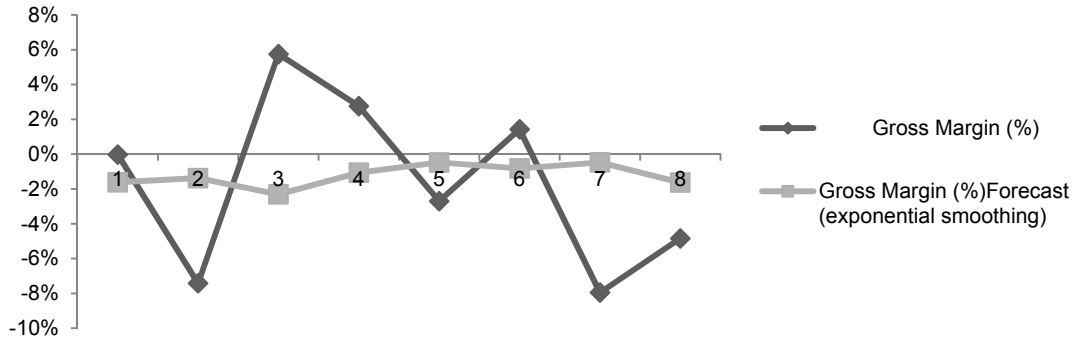
Figure 1 shows the time series trend for real data and gross margin forecasts. Figure 2 shows the time series for the growth percentage of the real data, and the gross margin forecast. The series is seasonally adjusted and the irregular component is removed. Then we complete the data dispersion analysis, and the exponential smoothing method is determined. It presents the lowest forecast error, with MSE = 0.24%.

Figure 1 Real Data vs Forecast for the Time Series of Gross Margin



This figure shows the chart of real data growth vs forecast growth for the time series of gross margin to chemical Industry period 2000-2009.

Figure 2**:** Real Data Percentage Growth vs Percentage Growth Forecast for Time Series of Gross Margin



This figure shows the chart of percentage growth real data vs the percentage growth forecast for the time series of gross margin to chemical Industry period 2000-2009.

The analysis method illustrated along with the gross margin was applied to each of the five major units: profitability, efficiency, viability, indebtedness and liquidity. It was also applied to the 20 indices of secondary units, which are then summarized in an Excel matrix where the OR is calculated both for the sector and for a particular company. The former and the latter are compared in order to establish an operational risk level for the company with respect to the sector. Table 7 shows the results. It is important to point out that the matrix allows for individual comparison of the indices, such as the global value of operational risk in a company as compared to the sector.

RESULTS AND DISCUSSION

Table 6 shows the summarized results for major and secondary units, respectively, both for the sector and the company. Column 2 shows the value expressed by the sector's risk, while the company's risk is in column 3. Columns 4 and 5 reflect the contrast between the industry's and the company's risk, as well as the weighted average of the main five indicators. For example, for the efficiency index, the industry's risk reaches 178%, and the company's, 168.2%. Hence, it can be inferred that the company's risk is 9.8 percentage points lower that the industry's risk.

The data in Table 7 allow us to infer that the company represents an OR of 140.8% as compared to the sector's 145%. This shows that the risk taken by the industry places the company at a lower risk level. Moreover, it presents the risk levels for the main indices. It must be highlighted that the viability indices have a weight of 52.7% for the sector's operational risk calculation, followed by the profitability ratios, with a weight of 22.3%. In the scale, the efficiency indices have a weight of 12.7%, the liquidity indices, of 6.4%, and the indebtedness indices, whose relative weight is 6%.

Table 6: Major Financial Ratios And Their Weighted Using AHP

Name	Industry Risk	Company Risk	Company vs Industry	Weighted AHP
Profitability	97,4%	95,5%	-1,94%	22,3%
Efficiency	178,0%	168,2%	-5,70%	12,7%
Indebtedness	189,1%	191,1%	1,05%	6,0%
Viability	147,8%	143,5%	-2,99%	52,7%
Liquidity	181,5%	174,5%	-3,93%	6,4%

This table shows the risk levels for main indice and is highlight as viability indices, representing a 52.7% weighting in settling operational risk, followed by profitability ratios with a weight of 22.3%, in scale efficiency indices represent a weight of 12.7%, the liquidity of 6.4% and debt closed at 6%. Also shows a Industry and Company Risk and its comparison.

In addition, Table 7 shows the indicator's code to indentify the name given in Table 2 for the 20 second-level indicators. The average weight found using AHP is shown in Table 7. Historical values without average weights are listed in columns 8 and 9, while weighted historical values are in columns 10 and 11. Column 12 shows the risk taken by the company as compared to the industry to which it belongs. For example, the gross margin presents a weighted risk of 18.7% for the company, while for the sector, the value is 19.3%. Based on column 12, it may be inferred that the company takes a lower risk than the sector does by 3.5%. It must be stressed that it is possible to compare the risk that the company faces in relation to the chemical industry for each second-level indicator. The results are shown in column 12.

Table 7: Indices for Five Major Units: Profitability, Efficiency, Viability, Indebtedness and Liquidity

Major Indices Level 1					Secondary Indices Level 2						
Name	Industry Risk	Company Risk	Company vs Industry	Weight AHP	Code Name Ratio*	Weight AHP	Historic Value Risk without Weighted Industry	Historic Value Risk without Weighted Company	Historic Value Risk Weighted Industry	Historic Value Risk Weighted Company	Value Risk Company vs Industry
Profitability	97,40%	95,50%	-1,97%	22,30%	1.1	8,70%	222,60%	215,00%	19,30%	18,70%	-3,50%
					1.2	9,50%	170,80%	165,00%	16,10%	15,60%	-3,40%
					1.3	9,40%	222,40%	225,00%	21,00%	21,20%	1,20%
					1.4	19,90%	205,60%	201,00%	40,90%	40,00%	-2,30%
					1.5	52,50%	194,10%	190,00%	101,90%	99,80%	-2,10%
Efficiency	178,00%	168,20%	-5,66%	12,70%	2.1	30,70%	0,00%	1,00%	0,00%	0,30%	460,50%
					2.2	13,20%	172,60%	155,00%	22,80%	20,50%	-10,70%
					2.3	15,30%	367,70%	350,00%	56,40%	53,70%	-4,90%
					2.4	9,10%	262,80%	250,00%	24,00%	22,80%	-5,00%
					2.5	31,60%	236,50%	224,00%	74,80%	70,80%	-5,40%
Indebtedness	189,10%	191,10%	1,05%	6,00%	3.1	64,50%	183,90%	186,00%	118,60%	119,90%	1,20%
					3.2	8,20%	253,30%	245,00%	20,90%	20,20%	-3,30%
					3.3	13,20%	177,30%	187,00%	23,30%	24,60%	5,30%
					3.4	14,10%	186,80%	187,00%	26,40%	26,40%	0,10%
Viability	147,80%	143,50%	-2,95%	52,70%	4.1	78,20%	137,40%	145,00%	107,40%	113,40%	5,40%
					4.2	12,60%	140,80%	138,00%	17,80%	17,40%	-2,00%
					4.3	9,20%	246,30%	138,00%	22,70%	12,70%	-57,90%
Liquidity	181,50%	174,50%	-3,93%	6,40%	5.1	12,70%	168,00%	152,00%	21,30%	19,30%	-10,00%
					5.2	70,50%	208,30%	204,00%	146,80%	143,80%	-2,10%
					5.2	16,80%	79,60%	68,00%	13,40%	11,40%	-15,80%
Operative Risk	145,00%	140,80%	-3,00%	100,00%	Kind of Risk= minor Industry						

This table shows the Analysis Risk throught Operative Risk Indice for Chemical Industry and Company. It presents the riskiness of first-level financial ratios, industry and company risk and its contrast. Also, show the second-level financial ratios and classified by the weight thrown AHP Techniques for industry and company. The code name radio was defined in table2. In the last line it exhibit the operational risk for company and industry and contrast each other; we conclude the operative risk for company is 140.8, 3% lowest of industry, it is a minor risk for company.

Another example shows that EBITDA has a weight of 78.2% in the viability indices. The acid test has a weight of 70.5% in the liquidity indices. The debt ratio has a weight of 64.5% in the indebtedness indices. The ROA has a weight of 52.5% in the profitability indices, while the volume of assets has a weight of

31.6% in the efficiency indices. Thus, it is inferred that the company has an OR of 140.8% versus the sector's 145%. This means that the risk taken by the industry places the company at a lower risk level.

CONCLUSIONS

We develop a quantitative analysis of operational risk for SMEs. We modeled volatilities of the chemical industry's major financial indices for the period 2000-2009 by integrating 5 first-level financial indices: profitability, leverage, efficiency, viability and liquidity. We used the AHP analysis technique to quantify experts' opinions about the relative importance of every major financial ratio. Then, using time series, we predicted the expected operational and financial risks. This paper determines the operational risk level for the chemical industry through financial indices. Likewise, we highlight the importance or weight of the index groups in their determination, followed by profitability ratios, with a weight of 22.3%. Efficiency indices represent a weight of 12.7% in the scale, while liquidity has a weight of 6.4%. The indebtedness indices, with a weight of 6%, come last in degree of importance.

This study provides a useful tool for SME entrepreneurs for measuring potential risks associated with their business. The study reflects the volatility presented by the chemical industry, with the structure developed over the last decade, in its financial indicators of profitability, liquidity, efficiency, viability and indebtedness, which produces an average risk index of 145%. Meanwhile, the company under study presents a total risk of 140.8%, which is lower than the industry's risk. Likewise, using the AHP technique, we found the weight of the second-level indices. The EBITDA has a weight of 78.2% in the viability indices, whereas the acid test weighs 70.5% in the liquidity indices. The debt ratio has a weight of 64.5% in the indebtedness indices, while ROA weighs 52.5% in the profitability indices. We finally stress how the volume of assets weighs 31.6% in the efficiency indicators.

In addition, we propose a simple measure to evaluate the consistency risk of profitability, since companies may go through periods of high and low performance. Now, since the risk is associated with the industry's ROA random behavior, it is possible to evaluate it by calculating the standard deviation of returns in the period analyzed, and dividing it by the average performance. For the chemical industry, we obtained an ROI value of 29%, and 30% of ROA. Thus, it may be inferred that the chemical industry has a risk of 30% in the profitability behavior.

In this paper we develop a risk analysis for a company, and establish a point of reference for the chemical industry. By applying diverse tools and strategies, it is possible to mitigate operational and financial risks, as well as ROI. Strategies for cost and expense reduction, as well as for performance stabilization are valid.

Risk is attached to any human activity, and industry is not exempt from this reality. It requires leaders and strategies that play an active role in the sustainability of the business. We present a method that is easy to understand and apply to determine operational risk in SMEs. Such risk is attached to a company's dynamics, and its constant interaction with the environment. In this paper, we quantify operational risk in relation to financial indices, which are red flags that may indicate a company's inability to generate cash flow, and cover fixed costs, as well as operational expenses. Quantification also allows for early warnings related to financial risks associated with the likelihood of not covering fixed costs derived from the indebtedness structure, or the company's lack of efficiency in the use of operational resources when they are lower than the industry's average.

From the viewpoint of modeling, this study has limitations that arise from the little historical information of the industry. The records available are only ten years old. If there were an older data base, we would be able to measure leverage and total financing levels. We could thus determine the volatility of these

indices financial risk. However, this approach significantly contributes to developing, understanding and approaching financial and commercial risk quantification of small and medium entrepreneurs.

We propose an analysis of operational risk for SMEs by modeling the impact of economic factors such as the exchange rate, producer price index, and consumer price index in order to determine the exposure deriving from international trade dynamics. This requires indentifying the stochastic processes of the variables, and incorporating such processes into financial forecasts of companies.

REFERENCES

Akkizidis, L., & Bouchereau, V. (2006). Guide To Optimal Operational Risk & Basel II. Auerbach Publications.

Aue, F., & Kalkbrener, M. (2007). *Lda At Work.*

ANIF. (20 de Marzo de 2011). www.anif.co. Recuperado el 20 de Marzo de 2001, de http://anif.co/investigaciones-especiales

Bouchaud, J.-P., & Potters, M. (2003). Theory of financial risk and derivative pricing: from statistical physics to risk management. Cambridge University Press. Recuperado a partir de http://books.google.es/books?hl=es&lr=&id=neT6jVyMtlIC&oi=fnd&pg=PR13&dq=Financial+Risk&ots=cPElghi17p&sig=LMYuACdNkrfQ0KkxqavQI4fWwk8

BÖcker, K. (2006). Closed-form approximation for OpVaR when high frequency losses are parameterized by a generalized Pareto distribution (GPD).

BÜhlmann, H. (1970). Mathematical Methods in Risk Theory. Heidelberg: Springer-Verlag.

Castillo M, M. A. (2008). Diseño de una metodologia para la identificación y la medición del riesgo operativo en instituciones financieras. Revista Universidad de Los Andes, 45-52.

Cazorla, P. (2004) Problemática Financiera de la PYME: Análisis teórico de los factores determinantes. IX Foro Iberoamericano de Sistemas de Garantias. Universidad de Almería, Departamento de Dirección y Gestión de Empresas.

Celaya Figueroa, R. y. (Diciembre de 2004). ¿Cómo determinar su riesgo empresarial? Revista Escuela de Administración de Negocios(52), 68-75.

Chernobai , A., & Rachev , S. (2006). *Applying robust methods to operational risk modeling.*

Comité de Basilea de Supervisión Bancaria. (2003). Sanas Prácticas para la Gestión y supervisión del Riesgo Operativo.

Cruz, M. (2002). *Modeling, Measuring And Hedging Operational Risk.*

De la Fuente, L., & De la Vega, G. (2003). La gestión de riesgos en empresas no financieras. Partida Doble, (150), 54-60.

Degen , M., Embrechts , P., & Dominik , D. (2006). The Quantitative Modeling of Operational Risk: Between g-and-h and EVT.

Dutta , K., & Perry , J. (2006). A tale of tails: an empirical analysis of loss distribution models for estimating operational risk capital.

Frachot , A., Moudoulaud, O., & Roncalli , T. (2004). Loss Distribution Approach in Practice.

Frachot , A., Georges , P., & Baud , N. (2003). How to Avoid Over-Estimating Capital Charge for Operational Risk?

Frachot , A., Georges , P., & Roncalli , T. (2001). Loss Distribution Approach for Operational Risk, Documento de trabajo, Credit Lyonnais.

Gitman, L. J. (2003). Principios de Administración Financiera. México: PEARSON EDUCATION.

Gonzales, M. (2004). Analisis del Nuevo acuerdo de capitales de Basilea II. Pyme Risk, Country Risk and Operational Risk. Madrid: Universidad San Pablo CEU.

Haas, R., & Meixner, O. (2012). An Illustrated Guide to the Analytic Hierarchy Process. Retrieved from http://alaskafisheries.noaa.gov/sustainablefisheries/sslmc/july-06/ahptutorial.pdf

Hernández, I. (2004). La Competitividad e Innovación de las Pequeñas y Medianas empresas (PYMES): Una visión institucional desde la mesoeconomía. Revista Javeriana, 20-27.

Jorion, P. (2000). Value at Risk: the New Benchmark For Managing Financialñ Risk. Mc-GrawHill.

Lee, C. (2001). *Lee , Christopher M, (2001). Measuring and Managing Operational Risk in Financial Institutions.* Singapore: John Wiley & Sons.

Medina, S. (Julio de 2006). Estado de la cuestión acerca del uso de la lógica difusa en problemas financieros. (P. U. Javeriana, Ed.) Cuadernos de Administración, 195-223.

Morgan JP. (25 de Abril de 2011). www.jpmorgan.com/pages/jpmorgan. Recuperado el 25 de Abril de 2001, de http://www.jpmorgan.com/pages/jpmorgan

NeŠlehová, J., Embrechts , P., & Demoulin , V. (2006). *Infinite-mean models and the LDA for operational Risk.*

Restrepo M, J. (2009). El Perfil Competitivo de las Pymes de Confecciones del Valle del Aburrá (1 ed., Vol. 1). (T. d. Antioquia, Ed.) Medellín, Colombia: Divergráficas Ltda.

Restrepo M, J. A. (2007). Evaluación Financiera de Proyectos de Inversión. Medellín: TdeA.

Restrepo M, J. V. (Septiembre de 2010). Competitividad y comercio exterior de las Pymes del sector textil-confecciones del Valle de Aburrá: incidencia del tipo de cambio. Revista Virtual Universidad Católica del Norte.

Restrepo, J., & Medina, S. (2012). Estimation of Operative Risk for Fraud in the Car Insurance Industry. Global Journal of Business Research, 6(3), 73–83.

Restrepo, J. A., & Vanegas , J. G. (Diciembre de 2009). Análisis del Perfil Financiero de las Pymes del Valle de Aburra y su acceso al crédito: una aproximación empirica. Ingeniería Industrial Actualidad y Nuevas Tendencias, I(3), 43.

Revista Dinero. (25 de Abril de 2011). 5000 Empresas. Bogotá.

Saaty, T. L. (1987). Risk—Its Priority and Probability: The Analytic Hierarchy Process. Risk Analysis, 7(2), 159–172. doi:10.1111/j.1539-6924.1987.tb00980.x

Shevchenko, P., & Donely, J. (2005). *Validation of the Operational Risk LDA Model for Capital Allocation and AMA Accreditation under Basel II.* . CMIS report number 05/132., ANZ Bank.

Sturm, P. (2013). *How much should Creditors Worry About Operational Risk?* Presentado en CFS Research Conference on Operational Risk, University of Tubingen.

Thomas, L. C. (2000). A survey of credit and behavioural scoring: forecasting financial risk of lending to consumers. International Journal of Forecasting, 16(2), 149–172.

Wang, Y.-M., Liu, J., & Elhag, T. (2008, April). An integrated AHP–DEA methodology for bridge risk assessment. Computers & industrial engineering, 54(3), 513–525.

Zahedi, F. (1986). The analytic hierarchy process—a survey of the method and its applications. interfaces, 16(4), 96–108.

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EXPORT DRIVERS AND BARRIERS: EVIDENCE FROM GHANAIAN PHARMACEUTICAL MANUFACTURING FIRMS

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ABSTRACT

The study is an exploratory study on the state of exports within the Ghanaian pharmaceutical manufacturing industry. Data was obtained from interviews of key managers involved in strategy formulation of 5 exporting pharmaceutical manufacturing companies in Ghana. The study revealed that out of 41 pharmaceutical manufacturing companies in Ghana, only 10 exported their products. Each respondent company indicated exporting less than 20% of total production output mainly to other West African countries. The most important reasons for exporting were to expand markets for their products to fulfil their vision of becoming global, to obtain foreign exchange and to achieve economies of scale. Major barriers faced were multiple product registrations across the West African Region. The companies hoped for more incentives from the Ghana government in the form of tax breaks and lower utility costs to allow expansion of export activities.

JEL: F18, F01, F14, L65, M16, M31, K23

KEYWORDS*:* Export Barriers, Pharmaceutical, Export Destination, Competition, Certification

INTRODUCTION

Pharmaceuticals are an essential part of healthcare delivery; used in prevention, treatment, cure, mitigation of diseases, as well as modification of other lifestyle conditions (Bumpas and Ekkehard, 2009). Drugs are usually the most critical inputs and most important cost driver in hospital management and other healthcare systems (Rodriguez-Monguio and Rovira, 2005; Smith *et al.*, 2009). The global market is highly polarized with Multinational Research-based Companies dominating the sector in terms of global sales and market capitalization, with production of high-value patented products. Nonetheless, some Indian and Chinese manufacturers are rising steadily, recording double-digit growth rates over previous years (Shen, 2008). Developing countries account for less than 1% of the global pharmaceutical market, and the proportion is much smaller for the African continent (Seiter, 2005). African countries are heavily reliant on imported pharmaceuticals, which are supplied mainly by generic companies based in China and India (Advani, 2009).

In spite of the overwhelming dominance of imported products on the continent, there is still a small section of the African pharmaceutical market that is served by local generic drug manufacturing companies, who usually do business on national scale in their home countries, sometimes only limited to particular regions (Seiter, 2005). A survey conducted on 46 Sub-Saharan African countries revealed about 37 countries had such industries and 9 countries had no production capacity at all (African Union Conference of Ministers of Health, 2007). Small developing countries with this kind of limited production capacity have to battle with stiff competition from imported drugs in the face of cost disadvantages attributed to limited volumes, insufficient purchasing power to secure good prices from raw material suppliers, bureaucratic hurdles, high taxes on imported production inputs, corruption, lack of access to financing, and other reasons related to the general business environment (Seiter, 2010). Morgan (1997) shows that when companies are confronted with the decision whether or not to export, they are

generally reluctant to decide in favor of exporting, often deciding to retain their non-exporting status due to perceptions about several export barriers or challenges, some of which Leonidou (2000) indicates could make the task of progressing in the exports difficult. In spite of numerous challenges manufactuirng companies in least developed nations have to face, there are still some Ghanaian Pharmaceutical Manufacturing Companies who have managed to exploit international markets through exports; raising several questions that need to be researched into. Even though the plethora of research on internationalization of Ghanaian Non-Traditional Exports (NTEs) have been conducted by the DANIDA Centre for International Business, and many other researchers, (Abor and Biekpe, 2006; Buatsi, 2002; Hinson and Sorensen, 2006; Kuada, 2005; Kuada and Sorensen, 2000; Wolf, 2007), none touched on exports of manufactured pharmaceutical products. Pharmaceuticals are products that are highly regulated in all countries; it is therefore imperative to investigate the peculiar challenges that confront manufacturers in the industry who have the zeal to export. The purpose of this paper is to analyze the drivers and barriers of Ghanaian pharmaceutical manufacturing companies that have been able to explore or exploit international markets. This will be a major incentive for companies that are contemplating to export as well as policy makers and regulators. The paper contributes to the literature on the pharmaceutical dimension of Ghana's non-traditional exports. The rest of the paper is organized into five sections; literature review, overview of the pharmaceutical manufacturing industry in Ghana, methodology, results and discussion and implication and conclusions.

LITERATURE REVIEW

Despite the prominent role of foreign direct investment for opening up new country markets and tapping into cheap production sites, exporting activities remain an essential element of international trade (Ling-yee and Ogunmokun, 2001). Nelson (2000) defines exporting as a universal business tactic that permits manufacturers and service companies in one nation to sell their products across borders to a foreign country. Joshi (2005) breaks down the word presenting a conceptual meaning as having to "ship" the goods and services out of the "port" of a country, hence the word 'ex-port'. Hill (2003) explains exporting as the simplest way for a business to legally enter a foreign market, and further indicates that the most important distinction from other similar modes of internationalization would be the fact that the company produces all its goods in its home country, and sends it across borders to a foreign country. The concept of exporting being defined in terms of shipping goods overseas into a foreign country has also been repeated by several others (Bertrand, 1989; Morgan, 1997; Dosoglu-Guner, 1999), and is adopted as the working definition for exports for the purpose of this research. Per this definition, all goods are manufactured in Ghana and sold or marketed in foreign countries.

The Organization for Economic Co-operation and Development (OECD) (2009) indicate that the reason that is deemed most important to each firm for exporting may be unique to the firm, and would be largely influenced by the internal and external environment of the firm (OECD, 2009). Cohen *et al.* (2005) and Anderson (2010) have both asserted that the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement creates an opportunity for local pharmaceutical manufacturers to export their products to other least developed nations. On 30 August 2003, two compulsory licensing provisions (Articles 31[f] and [h]) of the TRIPS agreement were waived and by this waiver, the governments of countries with "pharmaceutical manufacturing capacity" could establish compulsory licensing regimes authorizing companies, other than the patent holder, to manufacture lower-cost versions of patented pharmaceutical products for export to eligible importing member countries (WHO, 2005). The products could be exported to other least developed countries with insufficient or no manufacturing capacity for pharmaceutical products (Van Dyck, 2007). No African country has exploited this agreement to the full as yet (Anderson, 2010). Seiter (2010) suggests that pharmaceutical manufacturing companies could use donor-funded programs as a catalyst to export their products. Such funded programs usually require taking part in international bid, after meeting quality standards as part of the pre-qualification process (WHO, 2008). Most of such programs take care of marketing and distribution of the medicines to the customers and

consumers. Thus, the manufacturing company does not have to spend much on marketing and distribution, and has the chance to develop their products in external markets (Macher and Nickerson, 2006). The most notable donor funded programs include the Bill and Melinda Gates foundation's global fund for HIV/AIDs, Malaria, Tuberculosis and Reproductive health, the Global Drug Facility, United Nations Conference on Trade and Development (UNCTAD) and the The US President's Emergency Plan for AIDS Relief (PEPFAR) (Feuer, 2006; WHO, 2008).

Leonidou, *et al*., (2002) posit that in a context where domestic markets are limited, successful firm growth will as a matter of necessity need to be linked to exporting. Anderson (2010) relates this point specifically to local pharmaceutical manufacturing industries asserting that most of them face the threat of extinction, unless they are able to export. It has also been suggested that one way indigenous manfuacturing companies can counter the effects of imports from China and India and remain competitive is to increase intra-regional trade (Macher and Nickerson, 2006; McGuire, *et al*., 2007). Seiter (2005) suggests that intra-regional trade would also allow the companies to make use of the overcapacity that exists in generic product manufacture all over the world.

Distribution refers to all the various channels the goods would have to move through in order to reach the final consumer (Scarborough, 2005). Regardless of the mode used, Chambers and Shaw (2008) indicate that the most crucial step in setting up a distribution network is establishing good relationships with all members, especially through personal connections. Some of the key players in the distribution network include sales representative or commissioned sales agents, wholesalers and retailers. Sales Representatives use the company's product literature and samples to present the product to potential buyers, usually on commission basis, assuming no risk or responsibility and being under contract for a definite period of time (Zuckerman & Biederman, 2000). They may work for more than one firm, but generally they do not handle competing products. Commissioned sales representatives rarely stock products, but orders are usually relayed to the home office and the agent earns a commission or percentage after the customer pays the exporting company.

Nelson (2000) indicates that commissioned agents are generally quite effective when selling high-volume, low-priced consumer goods, although they may be able to undercut distributor prices because they are not charged mark-ups for shipping and other costs. Hessels and Terjesen, (2007) as well as GFP, (2005) caution that the balance of power between exporter and agent intermediaries can be dramatically tilted in favour of the agent, especially if the exporter is selling a product without wide brand-name recognition. Zuckerman and Biederman (1998) suggest that one way of managing is for exporters not to forward all their business to one agent. In addition, all terms and conditions in any contracts must be carefully spelt out under the guidance of an attorney familiar with the laws of that particular country.
Wholesale distributors purchase the merchandise from the manufacturing company and resell at a profit, usually carrying inventory of products so that orders from customers in the foreign country can be supplied immediately. Wholesalers are the most important intermediaries linking manufactures to pharmacists, hospitals and self-dispensing doctors, and are often an important determinant of export success (Morse, 2003; Minh and Kien, 2004; CBI, 2010; Seiter, 2010).

Many companies begin export activities haphazardly, without a good strategy borne from careful planning, market research, and screening markets or options for market entry (Zuckerman and Biederman, 1998). UNCTAD (2004) indicates that one key determinant of export success is the formulation of a good export strategy based on accurate information and proper assessment, which increases the chances that the best options will be chosen, that resources will be used effectively and that efforts will consequently be carried through to completion. Chambers and Shaw (2008) find that having a clear, comprehensive export plan, which covers the products to be selected, countries targeted, customer profile, special challenges pertaining to each market (eg. competition, cultural differences import controls, etc), strategies to address challenges, pricing, export management and operations, personnel and resources, timeframes,

evaluation of results is an important determinant of export success. Muhammed and Hassan (2009) report of Shoham (1996)'s general definition of export performance as the result of a firm's actions in the export markets, and the subsequent classification of more than 50 different dimensions of export performance into two main groups: subjective and objective measures. Leonidou *et al.* (2002) however suggests that the *sales volume, market share, and profit contribution from export activities* are mostly used as the measure of export performance.

Suarez-Ortega (2003) defines export barriers as internal and external factors that dissuade the firm from exporting or hinder its exporting activities. It has been well documented how removal of trade barriers contribute to export success of most industries in different parts of the world (Leonidou, 2000; Easterly and Reshef, 2010; CBI, 2010). Export barriers have been classified from different perspectives, but one major and widely used classification is into *internal barriers* and *external barriers*, with the internal barriers involving organizational resources and capabilities and the external barriers pertaining to country-level barriers (Leonidou 2000; Tesfom and Lutz, 2006).

As nations progressively reduce import duties, non-tariff barriers assume greater importance (Scarborough, 2005). According to Easterly and Reshef (2010), non-tariff barriers are more important determinants of export success for indigenous African companies than tariff barriers. Kaplan and Laign (2005), Seiter (2010) and Anderson (2010) all agree that government procurement policies in most African countries that usually favour domestic producers and severely restrict purchases of imported goods by government agencies also act as strong export barriers for pharmaceutical manufacturing companies. (McCabe, 2009) indicates that official prices for pharmaceuticals could be export barriers in some African countries. Leonidou (2000) uses results obtained from two studies in Cyprus to show other major barriers to exporters including, competition in foreign markets, high risks and costs in selling abroad, and lack of assistance by home governments. In their study of SMEs in the EU, before and after EU harmonisation, Yamin, *et al.*, (2007) indicated that export managers felt the harmonization had reduced the export barriers and provided greater incentive to export. Elbadawi *et al*. (2006), Edwards and Alves (2006), as well as Iwanow & Kirkpatrick, (2007) found that manufacturing exports are limited by declining investment in transport infrastructure, and that improving the quality of domestic transportation infrastructure and the reliability of transport services might improve export performance.

Overview of the Pharmaceutical Manufacturing Industry of Ghana

The Pharmaceutical Manufacturing Industry of Ghana dates back to Pre-Independence years; the first companies were Major and Co, Starwin, and Pharco Laboratories, followed by quite a number of firms, many owned by expatriates including Kingsway Chemists, Netherlands African Manufacturing Company (NAMCO), Danish African Manufacturing Company (DANAFCO), Pfizer, J.L. Morrison and Co., Ghana Drug House Production, Empire Pharmaceuticals, Phemeco, among others. The companies mainly produced tablets, liquid products, ointments and creams for local consumption. Most of the companies folded up, mainly due to the political and economic instability of the last quarter of the 20th century, although some went down as a result of poor succession management, and the inability to adapt to changing times. As at 2012, unpublished records of the pharmaceutical Manufacturing Association of Ghana (PMAG) indicate the sector has about 41 companies, the PMAG considering approximately 20 of them as being "active" manufacturers. The PMAG estimates the sector employs about 5000 people, and supplies an estimated 30 percent of Ghana's total pharmaceutical consumption (also estimated at US$500m). Most manufacturers focus on producing basic Over-The-Counter Drugs, as well as a few prescription-only medications. None of the companies has World Health Organization Pre-Qualification (WHO-PQ) certification.

Phyto-Riker Ghana Limited was established in 1962 as a State-owned Ghana Industrial Holding Corporation (GIHOC), beginning production operations in 1967. However in 1998, the state-owned

GIHOC Pharmaceuticals was acquired by Bermuda-based Phyto-Riker Pharmaceuticals Inc, through a competitive privatization process. The new owners also divested their ownership in 2005, which resulted in Trans-Africa Pharmaceuticals Ltd (TAPCO) acquiring majority shares of 65%, Overseas Private Investment Corporation (OPIC) acquiring 25% shares, and the Government of Ghana retaining 10% shares. The Company is Good Manufacturing Practice (GMP) and ISO 9001-2000 certified, and produces a wide range of essential drugs mainly tablets and oral liquids for use in Ghana and the entire West Africa Sub-Region. (Phyto-Riker Pharmaceuticals Ltd, 2011)

Danadams Pharmaceuticals Limited is a subsidiary of Danpong Group of Companies. The parent company, was established in 1989, but entered into a joint venture with Adams Pharmaceutical Company Limited of China, leading to the construction of a four-million-dollar pharmaceutical manufacturing plant known as Danadams Pharmaceutical Industry Ghana Limited (Danadams). In June 2006, Danpong Group acquired all the shares of the joint venture company, making it a wholly-Ghanaian-owned company. The Company's core business is the manufacture of antiretroviral, anti-malaria, anti-tuberculosis, analgesics and other drugs used for the treatment of opportunistic infections in HIV/AIDS patients. Danadams is currently the only pharmaceutical company producing Antiretroviral Drugs (ARVs) in Ghana and one of just three in West Africa. (Danadams Pharmaceuticals Limited, 2012)

Ernest Chemists Limited started business in 1986 as a sole proprietorship and in 1993 became a limited liability. The company has three business structures; trading, manufacturing and export, operating an extensive network of distribution channels throughout the country. The company began manufacturing operations in 2001 and produces tablets, powders, capsules, oral liquids and suspensions, and medicines for external use over a wide range of therapeutic areas. On single shift basis, the manufacturing plant has the capacity to produce 400 million tablets, 100 million capsules, 300,000 litres or 3,200,000 bottles of oral liquids and 750,000 bottles of dry powder for reconstitution per annum (Ernest Chemists Ltd, 2012).

Intravenous Infusions Limited: The company was established in December 1969 and is located at Effiduasi near Koforidua, and is currently one of only two companies with a manufacturing plant registered by the Food and Drugs Board Ghana for production of Intravenous Infusions, and Small Volume Injections. The company's vision is to be the leading manufacturer and supplier of pharmaceutical and medical products in Africa in the 21st century. Although currently privately owned, the company hopes to restructure towards public listing on the Ghana Stock Exchange in the short term, and to attain ISO 9000 quality standards.

LaGray Chemical Company Limited was incorporated in 2001 but began manufacturing operations in 2007. The company is the only one in West Africa manufacturing Active Pharmaceutical Ingredients (APIs) and designed as a fully integrated company. The company manufactures creams, ointments, tablets, capsules and dry powders for suspension for treatment of infectious diseases including malaria, fungal infections and respiratory tract infections. (LaGray Chemical Company, Official Website). This paper is organized into five sections. The next section reviews the relevant literature on exporting in general and pharmaceuticals exporting in particular. Section three outlines the methodology of the study and limitations of the study. Section four presents and discusses the findings of the study. The final section presents conclusions and implications; we also proffer some suggestions to stakeholders.

METHODOLOGY

This section presents the method which was used in arriving at the finding presented in the next section. This qualitative study utilized the case study approach, focusing on five companies in the pharmaceutical manufacturing industry in Ghana from March to June 2012. Out of the 41 manufacturing companies on the list of Pharmaceutical Manufacturers' Association of Ghana (PMAG), only 10 companies had indicated that they exported their finished products. The 10 companies therefore represented the

population of exporting firms in Ghana. As a small population, we attempted to use the 100 percent as sample but only five were willing to co-operate. The key informant technique, by which people with specialized knowledge about the issue in question are selected for interview, is mainly used in Purposive Sampling (Jankowicz, 2002). By this principle, it was considered that the best respondents to obtain information from would be people in top management positions who were directly involved with strategy formulation regarding export operations in the companies. The final respondents were in the following positions: two Chief Executives, Sales Manager, Marketing Manager and International Business Managers.

Another interview was conducted with the executive secretary of the Pharmaceutical Manufacturers' Association of Ghana (PMAG). Information sought from the Association was on the history of the pharmaceutical manufacturing industry in Ghana, the past and current operations of the manufacturers, the outlook for the industry, and the supportive role of the government for pharmaceutical manufacturing companies. Two interview guides were prepared for the research – one targeted at the manufacturing companies, and the other for the PMAG. The interview guide incorporated both open and close ended questions. Open ended questions were mainly probing, and allowed respondents enough breath to expatiate on points or to correct certain contexts. The close ended questions utilized lists, weighted ranking, quantification, and simple forced-choice 'yes/no' type options. These "forced-choice options" were added to break the monotony of having all open questions, making the discussions more interesting. Nonetheless, all close-ended questions had space for additional comments. Because the research was mainly qualitative, several measures were taken to ensure that responses obtained were valid and reliable. Firstly, responses were obtained from experienced and knowledgeable people.

All respondents interviewed were in senior management positions in their companies, and were directly involved in strategy formulation for exports. Thus, it was considered that the responses they would give to the interviews would be accurate and credible. The questions designed focused on problems best explored by qualitative analytical methods rather than by looking for statistical patterns. Nonetheless, since the five companies used had characteristics that represented almost all the different segments that could typically be encountered in the pharmaceutical manufacturing industry, the findings would have a broader significance than the individual cases from which information were gathered.

RESULTS AND DISCUSSION

This section presents the findings of the study conducted on five exporting pharmaceutical manufacturing companies, in relation to the purpose of the study. The discussion essentially screens responses for similarities or differences and where specific details are identified, they are highlighted. From the interviews, it was revealed that three of the companies studied had been exporting for less than five years, one had been exporting between five and ten years and the last had been exporting for almost two decades. All five companies indicated that the export drive had been continuous since it began.

Drivers of Exporting

The major reasons that inform the decision to export tend to have a strong impact on the level of commitment given to the export drive, the level of resources dedicated, the mode of entry used, and the resulting outcome. For instance, companies that see exporting as a major contributor to company revenue tend to devote more resources, including time, human resources and attention to it (Nelson, 2000). On the other hand, a company that exports only as a secondary activity, possibly to dispose of surplus production or offset seasonal variations in the home country may not devote as much resources (US Department of Commerce, 1998). Respondents were therefore asked to rank up to five major reasons why their companies entered the international markets on a weighted scale; 5 to the most important reason and 1 to the least important reason. The measures were adapted from various authors in the international

marketing literature. Table 1 below presents the mean scores of respondent firms as to the reasons why they engage in exporting.

Table 1: Major Drivers of Companies' Decision to Export

Motivation	Mean Score	Standard Deviation	Variance
Market Expansion	4.80	0.4472	0.200
Fulfilling Company Vision	3.40	1.5165	2.300
Foreign Exchange	3.25	0.5000	0.250
Export incentives	2.50	2.1213	4.500
Economies of Scale	2.20	0.4472	0.200
Specific Demand	1.50	0.7071	0.500
Following Customers	1.00	-	-
Risk Diversification	1.08	-	-
Following Competitors	0.00	-	-
Resource Utilization	0.00	-	-
Market Saturation	0.00	-	-
Unplanned Reasons	0.00	-	-

This table depicts the mean scores, standard deviation and variance of the reasons why Ghanaian pharmaceutical manufacturing firms export; the most important reasons being market expansion and fulfilment of company vision.

From the interviews, the most important reason given for exporting was market expansion or find new markets for their products. The point scored a perfect 4.8 out of 5.0 with a standard deviation of 0.4472, meaning there was unanimity in reason from each of the respondents. All the companies interviewed had been manufacturing and marketing their products in Ghana for several years before export operations began. Some of the products had been carefully developed into strong brands in Ghana with a lot of knowledge and experience gained. Thus all five companies believed they possessed some form of leverage which could give them an advantage in developing other markets so as to enjoy scale economies.

The priority placed on this reason is in consonance with the findings of Reich (1990) that several successful pharmaceutical exporting countries have typically followed a pattern of first developing products for the domestic market under government policies of protection from international competition, before moving into the "low-end" of foreign markets with relatively inexpensive but good quality products, based on the foundation of solid domestic sales. Kotler and Armstrong (2008) corroborate this by indicating that the market development approach usually presents less risk than product development. Most of the respondents believed due to the similarities in the demographics and economic conditions of most West African countries, exploiting those markets through exports promised a great chance of success. Although they hoped to expand their markets, none of the managers felt the market in Ghana was saturated.

For Phyto-Riker pharmaceuticals, the need to embark on exports was to make use of the benefits of the Free Zones arrangement of the government of Ghana in return of incentives such as 10-year tax holiday. Because the company registered on the Free Zones, they were expected to sell not less than 70% of their total production output outside the country. The company thus scored highly for the reason of exporting to make use of government incentives, although the reason could not be sustained about 15 years down the line. The four other companies, however, saw no significant incentives that could have pushed them into exporting giving the point a low scoring, which accounts for the high standard deviation.

The products that were mainly on their export list included Antibiotics, Antihypertensive, Diabetes Medicines, and some Analgesics. Companies that had Anti-malarial and Anti-retroviral as their main export products confirmed that the level of demand had reduced significantly since the policy change to Artemisinin-based Combination Therapies (ACTs), and the inception of the donor funded programs for certain therapeutic areas. This confirms the findings that with most countries signing on to and benefiting

from international donor funded programs, buyers are obliged to shift from products that do not have WHO/Prequalification status (WIPO, 2000; WHO, 2005; Anderson, 2010). This factor is therefore becoming a very important one in product selection. None of the companies reported the need to make any significant modifications to products to fit the export market. This was mainly because requirements for most of the National Drug Regulatory Authorities (NDRAs) in the different countries are similar to that for the Ghana Food and Drugs Board (Anderson 2010), aided by the fact that generic drugs are strictly supposed to be the same or equivalent to the corresponding innovator drug.

All five companies exported through distribution agents and intermediaries who represented them in the foreign countries. The agents were mainly well-established pharmaceutical wholesalers, who had extensive distribution networks in the foreign countries. Some of the companies had exclusivity deals with some of the agents for specific product lines. The companies decided to use these distribution modes mainly because they preferred not to carry too many export overheads, especially in the initial stages of the export, they wish to learn from the locals, findings consistent with Centre for Promotion of Imports (CBI) (2009). The main modes of transportation used were sea and air, subcontracted to logistics companies. None of the companies considered road transportation as a good means for exporting pharmaceuticals from Ghana, considering it too risky. Customers in almost all the countries were mainly wholesale outlets, governments, and institutional buyers. All five companies used sales representatives who are mainly pharmacists specialized in product marketing and who mainly go round to promote the products with medical doctors, or other institutional buyers such as health ministries and medical stores of government hospitals. These findings are in consonance with the assertion that for small to medium sized companies, indirect exporting is a better option (Zuckerman and Biederman 1998) and the CBI (2009) survey that also indicated that developing-country exporters of generic markets to the EU mainly used the "specialized pharmaceutical channel" consisting of wholesalers, pharmacies, hospitals and self-dispensing doctors.

Main Export Destinations

The country (or the market) selected for export is one of the most important decisions made, virtually all other effects and outcomes depend on the market selected (GFP, 2005; USITC, 2010). Companies choose which market is most easily explored, and offers the greatest potential for success. Figure 1 below presents West Africa as the main export destination of the companies studied. However, at the time of data collection in mid 2012, none of the firms exported to Guinea, Guinea Bissau, Cape Verde, Mali, Mauritania and Niger. As was expected, the modal destinations were West African Countries. Only one company had exported to a country outside West Africa.

As was expected, the companies indicated exporting to West Africa mainly due to the nearness of the markets. Additionally the ECOWAS integration and free trade agreements among the countries make exporting to these countries cheaper. Each company interviewed saw Francophone West Africa, as well as Nigeria as the destinations that offer the greatest prospects. The francophone countries were cited because the level of their domestic pharmaceutical manufacturing industries is way underdeveloped compared to what is found in Ghana. Thus, most of the Francophone countries relied on imports especially from France. Prices for pharmaceuticals are also regulated by government and were reported to be significantly higher than what is obtained in Ghana. The common currency of the francophone region also made trading in those regions much easier for the companies. Nigeria was also a preferred destination for most of the companies for the simple reason of their market size. In West Africa, Nigeria is the single country with the highest number of pharmaceutical manufacturing facilities (Africa Union Conference of Ministers of Health, 2007). However, most of the companies believed that the facilities they have in Ghana compare favourably with what is in Nigeria. Thus, they could really compete and tap into the market.

Figure 1: Export Markets of Ghanaian Pharmaceuticals

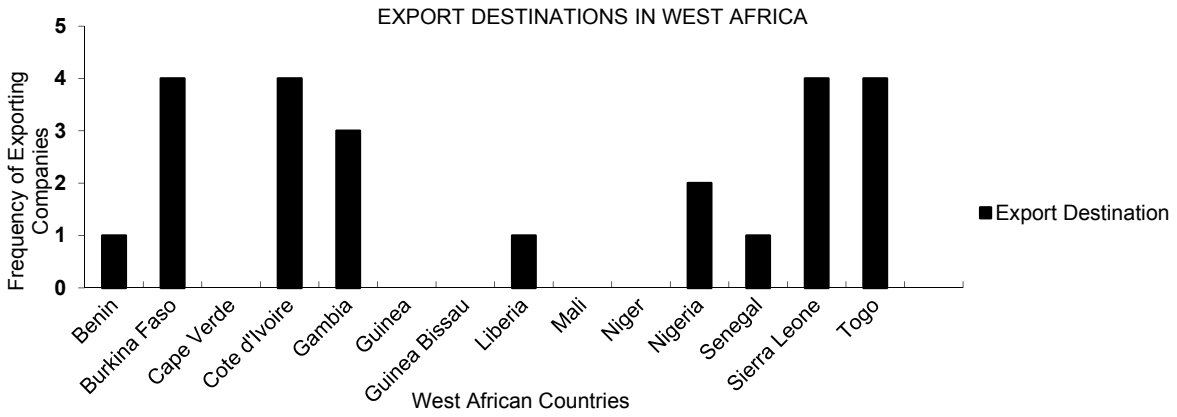

Figure 1 above shows the export markets of Ghanaian pharmaceutical manufacturing firms. The main markets are Burkina Faso, Cote d'Ivoire, Sierra Leone, Togo and Nigeria all in West Africa.

Sierra Leone, Gambia, Liberia and Senegal were listed as some of the easiest destinations for pharmaceutical products to be exported to. The companies indicated that the National Drug Law Enforcement Agency (NDLEA) in Sierra Leone had an agreement with the FDB Ghana which made registrations much easier. In addition, they do not have any strong local pharmaceutical manufacturing companies and thus offered good prospects. These findings agree with CBI (2009) indicating that subsequent to trade liberalization in the European Union, intra-EU imports accounted for more than 80% of total EU imports of pharmaceuticals. None of the companies interviewed had ever exported to North America, Europe, or any other developed country, and as expected, these areas were listed as the destinations with the greatest challenges. The major reason given was due to the manufacturing standards required by Strict Regulatory Agencies (SRAs) without which it is impossible to break into such markets. Although the regulatory standards of the South American and the Asian Regions are not as stringent, these markets did not appeal to any of the companies either.

Export Barriers

The study sought to find out the major barriers to the manufacturing firms' export activities. These were grouped into external and internal barriers as classified by Leonidou (2000). Table 2 presents data on respondents' rating of non-tariff barriers that impair export of finished manufactured pharmaceutical products in the West African sub-region. It emerged that product registration is the most common barrier all respondents agreed on that. The external barriers selected included mainly non-tariff barriers such as product registration requirements, clearing and administrative procedures, challenges with infrastructure, foreign market competition, patent laws, product counterfeiting and perceptions about Ghana. Internal challenges selected included financial challenges, challenges with human resource and technical expertise, and challenges with production and technology. Respondents were asked to grade the degree of intensity of the various barriers on a five-point Likert scale. Table 2 depicts the average rating of the export barriers and their respective relative standard deviation.

The most significant barrier to exports for the companies was product registration procedures across different countries. All companies complained about the duplication of processes and the long lag times and delays associated with getting a product registered. Each company agreed that this was a main reason why they could not market all items on their product line. Particular mention was made of Nigeria and Cote d'Ivoire, which presented the greatest challenges of product registration in West Africa. This confirmed the findings of Shen (2008), Smith *et al.* (2009), Sidibe (2010), and Seiter (2010) that product

registration requirements pose the greatest challenge to pharmaceutical exporting. The next highest ranking external barrier was price-based competition in the export destinations. Most companies indicated that the high costs of manufacturing in Ghana made their products more expensive than their competitors, mainly Indian and Chinese generics manufacturers. Thus, it posed a significant challenge to their export activities, although not as highly as they consider the product registration challenges. The third highest ranking external barrier to exporting was the challenges with infrastructure, mainly transportation.

Table 2: External Barriers to Exports

BARRIER	Average Rating (5)	Average Rating	Relative S.D. (%)
Product Registration	4.8	96%	11
Foreign Market Competition	3.0	60%	33
Challenges with Infrastructure	3.0	60%	24
Administrative Challenges	2.8	56%	29
Bans or Embargos	2.8	56%	27
Tariff Barriers	2.4	48%	23
Manufacturing Standards	1.6	32%	52
Local content laws	1.4	28%	37
Perceptions about Ghana	1.4	28%	37
Patent laws & counterfeiting	1.0	20%	0

The table shows the major barriers that inhibit the exporting activities of Ghanaian manufacturing pharmaceutical companies. Product registration stands out as the major barrier to exports of pharmaceutical products.

Most of the companies indicated that transporting by road to other West African destinations was subject to several delays and risks, which made it very difficult for them. Particular mention was made for countries with no sea ports, such as Burkina Faso and Mali. Thus, some of the companies resort to the relatively more expensive air transportation. Next were Administrative challenges; defined to include shipping and clearing procedures, as well as the export procedures that are required. As indicated by Reich (1990) and Shinozaki (1997) some of the tactics used include confiscation of product based on brand names, instant re-classifications of previously approved products as dangerous or narcotics at the ports, and requirements for re-testing of products to confirm their certificates of analysis, while the products waited at the port. The companies indicated that in West Africa, Nigeria had a number of therapeutic products reserved for local production, which served as a barrier to their exports.

Respondent companies confirmed that although product manufacturing standards were the main barriers to accessing donor-funded products and developed markets, it was not considered a significant barrier to their export operations in West Africa, thus the point generally had a low score. However, at least two of the companies indicated that plans were far advanced to obtain WHO-PQ certification for some of the dosage forms, to be able to access such funds. A key problem for pharmaceutical manufacturers is product counterfeiting, which could seriously dent the reputation of an entire exporting industry, as happened in 2009 to Indian Exporters, when National Agency for Food and Drug Administration and Control (NAFDAC) (Nigeria) busted a ring of companies that had been shipping large consignments of fake anti-malarial generic drugs from China with made-in-India labels to West African Countries (Advani 2009). However, on their part, each company was careful to follow the right registration procedures with the local NDRA and some companies went a step further and registered some of their brand names and designs as trademarks with the registrar generals departments of the various countries they exported to. Some countries have requirements of local content even for the import of pharmaceuticals (MOITI, 2011). In Mexico for example, exporting companies are required to associate with locally based pharmaceutical manufacturing companies or laboratories with "significant" facilities in Mexico. The local firm would thus act as a "guarantor" with the local authorities in particular with regard to manufacturing practices, registration, quality control etc. (MOITI, 2011).

In Table 3, we summarise the most influential drivers and barriers affecting Ghanaian pharmaceutical manufacturing exporting companies. Most of these factors are external to the firms. The major internal barrier the companies indicated affected their export operations was lack of access to affordable financing; however this was not comparable to product registration as a barrier. Each company felt they had enough knowledge of production and exporting to manage their export operations, and did not consider challenges with production technology as very serious ones. The table also presented the top five markets that Ghanaian pharmaceutical manufacturers patronize. Table 3 below shows the summary of drivers, barriers and top five markets of Ghanaian pharmaceutical manufacturing exporters.

Table 3: Summary of Drivers, Barriers and top Export Markets

Drivers	Mean	Barriers	Mean	Top Markets	Mean
Market Expansion	4.80	Product Registration	4.8	Burkina Faso	4.0
Fulfilling Company Vision	3.40	Foreign Market Competition	3.0	Cote d'Ivoire	4.0
Foreign Exchange	3.25	Challenges with Infrastructure	3.0	Sierra Leone	4.0
Export incentives	2.50	Administrative Challenges	2.8	Togo	4.0
Economies of Scale	2.20	Bans or Embargos	2.8	Gambia	3.0

This table summarises the top export drivers and barriers that affect Ghanaian pharmaceutical manufacturers; it also depicts the major export destinations of these exporters. Almost 80% of respondents patronize these markets.

Export Needs

Research findings revealed that most of the companies interviewed had not exploited any government grants geared towards exports. All the companies were aware of the Export Development and Agriculture Investment Fund (EDAIF), but none had actually been able to exploit it. One company commented that the fund was difficult to access mainly because of the bureaucratic processes and long lag times that follow application, causing most of the companies to utilize internally generated funds and commercial loans for their export financing.

McCabe (2009) reports that 66 of the 200 basic materials required for production are exempt from value-added tax (12.5 percent) and the NHIS levy (2.5 percent). However, the companies felt those tax incentives were not enough, compared to what their Asian counterparts could receive as incentives from their governments. One company commented that in India, pharmaceutical companies enjoy full tax refund and rebated tax credit for shipments above certain quantum for export of drugs as an incentive which contributes to their being more competitive. The Global Investment House (2007) also reports that the decision by the Jordanian government not to tax profits derived from exports from Jordan before the year 2008, was a major cause of many pharmaceutical companies expanding both their export and domestic operations. Some of these incentives could be introduced in Ghana to encourage exports. Ghanaian government missions abroad could also offer a great deal of assistance to exporters.

The main area exporters felt the mission could help was with trade shows and promotions. The backing of the foreign missions in such shows adds some credibility to the exporting companies (High Commission of India, 2006). Of particular significance some of the interviewees mentioned the Ghanaian mission in Namibia, and Sierra Leone who had organized and invited some of the companies to such shows, and they hoped especially the trade missions in francophone West Africa and Nigeria could do more in that area. The companies together with the Pharmaceutical Manufacturers Association of Ghana agree that, one area government could step in to expedite the attainment of WHO-PQ status by most of the companies, was with the provision of a Bio-equivalence Centre. Bio-equivalence is one of the main tests that are conducted to demonstrate that generic medicines have the same or similar activity as innovator medicines.

Although the companies agreed training of their staff and development of human resource mainly rests with the individual companies, they all agreed that government could provide industry-specific skilled higher education. One of the respondents noted that industry was gradually relying on expertise from countries like India. The Indian government established over 21 different National Institutes for Pharmaceutical Education and Research, which have contributed tremendously to the competitive advantage of the sector in human resource for pharmaceuticals (Ernst & Young, 2010). They agreed that specific industry-targeted training would be of significant help. The most important area the companies wished ECOWAS could do well in was with harmonization of registration procedures for drugs, which could cut down on the long delays in obtaining approvals for products. Harmonization at regional and ultimately continental level would give a level playing field, with the possibility to compete and market products across the whole of Africa and beyond (Sidibe, 2010).

CONCLUDING COMMENTS

Pharmaceutical manufacturers in Ghana; a developing country, have good excuses not to export; however, few of the firms have braced the odds to do so. Even though there are about 40 pharmaceutical manufacturers in the Ghana, only about 10 of these firms export finished products to other markets; mainly within ECOWAS. The purpose of this paper was to analyze the drivers and barriers of Ghanaian pharmaceutical manufacturing companies that have been able to explore or exploit international markets. In this study we investigated thoroughly the factors that drive the local pharmaceutical firms into the international market as well as the barriers hindering their export activities. The study also covered mode of entry, distribution approaches, and export destinations among other factors. This qualitative study interviewed Export Managers of 5 out of the 10 pharmaceutical manufacturers that export to some West African countries. The study revealed that almost all the firms that export are in search of wider markets; other factors that motivate firms to export are fulfilment of company vision and the quest for foreign exchange to import manufacturing inputs. In terms of distribution, all the companies use well-established local agents. However, major barriers include difficulty in product registration on foreign markets, foreign market competition; lack of export infrastructure; bureaucratic procedures and non-attainment of WHO-pre-qualification which allows firms to export to emerging or developed economies. Major limitation encountered was the unwillingness of some pharmaceutical manufacturing that export to take part in the study leading to a small sample size. It is evident from the study that products from pharmaceutical manufacturers; mainly China and India are gradually taking over the ECOWAS markets on cost leadership bases. Future research must be directed at strategies for competing alongside the presence of products from the BRICS; there probably will be the need for niche creation and networking approach to product distribution.

REFERENCES

Abor, J. and Biekpe, N. (2006), "How are SMEs Financed? Evidence from the Ghanaian Non-Traditional Export Sector", *Government & Policy*, 24 (1): 71-81.

Advani, A. H. (2009). Chinese Firms Ship Fake Drugs With "Made In India" labels to West African Countries. *Business India, The Magazine of the Corporate World,* No. 821, pp. 28-30.

African Union Conference of Ministers of Health. (2007). Pharmaceutical Manufacturing Plan for Africa. *Third Session of the African Union Conference of Ministers of Health , April* (CAMH/MIN/8(III)), 1-8.

Anderson, T. (2010). Tide turns for drug manufacturing in Africa. *The Lancet ,* No. 375, pp. 1597-1598.

Bertrand, K. (1989). Scrambling for 1992. *Business Marketing ,* 74 (4):49-59.

Buatsi, S. N. (2002) "Financing Non-Traditional Exports in Ghana", *Journal of Business and Industrial Marketing,* 17, (6):501-522.

Bumpas, J., and Ekkehard, B. (2009). *A Study on Active Pharmaceutical Ingredient Manufacturing for Essential Medicines.* World Bank HNP Discussion Paper, 1-42

CBI. (2010). The Pharmaceutical Products market in the EU. *European Union Centre for the Promotion of Imports From Developing Countries: Market Survey , February*, 1-46.

Chambers, E. J., and Shaw, W. J. (2008). Reaching Out: Exploring SME Exporting Opportunities and Challenges. *Western Centre for Economic Research, Information Bulletin , April* (109), 1-65.

Cohen, J. C., Gyansa-Lutterodt, M., and Torpey, K. (2005). TRIPS, the Doha Declaration and Increasing access to medicines; Policy options for Ghana. *Globalization and Health*. *December.* 1-9

Danadams Pharmaceuticals Limited. (2011). Retrieved July 10, 2011, from Danadams Pharmaceuticals Ltd, Official Website: www.danadams.com

Dosoglu-Guner, B. (1999). "An Exploratory Study of the Export Intention of Firms: The Relevance of Organizational Culture". *Journal of Global Marketing ,* 12 (4):45-63.

Easterly, W., and Reshef, A. (2010). African Export Successes; Surprises, Stylized Facts, and Explanations. *National Bureau of Economic Research Working Paper Series. No. 16597.* December. 1-52

Edwards, L., and Alves, P. (2006). "South African Export Performance: Determinants of Export Supply". *South African Journal of Economics* , 74 (3):473-500.

Elbadawi, I., Mengistae, T., and Zeufack, A. (2006). "Market Access, Supplier Access, and Africa's Manufactured Exports: Firm-Level Analysis". *Journal of International Trade and Economic Development* , 15 (4):493-523.

Ernest Chemists Ltd. (2011). *Ernest Chemists Ltd, Official Website*. Retrieved Juy 20, 2011, from www.ernestchemists.com

Ernst & Young. (2010). *Pharmaceuticals, Market and Opportunities*. Report for India Brand Equity Foundation. 1-35

Feuer, C. (2006). *Tuberculosis Research and Development: A Critical Analysis*. Treatment Action Group. 1-42

GFP. (2005). *Enabling SMEs to Enter the International Supply Chain.* The World Bank Group: Global Facilitation Partnership for Transportation and Trade Explanatory Notes. June. 1-4.

Global Investment House. (2007). Jordan Pharmaceutical Sector: The Healing Touch of the Dead Sea. *Sector Research*, June, 1-107.

Hessels, J., and Terjesen, S. (2007, October). SME Choice of Direct and Indirect Export Modes; Resource Dependency and Institutional Theory Perspectives*. Scientific Analysis of Entrepreneurship and SMEs Working Paper H200712*. October. 1-42.

High Commission of India. (2006, March). *Market Survey: Export of Indian Pharmaceuticals to Namibia.* March. 1-58

Hill, C. W. (2003). *Intenational Business: Competing In The Global Marketplace.* New York, McGraw-Hill Irwin.

Hinson R. and Sørensen O. J. (2006) "E-Business and small Ghanaian Exporters: Preliminary micro firm explorations in the light of a digital divide", *Online Information Review* 30(2): 116-138

ITA. (2010). *Pharmaceutical Industry Profile.* International Trade Administration Office of Health and Consumer Goods Sector Notebook Project No ITA/310-R-97-005. Washington. July

Iwanow, T. and Kirkpatrick, C. (2007),. Trade Facilitation and Manufacturing Exports: Is Africa Different? A paper prepared for the 'Economic Development in Africa' Conference, March 2007. organized by the Centre for Study of African Economies, University of Oxford,

Jankowicz, A. D. (2002). *Business Research Projects* (3rd Edition ed.). Cornwall: Thomson Learning. 52-64.

Joshi, R. M. (2005). *International Marketing.* New York: Oxford University Press. 59-78.

Kaplan, W. and Laign, R. (2005). *Local Production of Pharmaceuticals: Industrial Policy and Access to Medicines.* World Bank HNP Discussion Paper. Washington DC, January, 1-40.

Kotler, P., and Armstrong, G. (2008). *Principles Of Marketing* (12th Edition ed.). New Jersey, Pearson Prentice Hall. 540-565.

Kuada, J. E. (2005),. *Managing the internationalization process in Ghana: Theories and Practices,* Adonis & Abbey Publishers Ltd, London, pp. 10-24

Kuada, J. and Sørensen, O. J., (2000) *Internationalization of Companies from Developing Countries,* New York : Routledge.

LaGray Chemical Company, Official Website. (n.d.). Retrieved July 15, 2011, from www.lagray.com

Leonidou, L. C. (2000). "Barriers to Export Management: An Organizational And Internationalization Analysis", *Journal Of International Management* , 6(2):121-148.

Leonidou, L. C., Katsikeas, C. S., and Samieec, S. (2002). "Marketing Strategy Determinants of Export Performance: A Meta-Analysis", *Journal of Business Research* ,55(4): 51-67.

Ling-Yee, L., and Ogunmokun, G. O. (2001) "Effect of export financing resources and supply-chain skills on export competitive advantages: implications for superior export performance", *Journal of World Business,* Vol. 36(3):260-279

Macher, J., and Nickerson, J. (2006). *Pharmaceutical Manufacturing Research Project; Final Benchmarking Report*, Olin School of Business, September, 1-475.

McCabe, A. (2009). Private Sector Pharmaceutical Supply and Distribution Chains; Ghana, Mali and Malawi. *The World Bank, Health Systems for Outcomes Publication 53107*. December, 1-67.

MOITI. (2011). *Mexican Pharmaceutical Industry.* Massachussettes Office of International Trade and Investment Sector publication, Massachussettes.

Morgan, R. E. (1997). Export Stimuli and Export Barriers: Evidence from Empirical Research Studies. *European Business Review*, 97 (2): 68-90.

Morse, H. M. (2003). "Product Market Definition In the The Pharmaceutical Industry" *Antitrust Law Journal* , 71(2):633-676.

Nelson, C. A. (2000). *Exporting, A Manager's Guide to the World Market.* London. International Thomson Business Press. 168-173.

OECD. (2009). *Top Barriers and Drivers to SME Internationalisation.* Report by the Organisation for Economic Co-operation and Development Working Party on SMEs and Entrepreneurship. 1-35

Phyto-riker Pharmaceuticals Ltd. (2010). Retrieved August 20, 2011, from Phytoriker Ghana Limited, Official Website: www.phytoriker.com

Reich, M. R. (1990). "Why the Japanese Don't Export More Pharmaceuticals: Health Policy as Industrial Policy", *California Management Review*, 32 (2): 124-145.

Rodriguez-Monguio, R., and Rovira, J. (2005). An Analysis of Pharmaceutical Lending By the World Bank*, World Bank HNP Discussion Paper 31510.* Washington DC., pp 1-41.

Scarborough, N. M. (2005). *Essentials of Entrepreneurship and Small Business Management* (6th Edition). England, Prentice Hall. 463-484.

Seiter, A. (2005). Pharmaceuticals, Local Manufacturing*. World Bank HNP Discussion Paper Brief Number 3. March. 1-6.*

Seiter, A. (2010). A Practical Approach to Pharmaceutical Policy, Directions in Development*. World Bank HNP Discussion Paper 55203.*

Shen, J. J. (2008). China's Rising Importance in Pharmaceuticals. *China Business Review*, May/June, 22-24.

Shoham, A. (1996). "Marketing-mix standardization: determinants of export performance". *Journal of Global Marketing*, 10 (2): 3-73.

Sidibe, M. (2010). Beautiful Music: Brining Africa's Drug Regulations In Harmony with Human Health, *Special Meeting of an Extended Technical Committee on the Pharmaceutical Manufacturing plan for Africa*. Pretoria. 1-5

Smith, R. D., Correa, C., & Oh, C. (2009). Trade, TRIPS and Pharmaceuticals. *Lancet ,* 373, 684-91.

Suarez-Ortega, S. (2003). Export Barriers: Insights from Small and Medium-sized Firms. *International Small Business Journal* , 21 (4): 403-419.

US Department of Commerce. (1998). *A Basic Guide To Exporting.* California. World Trade Press.

USITC. (2010). *Small and Medium Sized Enterprises: US and EU Export Activities, and Barriers and Opportunities Experienced by US Firms.* United States International Trade Commission Publication 4169, Investigation No. 332-509. July

Van Dyck, P. (2007). "Importing Western Style, Exporting Tragedy: Changes in Indian Patent Law and Their Impact on AIDS Treatment in Africa" *Northwestern Journal of Technology and Intellectual Property*, 6 (1): 138-151.

WHO. (2008). Access to Medicines. *Drug Information Journal , 19* (No. 4). 83-96.

WIPO. (2000). Patent Protection and Access to HIV/AIDS Pharmaceuticals In Sub-Saharan Africa.*Report Prepared for the World Intellectual Property Organization.*Washington DC. 1-100.

Wolf, S. (2007). Firm Characteristics of Non-traditional Exporters In Ghana. *The European Journal of Development Research ,* 19 (3): 391-411.

Yamin, M., Sinkovics, R. R., and Hadjielias, E. (2007). "EU Harmonization, Managerial Perceptions and SME Export Behavior",*Journal of Euromarketing* ,17 (1): 7-21.

Zuckerman, A., & Biederman, D. (1998). *Exporting And Importing, Negotiating Global Markets.* New York, a Division of American Management Association, pp 428-521

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COMMUNITY AWARENESS, PARTICIPATION AND PERCEPTIONS ABOUT THE ROAD MAINTENANCE LEVY FUND PROJECTS IN KENYA

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ABSTRACT

The Government has decentralized about 16% of the Road Maintenance Levy Fund to constituencies to maintain feeder roads. Decentralization of the fund creates opportunity for communities to participate in road maintenance, thus, improve transparency, accountability, ownership and sustainability. Although the Fund had operated for nearly two decades, no study had ever assessed the level of community awareness, participation and perceptions regarding project completion rates. We applied the cross-sectional survey design to source information from 298 community leaders and motorists. Out of 298 respondents, 102 (34.2%) were aware of the Fund, of which only 43 (42.2%) had participated in maintenance projects. Besides, only 34 (33.3%) respondents were positive about project completion rate, the majority, 68 (66.7%) indicated negative opinions. Inconsistent flow of funds (82.4%), political interference (71.6%) and delay in auditing (39.2%) were among the factors affecting project completion rates. Among other aspects, the study recommends the need to sensitize the public about RMLF to improve awareness and participation; secure a hotline number to improve reporting; publicize annual work plans, budgets and expenditure reports for validation by the public; introduce electronic transfer of funds to agency accounts; develop rules, regulations and procedures to safeguard agencies from political interference.

JEL: 016

KEYWORDS: Community Awareness, Community Participation, Road Maintenance Levy Fund, Road Completion Rate, Kenya Roads Board

INTRODUCTION

Participatory development is an important approach towards enabling communities to play an active role in projects initiated to address issues affecting their life and livelihoods, thereby assure the sustainability of such projects (World Bank, 2004). As noted by Thwala (2010), communities are no longer mere recipients of development projects; rather, they have become critical stakeholders that have an important role to play in the planning, implementation, management and evaluation of projects in their areas.

Community awareness and participation in development activities are not new concepts; for more than three decades, the concepts have gained recognition as essential requirements for the success of all development projects, including road maintenance (Nour, 2011). The benefits of community awareness and participation in development projects include cost reduction, resource supplementation and better targeting of the actual needs, especially when they are involved right from the planning phase. In addition, the two concepts nurture a sense of ownership, responsibility, accountability and better use of project resources (Moser, 1987; Nour, 2011). Community members participate in projects as individuals or through their organizations, associations, private enterprises or non-governmental organizations.

The Road Maintenance Levy Fund (RMLF) came into existence through the Road Maintenance Levy Fund Act number 9 of 1993 to facilitate the maintenance of public roads in all parts of Kenya. Kenya Roads Board (KRB) manages the Fund, which replenishes through fuel levy on petroleum products and transit toll collections. KRB is a state corporation that oversees and coordinates the development and maintenance of roads in the country. It came into existence in 1999 through the Kenya Roads Board Act number 7 of 1999 (Government of Kenya [GoK], 1993; 2000; 2012).

Section 6 of the Act gives KRB the mandate to undertake the following functions: administer funds derived from the fuel levy and any other funds that may accrue to it; oversee the road network in Kenya by coordinating its development, rehabilitation and maintenance. The law also mandates KRB to be the principal adviser to the Government on all matters related to the development, rehabilitation and maintenance of the road network in Kenya (GoK, 2000; Nyangaga, 2007).

Furthermore, KRB monitors and evaluates the activities undertaken by road agencies in the development, rehabilitation and maintenance of roads; ensure that all procurements for works and materials proceed in accordance with procedures and guidelines in the Public Procurement and Disposal Act of 2005. In addition, the institution recommends to the Government necessary periodic reviews of the fuel levy and alternative revenue sources for the development, rehabilitation and maintenance of roads; it also determines the allocation of financial resources from the fuel levy fund (GoK, 2000).

As noted by Aukot, Okendo and Korir (2010), the Kenya Revenue Authority (KRA) collects the levy against every litre of petrol or diesel at the port of entry. RMLF thus came into place as a supplementary source of funding towards road maintenance, which initially relied on public tolls (Aukot, Okendo & Korir, 2010). In this regard, KRB allocates about 57% of the fund is allocated to the Department of Roads; 24% goes to District Roads Committees (DRCs), local authorities and the Kenya Wildlife Service (KWS). Besides, 16% goes to constituencies for the maintenance of rural access and feeder roads through DRCs and 3% goes towards overhead costs at KRB headquarters (Kenya Anti-Corruption Commission [KACC], 2007; Nyangaga, 2007; GoK, 2006; 2012).

Section 17 of the KRB Act establishes DRCs to among other functions: maintain, rehabilitate and develop constituency roads, submit to the KRB an annual roads program with a comprehensive plan of action and estimated costs of each activity. DRCs also amplify citizens' concerns on matters related to road maintenance as well as monitor the performance of those responsible for road maintenance and rehabilitation (GoK, 2000). The DRCs manage district roads comprising of class D roads, linking locally important centres to each other or to higher class roads; class E roads, linking minor centres and other unclassified rural roads (excluding urban roads), which are managed by local authorities (Aukot *et al.,* 2010).

Decentralization of the fund gives communities the opportunity to participate at every stage of road maintenance activities, including prioritization, planning and implementation, as well as monitoring and reporting. In this regard, the Fund should interlock with community priority needs related to transportation. Community awareness and participation in RMLF projects is also crucial for transparency and accountability, with a view to eliminating misappropriation or poor workmanship issues. KRB expects community members to take up an active role as key stakeholders in road maintenance through RMLF resources (KACC, 2007; Aukot *et al.,* 2010).

Community awareness and participation in road maintenance activities is encouraged by publishing the breakdown of projects earmarked for implementation in a particular financial year and their respective costs through the print media. Community members are also encouraged to seek more information relating to the fund from relevant government offices; they are also encouraged to participate in local

public forums discussing issues related to road maintenance project, among other development items. In view of this community, members should advocate against resource diversion to particular projects or misappropriation of funds within their localities (KACC, 2007; Aukot *et al.,* 2010). This they can achieve through petitions to relevant authorities including KACC, DRC chairpersons, the district commissioners or political leaders (KACC, 2007).

Various empirical studies have shown that community awareness and participation significantly associate with project success. For instance, Khwaja (2004) found that community participation improves performance in non-technical decisions; however, for technical decisions, community participation yields negative outcomes. Other studies than have demonstrated the importance of community awareness and participation, include the evaluation of road construction projects in Botswana and Malawi (Thwala, 2009; World Bank, 2004), as well as community water projects, again, in Malawi (World Bank, 2004) and a community irrigation project in Philippines (World bank, 2001).

In Kenya, the literature review revealed a paucity of information on the level of community awareness and participation in RMLF projects. We conducted this study in Kisumu, Siaya, Nyando, Kisii and Migori Districts of Nyanza Province. The remainder of the paper includes sections on literature review, data and methodology, results and discussions as well as conclusions.

LITERATURE REVIEW

The concepts of community awareness and participation emerged in the early 1970s from the community development movement in developing countries and have since become important bases for project success (Thwala, 2010). Community awareness and participation are particularly necessary due to the failure of the top-down approaches to address challenges such as high poverty levels and environmental degradation among others. Consequently, emphasis shifted from imported technical professional solutions to community-based development, recognizing local knowledge and skills of the people living in poverty and making effort to engage them in participatory programs (Warburton, 2000; Cooke & Kothari, 2001).

As noted by the World Bank (2004), community awareness and participation are processes through which through which stakeholders' gain influence and control over development initiatives, decisions and resources affecting their lives and livelihoods. To many developing governments, community awareness and participation are valuable in improving community welfare, training people in local administration and extending government control through self-help initiatives (McCommon, 1993). However, McCommon (1993) points out that the policy on community development has not been successful in many countries, particularly due to bureaucratic top-down approach adopted by postcolonial governments.

Community participation brings forth several advantages to communities in terms of empowerment, capacity building, improving project effectiveness and efficiency; project cost sharing and enhancing ownership (Thwala, 2010). The extent of participation varies from information sharing, consultation, decision-making and initiation of action. The concept is successful in situations where community members and community-based organizations take up active roles and responsibilities than where development actors merely target them by baseline surveys or consensus-building meetings (Thwala, 2001; 2010). Community-based organizations serve as channels for information flow to communities to enable them make informed decisions and choices (Thwala, 2009).

On the same note, the World Bank (2004) points out that the success of community awareness and participation depend on the extent to which community members are involved to support various phases

of project life, including design, implementation, supervision and evaluation. Furthermore, community awareness and participation improves through local committees and governance structures for better mobilization, participation and serve as interface between project management and community members (Adams, 1999). However, this model of community has elicited criticisms for being too project-based, implying that it does not include full spectrum of community awareness and participation approaches. As such, the framework adopts a means-oriented approach; through which community awareness and participation is emerge as a means towards the realization of project goals (Abbot, 1991; Thwala, 2010).

The alternative approach, which is ends-oriented, perceives community awareness and participation as processes through which communities are empowered to play a more active role in mobilization, planning , setting objectives, goals and targets; management, implementation as well as monitoring and evaluation by participating in the appraisal of road works, as well as recognition of achievements, and redefinition of community needs. In the process of participation, community members many be capacitated through training in basics of accounting and communication skills to enable them understand and correctly interpret financial disclosures by road agencies (Abbot, 1991; Thwala, 2010). In the same vein, Adams (1999) points out that community participation does not simply mean being involved in through casual labour; rather, it means contributing ideas, making decisions and taking responsibility.

More still, Nelson and Wrights (1995) suggest that awareness creation and empowerment in terms of information and necessary skills should precede an ideal model for community participation. Community members can play a more active role when they have knowledge about a project and supported with necessary training for better understanding of their roles in the project cycle. In this regard, awareness and empowerment serve as the entry point for active community participation (Nelson & Wrights, 1995). The principle of empowerment suggests that people participate because it is their right to do so; moreover, participation is the natural result of empowerment (De Beer & Swanepoel, 1998; Thwala, 2009).

Arrossi (1994) also maintains that the term participation can apply in different ways, such as a means to reduce project costs, provision of cheap labour and a means for support mobilization. However, a very different understanding of participation is the one that encourages the community to become involved in the project's decision-making process, influence resource use and activity choices. Similarly, the Asian Development Bank, contend that community participation is far more than mere contribution through labour or supplies, it involves taking greater responsibility in decision-making processes, as well as feedback to project implementers.

Despite an important role played by community participation, it associates with some problems. In this regard, Connor (1997) found that one of the problems relates to coordination and integration of diverse interests into the project plan and implementation. When community participation involves many diverse groups, bringing together their different needs in the design and implementation of the project can prove to be very challenging. Moreover, diverse interests may give rise to collective action problems as well as conflict among participants. In this regard, some participants may perceive inadequate integration when the outcomes seem to be significantly different from what they perceived in the outset of planning process (Nelson & Wrights, 1995).

Furthermore, various empirical studies have shown that community awareness and participation significantly associate with project success. For instance, Khwaja (2004) assessed whether increasing community awareness and participation benefit to the success of development projects. The study found that while community participation improves project outcomes in non-technical decisions, increasing community participation in technical decisions actually led to poor performance.

A study conducted in Botswana, which evaluated the impact of community awareness and participation in the national labour-intensive road construction found that the involvement of community members had resulted to significant achievements. The program created over 3,000 jobs (total employment within the public sector is only 20,000) and the construction and upgrade of nearly 2,000 kilometres of road (Thwala, 2009). A similar program in Malawi resulted to the upgrading of over 3,845 kilometres of district roads in 16 out of 24 districts in the country. In this regard, Thwala (2009) linked the success of the program to community participation.

Still in Malawi, a study conducted by the World Bank (2004) indicated that community members were involved in a water supply project right from the planning stage, construction, operation and distribution. The project recruited field workers locally and traditional community groups formed management committees, with minimal government support. At the time of the evaluation, more than 6,000 standpipes installed nationwide were still in working order, thus, guaranteeing high quality, reliable and convenient water supply to more than one million Malawians through systems that they themselves built, own and maintain (World Bank, 2004).

In Philippines, an evaluation of another World Bank project found that over a period of ten years, the National Irrigation Administration shifted from a top down government approach to heavy reliance on local farmers in the design, operation and maintenance of local irrigation systems. Due to increased community participation, the study revealed that the canals and structures worked better, rice yields improved by 20% and irrigated were 35% greater than in control groups without community participation (World Bank, 1991).

DATA AND METHODOLOGY

We applied the cross-sectional survey design to guide the research process, including planning, training and pretesting, data sourcing, data processing and analysis, as well as reporting. The study targeted community members, including leaders, motorists and officials of public transport associations. Inclusion in the sample depended on voluntary participation; consequently, out of 319 people contacted, 298 (93.4%) were successfully interviewed. We collected primary data in May 2009 and the process involved identification of eligible participants, consenting and interviewing.

We applied purposive sampling to select villages along main roads in the districts and to select community leaders and public transport association officials. We sampled motorists through a random process in nearby town centres. Most respondents in this category were drivers of commuter service vehicles and taxicabs. We applied a survey questionnaire with structured and semi-structured questions to source the data.

Furthermore, we employed quantitative and qualitative techniques to process and analyze the data. In this regard, quantitative analysis that we obtained frequency distributions with percentages and cross-tabulation with Chi-square tests, we also transcribed, clustered into nodes and explored qualitative data for patterns and meaning to community awareness and participation in road maintenance projects. Detailed description of the design and approaches that we used in this study are available in following publications (Nachmias & Nachmias, 1996; Bryman & Cramer 1997; American Statistical Association, 1999; Owens, 2002; Rindfleisch, Malter, Ganesan & Moorman, 2008).

RESULTS AND DISCUSSIONS

The study began on the premise that community awareness is a critical antecedent to community participation, which in turn, enhances transparency and accountability in the management of road funds.

Besides, a proper management and utilization of road funds is important for a high rate of project success. A low success rate of road projects under the Road Maintenance Levy Fund (RMLF) may be a sign of gaps in the implementation of the Fund. We have presented the findings in this sequence: background profile of participants, community awareness, community participation and perceptions about project completion rate.

The study covered 298 respondents, which included 116 (38.9%) community leaders, 142 (47.7%) motorists and 40 (13.4%) officials of public transport associations, including commuter service and taxicab associations. Table 1 shows that most respondents, 242 (81.2%) were men, while women were 56 (18.8%). Besides, the respondents were aged between 18 and 66 years, with up to 108 (36.2%) falling in the 30 to 39 years age bracket. Cumulatively, up to 199 (66.8%) were in the prime age bracket of 30 to 49 years. Table 1 shows the background profile of the respondents.

Table 1: Background Profile of Respondents

Participants' attributes	Frequency	Percent
Gender		
Male	242	81.2
Female	56	18.8
Total	**298**	**100.0**
Age		
<20 yrs	7	2.3
20-29 yrs	29	9.7
30-39 yrs	108	36.2
40-49 yrs	91	30.5
50-59 yrs	45	15.1
60 yrs+	18	6.0
Total	**298**	**100.0**
Education level		
None	1	0.3
Primary	52	17.4
Secondary	149	50.0
College	84	28.2
University	12	4.0
Total	**298**	**100.0**
Profession		
Teachers	27	9.1
Farmers	45	15.1
Business	59	19.8
Drivers	118	39.6
Administrators	22	7.4
Contractors	4	1.3
Lawyers	7	2.3
Traffic police	12	4.0
Nurses	1	0.3
Engineers	3	1.0
Total	**298**	**100.0**

This Table presents the distribution of respondents, in terms of attributes such as gender, age, educational attainment and profession. The first column indicates attributes and measurement categories, the second column shows frequency distributions, while the third column indicates valid percentages. Notably, up to 81.2% of the respondents were men, 66.7% were aged between 30 and 49 years, 50.0% had attained some secondary education, while 39.6% were drivers by profession.

The study found that one-half, 149 (50.0%) respondents had attained some secondary school education, 84 (28.2%) reported having some college education, while those with university education were 12 (4.0%). Cumulatively up to 245 (82.2%) had attained secondary education or higher, which suggests that most respondents were people with ability to make significant contribution to community-based projects in decision-making, rather than providing manual labour only.

In addition, respondents were diverse in terms of professional background, with up to 118 (39.6%) being drivers, 59 (19.8%) respondents were in business, 45 (15.1%) were farmers, 27 (9.1%) said they were

teachers, while 22 (7.4%) were administrators, including public administrators such as district officers and chiefs, as well as civil servants in other government ministries. Even though some respondents had retired from formal employment, they were actively participating in community development activities by virtue of their wealth of knowledge and professional skills.

The study found that out of 298 respondents, only 102 (34.2%) were aware of the Fund, with more than two-thirds, 196 (65.8%) indicating that they had never heard of the Fund. This finding suggests that the Fund was not a popular initiative at the community level. Contrastingly, the awareness of other development funds at the community level, such as Constituency Development Fund, Constituency Bursary Fund and Youth Enterprise Development Fund was near universal. This suggests that KRB and the government had not done enough to create awareness about the road maintenance Fund.

A low level of awareness may have far-reaching implications on the participation of community members in road maintenance projects funded through the initiative. That awareness precedes active participation is a matter of logic. Across the districts, Table 2 shows that the proportion of respondents aware of the road maintenance Fund was highest in Kisumu and Kisii Districts, as reported by 35 (47.3%) and 30 (45.5%), respectively. Contrastingly, the proportion of respondents reporting lack of awareness was highest in Migori and Nyando Districts, according to 43 (82.7%) and 46 (75.4%), respectively.
Based this, the cross tabulation analysis obtained a computed χ^2 value of 23.447, with 4 degrees of freedom and a p-value of 0.001, which was significant at 0.01 error margin. This suggests up to 99% chance that awareness about the Fund was significantly different across the districts, with some districts reporting higher levels of awareness than others do. Nonetheless, the overall picture shows that awareness level about the Fund remains poor even in those districts that were relatively better off. Hence, awareness creation interventions should cover the whole country.

Table 2: Community Awareness and Participation in the Road Maintenance Levy Fund

Awareness about RMLF	**Aware**		**Not aware**		**n**
	Frequency	*Percent*	*Frequency*	*Percent*	
Migori	15	24.6	46	75.4	61
Kisumu	35	47.3	39	52.7	74
Nyando	9	17.3	43	82.7	52
Siaya	13	28.9	32	71.1	45
Kisii	30	45.5	36	54.5	66
Overall	**102**	**34.2**	**196**	**65.8**	**298**
Participation in RMLF projects	**Ever participated**		**Never participated**		**n**
	Frequency	*Percent*	*Frequency*	*Percent*	
Migori	6	40.0	9	60.0	15
Kisumu	19	54.3	16	45.7	35
Nyando	2	22.2	7	77.8	9
Siaya	5	38.5	8	61.5	13
Kisii	11	36.7	19	63.3	30
Overall	**43**	**42.2**	**59**	**57.8**	**102**

This Table presents information on the level of community awareness and participation in the Road Maintenance Levy Fund across the five districts. Notably, awareness level was highest in Kisumu at 47.3% and Kisii at 45.5%. However, the proportion indicating lack of awareness about the Fund was highest in Nyando (82.7%) and Migori (75.4%). The results show that participation was highest in Kisumu (54.3%), Migori (40.0%) and Siaya (38.0%). However, the proportion of those who had not participated in such projects was highest in Nyando (77.8%), Kisii (63.3%) and Siaya (61.5%).

We requested those aware of the Fund to indicate how they first came to know about it. The results indicated that that 29 (28.4%) first heard about the Fund through radio, 41 (40.2%) mentioned friends and colleagues, while 12 (11.8%) received information through community leaders. Other ways through which respondents first heard about the Fund included newspapers, 9 (8.8%); community forums, 6 (5.9%); internet, 3 (2.9%) and television, 2 (2.0%). The results suggest radio and friends/colleagues played the most important role in awareness creation; hence, KRB and the Government should consider radio and social media in the communication strategy to popularize the road maintenance Fund.

The results show that out of 102 people awareness of the Fund, only 43 (42.2%) had participated in road maintenance projects funded through RMLF. The results show a very low level of participation in road maintenance projects, even among community members who reported awareness of the Fund, suggesting that besides awareness, other factors such as education level, professional background and gender influenced community participation in road maintenance projects. Respondents also cited a perception that road construction matters were technical and meant for people with technical background.

Across the districts, Table 2 shows that participation was highest in Kisumu, with 19 (54.3%), followed by Migori, where 6 (40.0%) respondents had participated. Contrastingly, the proportion of those who had not participated in such projects was highest in Nyando, 7 (77.8%) and Kisii, 19 (63.3%). The analysis obtained a computed χ^2 value of 14.081, with 4 degrees of freedom and a p-value of 0.024, which was significant at 0.05 error margin, thereby suggesting up to 95% chance that participation in projects funded through RMLF varied significantly across the districts. Nonetheless, given that the overall proportion of participants was less than half (42.2%), readers should interpret the proportions indicated in Table 2 carefully, so as not over-estimate the level of community participation in road projects.

The study found that respondents participated at various levels of the project cycle. In this regard, Table 3 shows that 16 (37.2%) participated in road prioritization, where they provided views regarding the order in which road agencies were to carry out maintenance work, based on the economic importance of each road.

In addition, up to 10 (23.3%) respondents said they participated in the implementation of road projects as casual workers, 6 (14.0%) participated in the tendering process bidders, 4 (9.3%) respondents involved in the planning and budgeting phase. Besides, 3 (7.0%) monitored the progress of road maintenance projects in their areas, while only 1 (2.3%) had ever reported to the authorities about the quality of workmanship.

Table 3: Form and Frequency of Participation in Projects Funded through the Road Fund

Form of participation	Ever participated		Once		Twice		>Twice	
	Frequency	*Percent*	*Frequency*	*Percent*	*Frequency*	*Percent*	*Frequency*	*Percent*
Prioritization	16	37.2	2	12.5	4	25.0	10	62.5
Planning	4	9.3	1	25.0	1	25.0	2	50.0
Tender adjudication	2	4.7	1	50.0	1	50.0	0	0.0
Bidder	6	14.0	1	16.7	3	50.0	2	33.3
Contractor	1	2.3	1	100.0	0	0.0	0	0.0
Casual worker	10	23.3	1	10.0	3	30.0	6	60.0
Monitoring	3	7.0	1	33.3	2	66.7	0	0.0
Reporting	1	2.3	1	100.0	0	0.0	0	0.0
Total	**43**	**100.0**	**9**	**20.9**	**14**	**32.6**	**20**	**46.5**

This Table presents information on the various forms of through which the respondents participated in road maintenance projects. The table shows that community members were involved in road prioritization (37.2%); they also participated in actual implementation of works as casual workers (23.3%), in the tendering process as bidders (14.0%) and planning (9.3%). The results show that at the prioritization stage, 62.6% of the respondents had participated more than twice, among casual workers; up to 60.0% of the respondents had participated more than twice, while among bidders, 50.0% of the respondents had participated twice.

Furthermore, the results presented in Table 3 show that among those who had participated in road prioritization, up to 10 (62.6%) respondents reported participating more than twice, 4 (2.0%) had participated twice, while 2 (12.5%) had participated only once. Among casual workers, 6 (60.0%) respondents had participated in the implementation of road maintenance projects more than twice, while 3 (30.0%) had participated twice. Respondents indicated that the frequency of participation in various activities of road maintenance projects had influenced their experience and perceptions about the completion rate of such projects.

Among those participating in the tendering process as bidders, only 2 (33.3%) respondents had participated more than twice, 3 (50.0%. In planning, 2 (50.0%) respondents had participated more than twice, while in monitoring, 2 (66.7%) participants said they had participated only twice. Again, it is important to note that the level of community participation in road maintenance projects was very low (42.2%); hence, readers should interpret the proportions in figure 4 carefully.

CONCLUSIONS

The purpose of this study was to assess the level of community awareness, participation and perceptions regarding the completion rate of RMLF projects. The study found that only 102 (34.2%) out of 298 respondents were aware of the RMLF. The awareness level was relatively higher in districts such as Kisumu (47.3%) and Kisii (45.5%), than in Nyando (17.3%) and Migori (24.6%). However, on aggregate, the awareness about RMLF remains low in the study area; thus, necessitating appropriate interventions to enhance its popularity.

The low level of awareness about RMLF among community leaders and road users is suggestive that KRB and the government have not done enough to sensitize the public about the funding initiative, its purpose and management structure. Such low level of awareness limits the extent to which community members can make their contribution to enhance transparency and accountability in the management of the road funds.

Due to the low level of awareness, the level of participation in RMLF projects was even lower. In the simplest logical sense, people can only participate in events and activities with which they are familiar. Among those who were aware of the Fund, only 43 (42.2%) had participated in the projects. Participation was relatively higher in Kisumu (54.3%) and Migori (40.0%) than in Nyando (22.2%) and Kisii (36.7%). However, the need for awareness creation campaigns remains inevitable for a higher level of community awareness and participation in road maintenance projects. Community participation plays a key role in enhancing accountability by ensuring that road agencies become accountable and responsible in their role as stewards of the fund. When community members are fully involved at various levels of the project cycle, they nurture a sense of ownership and responsibility. This is likely to spur factual reporting of cases of poor workmanship, incomplete work or embezzlement or road funds.

Empowering community members with information about RMLF is likely to encourage their participation, which in turn, will strengthen proper utilization of funds. For this matter, KRB and the Government should initiate a sensitization campaign targeting the public to improve awareness about the Fund and to spur participation in road maintenance projects. Community can play a critical role in the reporting or confirming the quality of workmanship on the ground. Thus, KRB should consider creating a system that may connects with communities directly, this may involve creating a register to capture reported issues, securing a hotline number to encourage reporting, facilitating the investigative department to establish the credibility of reported issues, as well as enforce provisions of the RLMF Act.

In addition, KRB can enhance the role of community members by publicizing annual work plans, budgets and expenditure reports to enable citizens connect with a road with which they are familiar. This will enable community members to know amount of funds set aside for their roads. In case financial reports are not correct, then community members can link up with KRB to provide their facts to necessitate investigations and appropriate disciplinary actions to agencies found culpable.

Furthermore, 33.3% of those who were aware of the RMLF were positive about project completion rate, while up to 66.7% indicated negative opinions. Consequently, RMLF was not a successful initiative, because various factors constrained the completion of its projects. Factors constraining the project

completion rate included inconsistent flow of funds (82.4%), political interference (71.6%), delay in external auditing (39.2%) and financial misappropriation by some road agencies (20.6%). Inconsistent flow of funds is likely to affect the implementation of work plans, leading to non-completion of maintenance projects. For this matter, KRB should initiate various measures to improve the flow funds, including opening up communication with road agencies, particularly when funds are disburse to avoid stagnation along the disbursement channel. KRB should also introduce electronic transfer of funds directly to agency accounts to avoid the bureaucratic bottlenecks inherent in the current system.

Without proper checks on political interference, road agencies may not live up to the expected standards of prudent resource use, quality workmanship and accountability. In view of this, KRB in collaboration with the Government should formulate clear rules, regulations and procedures for all road agencies in the country. The document should be clear on the separation of roles between committees such as DRCs and Government officials, a definition of political interference, reporting channel, dispute resolution office and sanctions, among other provisions. KRB should sensitize all agencies on the new rules, regulations and procedures and empowered to seek administrative opinion from a definite higher office to curb political interference.

External auditing of the agency financial accounts adds credibility to the annual financial reports shared with stakeholders. During the exercise, auditors collect evidence to obtain reasonable assurance that disclosures in the financial statements are free of material misstatements. The timeliness of external auditing remains crucial for the redress of issues arising, continuation of funding and staff motivation. Given the national scope, external auditing of agency accounts is a demanding exercise, requiring the Government to recruit more auditors for expeditious results.

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REFERENCES

Abbot, J. (1991). *Community Participation in Development.* University of the Witwatersrand Course Notes, Environmental Health Engineering. Department of Civil Engineering, Johannesburg.

Adams, J. (1999). *Managing Water Supply and Sanitation in Emergencies*. Oxford: Oxfam GB

American Statistical Association (1999). *Survey Research Methods Section Information*.

Arrossi, S. (1994). *Funding Community Initiatives: The Role of NGOs and Other Intermediary Institutions in Supporting Low Income Groups and Community Organisations in Improving Housing and Living Conditions in the Third World*. London: Earthscan.

Aukot, E., Okendo, D.O. and Korir, K. eds. (2010). *A Guide to Community Participation*. Nairobi: Kituo Cha Sheria.

Bryman, A. and Cramer, D. (1997). *Quantitative Data Analysis with SPSS for Windows: a guide for Social Scientists*. London: Routledge

Connor, D.M. (1997). *Participative Social Impact Assessment and Management: Cross-cultural Application*. From< http:// www. islandnet.com/-connor/cross_cultural.html> (Retrieved March 20, 2013).

Cooke, B. and Kothari, U. eds. (2001). *Participation: The New Tyranny*. London and New York: Zed Books.

De Beer, F. and Swanepoel, H. (1998). *Community Development and Beyond: Issues, Structures and Procedures*. Pretoria: J. L. Van Schaick Publishers.

Government of Kenya (1993). *Road Maintenance Levy Fund, No. 9, 1993*. Nairobi: Kenya National Law Reporting.

Government of Kenya (2000). *Kenya Roads Board Act No. 7, 1999*. Nairobi: Kenya National Law Reporting.

Government of Kenya (2006). *Management of the Roads Sub-sector for Sustainable Economic Growth, Sessional Paper No. 5 of 2006.* Nairobi: Ministry of Roads and Public Works.

Government of Kenya (2012). *Policy on Aligning the Roads Sub-Sector with the Constitution*. Nairobi: Ministry of Roads and Public Works.

Kenya Anti-Corruption Commission (2007). *Examination Report into the Systems and Policies, Procedures and Practices of the Roads Sub-Sector*. Nairobi: Directorate of Preventive Services.

Khwaja, A.I. (2004). "Is Increasing Community Participation Always a Good Thing?" *Journal of the European Economic Association*, Vol. 2, No. 2, pp. 427-436.

McCommon, C. (1993). *Community Management of Rural Water Supply and Sanitation Services: Water and Sanitation for Health (WASH) Technical Report*. Washington DC: USAID.

Moser, C.O.N. (1987). "Approaches to Community Participation in Urban Development Programs in Third World Countries", In Bamberger, ed. *Readings in Community Participation*, Washington, DC: World Bank**.**

Nachmias, C.F and Nachmias, D. (1996). *Research Methods in the Social Sciences, 5th Edition*. London: Arnold.

Nelson, N. and Wright, S. edts. (1995). *Power and Participatory Development: Theory and Practice.* London: Intermediate Publications.

Nour, A.M. (2011). "Challenges and Advantages of Community Participation as an Approach for Sustainable Urban Development in Egypt." *Journal of Sustainable Development,* Vol. 4, No. 1, pp. 79-91.

Nyangaga, F. (2007). *International Seminar on Road Financing and Investment Road Fund Management: Best Practices*. Nairobi

Owens, K.L. (2002). *Introduction to Survey Research Design*. SRL Fall 2002 Seminar Series http://www.srl.uic.edu retrieved on March 20, 2013.

Rindfleisch, A., Malter, A.J., Ganesan, S. and Moorman, C. (2008). "Cross-Sectional Versus Longitudinal Survey Research". *Journal of Marketing Research*, Vol. 45, No. 3, pp. 1-23.

Thwala, D.W.A. (2010). "Community participation is a necessity for project success: A Case Study of Rural Water Supply Project in Jeppes Reefs, South Africa". *African Journal of Agricultural Research*, Vol. 5, No. 10, pp. 970-979.

Thwala, W.D.A. (2001). *Critical Evaluation of Large-Scale Development Projects and Programs in South Africa 1980-1994*, a Master of Science Thesis, University of the Witwatersrand.

Thwala, W.D.A. (2009). "Experiences and Challenges of Community Participation in Urban Renewal

Projects: The Case of Johannesburg, South Africa." *Journal of Construction in Developing Countries,* Vol. 14, No. 2, pp. 37-54.

Warburton, D. edt. (2000). *Community and Sustainable Development: Participation in the Future*. London: Earthscan Publications Limited.

World Bank (1991). *World Development Report*. New York: Oxford University Press.

World Bank (2001). *World Development Report*. Washington DC: World Bank.

World Bank (2004). *World Development Report: Making Services Work for Poor People*. Washington DC: World Bank

SPILLOVER EFFECTS OF TOURISM POLICY CHANGES ON HOSPITALITY INDUSTRIES

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ABSTRACT

This study aimed at using the industry-related spillover model to examine the spillover effects of the change in tourism policy and employed the induced employment model and the gross-induced added value model to measure the employment income, gross added value, and employment creation. Our results showed evidence that the consumption of Chinese tourists visiting Taiwan has brought a substantial impact on the hospitality and restaurant industries. In addition, the economy of scale created in the restaurant industry was smaller than that in the hospitality industry, since Chinese tourists allocated less expenditure for food. However, the spillover effects in the restaurant industry were larger than that in the hospitality industry.

JEL: C67, D57

KEYWORDS: Change in Tourism Policy, Employment, Added Value, Spillover Effect

INTRODUCTION

In 2008, the sub-mortgage crisis in the United States induced a global financial tsunami. The crash in financial markets resulted in a negative wealth effect, causing a substantial decline in asset values. The consumption capacity of countries in Europe and North America decreased, resulting in tremendously reduced imports from Asian countries. Declining international trade severely worsened the economies of countries worldwide (Lane and Milesi-Ferretti, 2008; Apergis and Tsoumas, 2009; Farhi and Tirole, 2009; Hume and Sentance, 2009; Warnock and Warnock, 2009; McCauley and Scatigna, 2011).

Taiwanese economy has been relied heavily on manufacturing and foreign sectors. The government paid little attention to the tourism industry. Under the unbalanced industrial structure, the fragile Taiwanese economy was deteriorated during the global financial crisis beginning in 2008. The global financial crisis led to a decline in exports and a rise in unemployment. It provided the government with an opportunity to re-consider the economic development policy. One way to resolve economic difficulties was that Taiwanese government made an adjustment in the tourism policy toward Chinese people by allowing them to visit Taiwan since July 2008. In the second half of 2008, the amount of Chinese tourists visiting Taiwan reached 329,204 and increased to 972,123 by 2009. By 2010, more than a million Chinese tourists had visited Taiwan, exceeding the amount of tourists from other countries and reaching the top rank of outbound tourists. The amounts of Chinese tourists visiting Taiwan in 2010 and 2011 were respectively 1,630,735 persons and 1,784,185 persons. To cater the flourishing consumption of Chinese tourists, the providers of Taiwanese tourism industry have invested considerable capital in establishing hotels and restaurants for the rapidly growing consumption demanded of Chinese tourists. Some hospitalities provide accommodation services only, whereas some provide accommodation with food services. The relationship between hospitality and restaurant industries is close. The providers of hospitality in Taiwan purchase and renovate old buildings in downtown as hotels or restaurants. Although the accommodation price is relatively low, both the transportation and facilities cater the requirements of Chinese tourists. It is a new economic activity that has not been observed in Taiwanese economic development. Through change in the tourism policy toward Chinese people, the Taiwanese government expects to mitigate the

pressure aroused by the downturn economy and continually rising unemployment induced by the global financial crisis.

The economic development in Taiwan has predominantly been driven by promoting exports. Few have expected the adjustment in the tourism policy to create current economic growth and employment opportunities. Based on the change in tourism policy, numerous new hotels and restaurants have been provided by remodeling older buildings in urban areas and have become part of and developed within emerging tourist attractions. The government is expectant toward the economic effects generated by new economic activities and hotel and restaurant providers are confident. The amount of increased income earned by the employees and employers in the hospitality and restaurant industries right after the adjustment in the tourism policy is unknown. The present study aimed to employ an industry-related spillover model to measure the spillover effect of adjustment in the tourism policy on the hospitality and restaurant industries, in terms of employment income, gross added value, and employment creation. The estimation in employment effects presents the contribution of Chinese tourists' consumption to the income and employment for the island economy. The estimation of gross added value illustrates the returns of the investments in the hospitality and restaurant. Few prior studies regarding the aspect have covered. We contribute to the existing literature by first using the industry-related spillover model to examine the economic effects of the change in tourism policy and employed the induced employment model and gross-induced added value model to measure the employment income, gross added value and employment creation. The rest of the paper is organized as follows: Section 2 reviews previous studies. Section 3 presents the methodology which contains the establishment of empirical models. Section 4 provides the empirical evidences and the conclusion is in Section 5.

LITERATURE REVIEW

The input-output model and the computable general equilibrium (CGE hereafter) models have been widely adopted as analysis tools in studies regarding the economic effects of tourism consumption in the 1990s. Adams and Parmenter(1995) employed CGE models to examine Australia's industrial and regional structure and predict its impact on Australia's tourism-related industry. Lee(1996) used the input-output model to evaluate the economic impact of South Korea's tourism industry, and employed the Gini's coefficient and Lorenz curve to show that the tourism industry had outperformed other industries regarding employment creation and tax income. Zhou, Yanagida , Chakravorty and Leung (1997) used the input-output model and the CGE model to evaluate the economic impact of Hawaii's tourism industry and compared those provided by the two models. Frechtling and Horvath(1999) employed the regional input-output model to estimate the multiplier effects of tourists' spending in Washington, D.C., and determined that, through tourism-related industries, an increase in total tourists' spending would benefit local workers' income and employment opportunities. Gheorghe, Valentina, Marius and Camelia (2010) documented that the appropriate use of local materials and labor potential would contribute to an economic revival. By employing a Logit model, Chen(2000) investigated variations in the consumption types of Japanese, Taiwanese, and South Korean tourists visiting the U.S. during 1997 and 1998, while Asia was experiencing a financial crisis.

Since the late of 1970s, China has reformed and opened its economy. Consequently, an increasing trend of investments in China has prevailed worldwide. The economic growth rate of China has grown by more than 10% annually and its gross domestic product (GDP) has increased substantially, leading to an increasing amount of outbound tourists annually. Since the mid-1990s, a large body of studies on the behaviors of Chinese tourists has been conducted (Wang and Sheldon, 1996; Zhang and Lam, 1999; Cai, Lehto and O'leary, 2001; Kim, Guo and Agrusa, 2005; Li, Harrill, Uysal, Burnett and Zhan, 2010). Particularly according to Wang and Sheldon (1996), the amount of Chinese tourists visiting Hong Kong increased to 1,943,678 in 1994 from 21,854 in 1984, with an annual growth of 24.6%. Zhang and Qu

(1996) reported that Chinese tourists' spending in Hong Kong rose to HK$10.6 billion in 1994 from HK$8 billion in 1993. Prior to 2000, Outbound Chinese tourism was in the initial stages. Cai, Boger and O'Leary (1999) also highlighted that Chinese tourists' purchasing power would increase with China's ongoing economic development.

Since 2000, Chinese outbound tourists have substantially increased, thus attracting the attention of countries worldwide owing to their amazing consumption capacity. Generally, the consumption propensity of Chinese tourists is a shopping-oriented type.World Tourism Organization(2003) and United Nations World Tourism Organization (2008) documented that shopping was the most popular activity or itinerary for Chinese tourists. The commodities purchased were primarily local specialties. United Nations World Tourism Organization (2003) and United Nations World Tourism Organization(2008) also investigated Chinese tourists' awareness of European tourism. Song and Witt(2006) found and forecasted that Macau would meet growing tourism demand through tourists from China by using the vector autoregressive models. The demand of tourism from mainland China was usually different from those from Western countries. The tourism-related industry in Macau should pay more attentions to meet the demand of residents from mainland China.

Agarwal(2012) explored the role and economic functioning of two English coastal resorts by the implementation of business and household surveys. Agarwal(2012) further indicated that resort economies were focused on the purchase and sale of low order goods and services through examining the spatial distribution of direct economic linkages among these resorts and hinterlands. It also provided dominant factors of the scope of the local economy integrated by households and firms. Wu, Li and Song(2012) examined three major tourism consumption including shopping, accommodation and foods outside hotels of the top four source markets for tourism in Hong Kong through a time-varying parameter almost ideal demand system model. Wu, Li and Song(2012) suggested various consumption trends and models across the source markets, and a useful reference for Hong Kong tourism-related industries and the government to enhance their competitiveness.

Their expenditures on shopping account for a large portion of their travel expenses, which is the type of shopping-oriented tourists (Becken, 2003; UNWTO, 2003; UNWTO, 2008). Previous studies regarding the hospitality and restaurant industries have mainly investigated the individual operations of businesses (Tavitiyaman, Qu and Zhang, 2011). Few studies have examined the impacts of tourism on the overall economy in Taiwan; instead, most previous studies have explored the operating performance of businesses. In Taiwan, the tourism issue attracted little attention until Chinese tourists were allowed to visit Taiwan. Wang and Wen (2010) evaluated the economic effects of change in tourism policy with allowing Chinese tourists to visit Taiwan, a policy which began in 2008. Wang and Wen (2010) documented that the consumption of Chinese tourists have brought positive economic effects on the Taiwanese economy.

DATA AND METHODOLOGY

Based on the year 2006 Industry-related table released by the Taiwanese government in 2009, we employed an industry-related spillover model to measure the spillover effect of adjustment in the tourism policy on the hospitality and restaurant industries. The rest of the data in the present study are collected from the publications by the Taiwan Tourism Bureau, such as the number of international tourists visiting Taiwan in 2011, tourists' daily expenditures, expenditure items, and the average number of days that foreign tourists would visit Taiwan.

There are two types of industry-related models, which are the competitive import and the non-competitive import models. The former describes the competitive relationship between imported and exported goods within the same industry. The later formulas that the competitive relationship does little exist between

them. As for the extent of Taiwan's import level influenced by the size of the domestic demand, we employ the competitive type of the industry-related spillover model for Taiwan's trade-oriented economy. Based on the estimates from the industry-related model, we would investigate the extent of interdependence among industries. The processes of spillover effects consist of direct and indirect effects. The indirect spillover effects might include the first, the second, and the third and so on. In the present study, we just estimate the first two (On the basis of the estimates from the industry-related model, the third indirect spillover effect is gradually died out. It is trivial for the whole economy. In this study, therefore, we only obtain the estimate the direct, the first and second spillover effects.)

The supply-demand equilibrium equation of the competitive import type of the industry-related spillover model could be constructed as

$$\sum_{j=1}^{n} x_{ij} + F_i^d + E_i = X_i + M_i, i = 1,2,\cdots n \quad (1)$$

where x_{ij} denotes the per output for industry j resulting from the input of industry i; is the amount of the domestic final demand for industry i and E_i is the amount of the export demand for industry i ; X_i is the amount of production for industry i ; M_i is the amount of import for industry i. We could then rewrite equation (1) to obtain the following,

$$\sum_{j=1}^{n} a_{ij}X_j + F_i^d + E_i = X_i + M_i, i = 1,2,\cdots n \quad (2)$$

where $a_{ij}= x_{ij}/x_j$; a_{ij} is the input coefficient which denotes the input from industry i per output for industry j (i = 1, …, n; j=1,2, …n); x_j represents the total output of industry j and x_{ij} stands for per output for industry j resulting from the input of industry i. The measure of import (M_i) is specified:

$$M_i = m_i(\sum_{j=1}^{n} a_{ij}X_j + F_i^d), i = 1,2,\cdots n \quad (3)$$

From equation (3), the import coefficient could be formulated as

$$m_i = {M_i}\Big/{(\sum_{j=1}^{n} a_{ij}X_j + F_i^d)} \quad , i = 1,2,\cdots n \quad (4)$$

Combining equations (2) and (3), we obtained as follows

$$X_i - (1 - m_i)\sum_{j=1}^{n} a_{ij}X_j = (1 - m_i)F_i^d + E_i, i = 1,2,\cdots n \quad (5)$$

In terms of matrix, equation (5), which is the competitive import type of the industry-related spillover model, could be rewritten as

$$X = [I - (I - \bar{M})A]^{-1}[(I - \bar{M})F^d + E] \quad (6)$$

where A is the input coefficient matrix (n×n), A could be given

$$A = \begin{bmatrix} a_{11} & \cdots & a_{1n} \\ \vdots & \ddots & \vdots \\ a_{n1} & \cdots & a_{nn} \end{bmatrix} \quad (7)$$

I is the identity matrix; $\bar{M}$ represents the diagonal matrix of import coefficient (n×n), $\bar{M}$ is

$$\bar{M} = \begin{bmatrix} m_1 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & m_n \end{bmatrix} \quad (8)$$

$I - \bar{M}$ stands for rate of Taiwan's self-supplying ; $I - \bar{M}$ is specified as

$$I - \bar{M} = \begin{bmatrix} 1 - m_1 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & 1 - m_n \end{bmatrix} \quad (9)$$

FD deducted import from the aggregate expenditures is the matrix of Taiwanese final consumption and investment; E denotes the export vector(n×1) at period t, which is specified as

$$E = \begin{bmatrix} E_1 \\ \vdots \\ E_n \end{bmatrix} \quad (10)$$

; $[I - (I - \bar{M})A]^{-1}$is the Leontief inverse matrix, which is so called Leontief multiplier. It measures the extents of the direct and indirect spillover effects of the foreign tourists on the tourism-related industries. Assume that there is no impact on Taiwan's export from the consumption of foreign tourists; the industry-related spillover model could be modified as

$$\begin{aligned} X &= [I - (I - \bar{M})A]^{-1}[(I - \bar{M})F^d] \\ &= \left[(I - \bar{M})F^d\right] + (I - \bar{M})A\left[(I - \bar{M})F^d\right] + [(I - \bar{M})A]^2\left[(I - \bar{M})F^d\right] \\ &\quad + [(I - \bar{M})A]^3\left[(I - \bar{M})F^d\right] + \cdots \\ &= \left[(I - \bar{M})F^d\right] + (I - \bar{M})A\left[(I - \bar{M})F^d\right](I + \left[(I - \bar{M})F^d\right] + [(I - \bar{M})A]^2 + \cdots) \\ &= \underbrace{\left[(I - \bar{M})F^d\right]}_{\text{Direct Spillover Effects}} + \underbrace{[I - (I - \bar{M})A]^{-1}(I - \bar{M})A\left[(I - \bar{M})F^d\right]}_{\text{Indirect Spillover Effects}} \end{aligned} \quad (11)$$

Let Leontief inverse matrix $[I - (I - \bar{M})A]^{-1}$ be B^*, equation (8) could be reformulated as

$$X = \underbrace{\left[(I - \bar{M})F^d\right]}_{\text{Direct Spillover Effects}} + \underbrace{B^*(I - \bar{M})A\left[(I - \bar{M})F^d\right]}_{\text{Indirect Spillover Effects}} \quad (12)$$

Industry-related Spillover Model:

Following equation (11), we would estimate the direct, the first, the second indirect spillover effects. The measures could be constructed: The direct spillover effect is the product of change in domestic final demand (δF_i^d) and rate of self-supplying($I - \bar{M}$), that is

$$(I - \bar{M})\delta F_1^d \quad (13)$$

The First Indirect Spillover Effects:

Referring to equation (11), the first indirect spillover effect, which is the domestic induced amount of production (δX_1), is measured as

$$\delta X_1 = B_L[(I - \bar{M})\delta F_1^d] \quad (14)$$

The Second Indirect Spillover Effects:

In order to measure the second indirect spillover effects, we calculate that the rate of income of the employed (W^L) and the gross value added (W^G) measured by the ratio of the induced employment income (w_j^L)to the total input for industry j (X_j) are

$$W^L = \left[w_1^L w_2^L \cdots w_n^L\right], w_j^L = \frac{v_j^L}{X_j}, j = 1,2,\cdots n \quad (15)$$

where v_j^L is the employ income in the industry j. Combining equations (14) and (15), the induced employment income is

$$W^L \delta X_1 \quad (16)$$

The increase in consumption expenditure is

$$\bar{c} W^L \delta X_1 \quad (17)$$

where $\bar{c}$ denotes the Taiwan's average propensity to consumption in 2011

Therefore, the second change in increase in final demand for industry j is yielded

$$\delta F_2^d = C\bar{c}W^L\delta X_1 \quad (18)$$

where

$$C = \begin{bmatrix} c_1 \\ \vdots \\ c_n \end{bmatrix} \begin{bmatrix} f^d{}_{(c)1} \div (\sum_{k=1}^{n} f^d{}_{(c)k}) \\ \vdots \\ f^d{}_{(c)n} \div (\sum_{k=1}^{n} f^d{}_{(c)k}) \end{bmatrix} \quad (19)$$

Accordingly, the second indirect spillover effects could be measured as

$$\delta X_2 = B^*[(I - \bar{M})\delta F_2^d] \quad (20)$$

Combined equations (13), (14) and (20), the formula that we could estimate the total spillover effects of the consumption expenditures from Chinese Tourists on Taiwan's economy could be restated as

$$\underbrace{TE}_{\substack{\text{Total} \\ \text{Spillover Effects}}} = \underbrace{(I - \bar{M})\delta F_1^d}_{\substack{\text{Direct Spillover} \\ \text{Effects}}} + \underbrace{B^*\left[(I - \bar{M})\delta F_1^d\right]}_{\substack{\text{First Indirect} \\ \text{Spillover Effects}}} + \underbrace{B^*\left[(I - \bar{M})\delta F_2^d\right]}_{\substack{\text{Second Indirect} \\ \text{Spillover Effects}}} \quad (21)$$

Plugging the rate of induced employment income (w_j^L) and rate of gross added value(w_j^G) into equation(21), we could measure the induced employment income, gross added value and furthermore employment effect in industry j, which is hospitality or restaurant industry. The measurement is the following: Combined equations (21) and (15), the formula that we could use to measure the direct and indirect induced employment income of the consumption expenditures from Chinese tourists in

hospitality and restaurant industries could be restated as

$$\underbrace{TI^{L}}_{\substack{\text{Total Induced}\\ \text{Employment Income}}} = \underbrace{w_j^{L}(I-\bar{M})\delta F_1^{d}}_{\substack{\text{Direct Induced}\\ \text{Employment Income}}} + \underbrace{w_j^{L}B^{*}\left[(I-\bar{M})\delta F_1^{d}\right]}_{\substack{\text{First Indirect Induced}\\ \text{Employment Income}}} + \underbrace{w_j^{L}B^{*}[(I-\bar{M})\delta F_2^{d}]}_{\substack{\text{Second Indirect}\\ \text{Induced Emploment Income}}} \quad (22)$$

The employment coefficient matrix (H_i) is the required labor force (L_i) as producing (X_i). The employment coefficient matrix (H_i) could be computed as

$$H_i = \frac{L_i}{X_i}, \quad i = 1, \dots, n \quad (23)$$

where

$$H_i = \begin{bmatrix} h_1 & \cdots & 0 \\ \vdots & \ddots & \vdots \\ 0 & \cdots & h_n \end{bmatrix}, \; h_i = \frac{L_i}{X_i}, i = 1, \dots, n \quad (24)$$

The change in employment (δL_i)would be

$$\delta L_i = \{(I-\bar{M})\delta F_1^{d} + B^{*}\left[(I-\bar{M})\delta F_1^{d}\right] + B^{*}\left[(I-\bar{M})\delta F_2^{d}\right]\}H_i \quad (25)$$

in which employment effect is equal to spillover effects multiplied by employment coefficient. In the present study, we could employ equation (25) to measure the change in employment induced by tourism consumption from Chinese tourists, respectively.

$$W^{G} = \left[w_1^{G} w_2^{G} \cdots w_n^{G}\right], w_j^{G} = \frac{v_j^{G}}{X_j}, j = 1,2, \cdots n \quad (26)$$

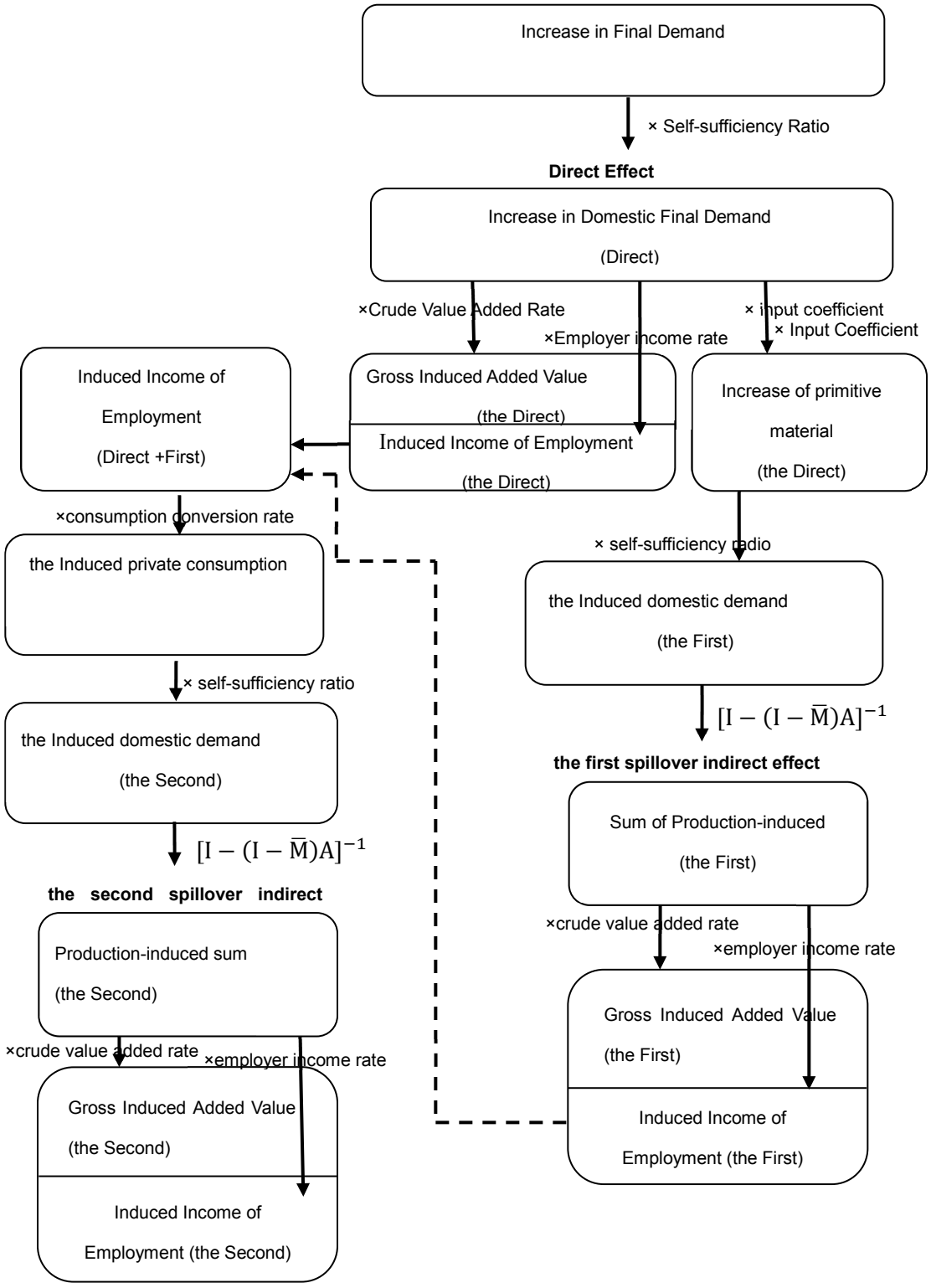
where v_j^{G} is the gross added value in the industry j. Plugging the rate of gross added value(w_j^{G}) in equation (26) into equation (21), we obtain equation (27), consisting of the direct gross added value, the first and the second indirect gross added value.

$$\underbrace{TV^{G}}_{\substack{\text{Total Gross}\\ \text{Added Value}}} = \underbrace{w_j^{G}(I-\bar{M})\delta F_1^{d}}_{\substack{\text{Direct Gross}\\ \text{Added Value}}} + \underbrace{w_j^{G}B^{*}\left[(I-\bar{M})\delta F_1^{d}\right]}_{\substack{\text{First Indirect Gross}\\ \text{Added Value}}} + \underbrace{w_j^{G}B^{*}[(I-\bar{M})\delta F_2^{d}]}_{\substack{\text{Second Indirect Gross}\\ \text{Added Value}}} \quad (27)$$

The estimating procedures of industry-related spillover model could be demonstrated concisely as Figure 1. Table 1 shows that, since the change in tourism policy toward Chinese people, the amount of Chinese tourists visiting Taiwan has increased rapidly, causing development of the hospitality industry. The direct induced employment income in the hospitality industry increased from US$30,718.5 thousand in 2008 to more than US$200 million in 2011. Moreover, the total employment income created after the first and the second indirect induced employment were US$30,915.8 thousand and US$204,981.1 thousand in 2008 and 2011, respectively. Concurrently, the consumption of Chinese tourists has induced a considerable amount of employment opportunities in the hospitality industry. The employment creation increased from 1,992 persons to 13,204 persons during 2008 to 2011. As mentioned above, Chinese tourists' consumption in the hospitality industry has an increase of US$534,960 thousand in induced employment income, accounting for 10.80% of those in overall industries. The consumption of Chinese tourists has also created 34,461 employment opportunities in the hospitality industry, accounting for 27.49% of the

employment creation in the overall industries. It greatly helps the lethargic Taiwanese economy.

Figure1. Flow of Industry-related Spillover Model



In the section, we discuss the gross added value from the perspective of providers. The gross added value is the operational income of restaurant operators, including labor wage, pre-tax operating income, fixed capital depreciation, and various taxes. Table 2 reports that Chinese tourists generated US$50,462.2 thousand of gross added value for Taiwanese hospitality operators in 2008. Subsequently, with the increasing number of Chinese tourists, the gross added value demonstrated an incremental tendency, reaching US$334,579.6 thousand in 2011 and generating enormous income for the hospitality industry in Taiwan.

Table 1: The Employment Income and Employment Creation in Hospitality Industry

Year	(1) Direct Induced Employment Income (ten thousand dollars)	(2) First Indirect Induced Employment Income (ten thousand dollars)	(3) Second Induced Employment Income (ten thousand dollars)	(4)=(1)+(2)+(3) Total Induced Employment Income	Employment Creation (Persons)
2008	3,071.85	12.44	7.29	3,091.58	1,992
2009	10,790.20	43.69	25.62	10,859.51	6,995
2010	18,926.19	76.63	44.93	19,047.76	12,270
2011	20,367.29	82.47	48.36	20,498.11	13,204
Total	53,155.53	215.23	126.20	53,496.96	34,461

1) Table 1 presents that, since the change in the tourism policy toward Chinese people, the amount of Chinese tourists visiting Taiwan has increased rapidly, causing the development of the hospitality industry. Based on the industry-related price model in the present study, the empirical results were obtained.

2) The amount for year 2008 is covered for the periods from July to December.

3) According to the data from the Taiwanese Tourism Bureau, Chinese tourists stayed in Taiwan for an average of five days.

4) The expenditure amount of the Chinese tourists in Taiwan is the US$213.10, US$232.11, US$246.23 and US$236.48 per day in 2008, 2009, 2010 and 2011, respectively. The average expenditure on the accommodation accounts for 29.15% of total expenditures.

Since allowing Chinese people to travel Taiwan, Chinese tourists' consumption expenses have generated a total of US$873,202.1 thousand in the hospitality industry, whereas the gross-induced added value is US$867,629.1 thousand, representing approximately 99.36% of the overall gross-induced added value. The first and the second indirect gross added value account for only 0.40% and 0.24%, respectively. Therefore, the gross added value of the hospitality industry has focused on direct effects, yielding minimum inducing effects. The travel expenses of Chinese tourists in Taiwan were only second to those of Japanese tourists. However, their average expenses on hospitality were merely US$67.62 per day, accounting for about 29.15% of their total expenses, which was apparently lower when compared to those of tourists from other countries. Chinese tourists' traveling expenses are allocated mainly to shopping, accounting for nearly 60% of the total expenses. Therefore, Chinese tourists might belong to the type of shopping-oriented tourists. If the consumption model of Chinese tourists resembles that of European and US tourists in emphasizing hospitality services, the spillover effect of Chinese tourists on the economy of the hospitality industry would be further enlarged.

The relation between the hospitality and restaurant industries is close. However, Chinese tourists allocate only US$15.50 per day on average to cover such expenses, accounting for only 6.68% of total expenses, lower than hospitality expenses. This indicates that Chinese tourists still have considerable room for growth regarding this aspect. Table 3 shows the induced employment income and employment effects on the restaurant industry in Taiwan caused by Chinese tourists. In 2008, Chinese tourists' consumption expenses generated employment-induced income of US$9,816.2 thousand and employment creation of 402 opportunities in the restaurant industry. As the number of Chinese tourists increased, the induced employment income reached US$65,084.1 thousand, and employment creation reached 2,688 opportunities in 2011. Since the change in tourism policy toward Chinese tourists, employment income in the restaurant industry increased by US$169,859.6 thousand and 6,962 jobs were created.

Table 2: The Gross Added Value in Hospitality Industry

Year	(1) Direct Gross Added Value	(2) First Indirect Gross Added Value	(3) Second Indirect Gross Added Value	(4)=(1)+(2)+(3) Total Gross Added Value
2008	5,014.02	20.30	11.90	5,046.22
2009	17,612.27	71.31	41.81	17,725.40
2010	30,892.20	125.09	73.34	31,090.63
2011	33,244.42	134.61	78.93	33,457.96
Total	86,762.91	351.31	205.99	87,320.21

1) *Based on the year 2006 Industry-related table released by the Taiwanese government in 2009, we employed an industry-related spillover model to estimate the gross added value Chinese tourists generated in hospitality industry.*
2) *The amount for year 2008 is covered for the periods from July to December.*
3) *The unit of amount is ten thousand US dollars.*
4) *According to the data from the Taiwanese Tourism Bureau, Chinese tourists stayed in Taiwan for an average of five days.*
5) *The expenditure amount of the Chinese tourists in Taiwan is the US$213.10, US$232.11, US$246.23 and US$236.48 per day in 2008, 2009, 2010 and 2011, respectively. The average expenditure on the accommodation accounts for 29.15% of total expenditures.*

Table 3: The Employment Income and the Employment Creation in Restaurant Industry

Year	(1) Direct Induced Employment Income(ten thousand US dollars)	(2) First Indirect Induced Employment Income(ten thousand US dollars)	(3) Second Indirect Induced Employment Income(ten thousand US dollars)	(4)=(1)+(2)+(3) Total Induced Employment Income(ten thousand US dollars)	Employment Creation (Persons)
2008	750.18	202.67	28.77	981.62	402
2009	2,635.07	711.90	101.06	3,448.03	1,413
2010	4,621.96	1,248.68	177.26	6,047.90	2,479
2011	4,973.89	1,343.76	190.76	6,508.41	2,668
Total	12,981.10	3,507.01	497.85	16,985.96	6,962

1) *Based on the year 2006 industry-related table released by the Taiwanese government in 2009, we employed an industry-related spillover model. Table 3 shows the induced employment income and employment effects on the restaurant industry in Taiwan caused by Chinese tourists over the years. Based on the industry-related price model in the present study, the empirical results were obtained.*
2) *The amount for year 2008 is covered for the periods from July to December.*
3) *According to the data from the Taiwanese Tourism Bureau, Chinese tourists stayed in Taiwan for an average of five days.*
4) *The expenditure amount of the Chinese tourists in Taiwan is the US$213.10, US$232.11, US$246.23 and US$236.48 per day in 2008, 2009, 2010 and 2011, respectively. The average expenditure on the accommodation accounts for 29.15% of total expenditures.*

As shown in Table 4, the gross added value is the operating income for restaurant operators. In 2008, the direct gross added value of the restaurant industry was US$10,912.2 thousand, with US$2,948.1 thousand for the first indirect gross-induced value and US$418.5 thousand for the second indirect gross-induced value. The total spillover amount of the gross added value was US$14,278,800. In 2011, the total spillover amount of the gross added value was US$94,672.8 thousand, which is 6.6 times greater than that of 2008. Between 2008 and 2011, the gross added value for the restaurant industry was US$247,081.6 thousand, when the first and the second indirect gross added value were respectively US$188,826.1 thousand and US$51,013.7 thousand, thus accounting for 20.65% and 2.93%, respectively, of the total gross added value.

Table 4: The Gross Added Value in Restaurant Industry

Year	(1) Direct Gross Added Value	(2) First Indirect Gross Added Value	(3) Second Indirect Gross Added Value	(4)=(1)+(2)+(3) Total Gross Added Value
2008	1,091.22	294.81	41.85	1,427.88
2009	3,833.04	1,035.54	147.00	5,015.59
2010	6,723.21	1,816.36	257.85	8,797.42
2011	7,235.14	1,954.66	277.48	9,467.28
Total	18,882.61	5,101.37	724.18	24,708.16

1) In Table 4, based on the year 2006 industry-related table released by the Taiwanese government in 2009, we employed an industry-related spillover model to estimate the gross added value is the operating income for restaurant operators.
2) The amount for year 2008 is covered for the periods from July to December. The unit of amount is ten thousands US dollars.
3) According to the data from the Taiwanese Tourism Bureau, Chinese tourists stayed in Taiwan for an average of five days.
4) The expenditure amount of the Chinese tourists in Taiwan is the US$213.10, US$232.11, US$246.23 and US$236.48 per day in 2008, 2009, 2010 and 2011, respectively. The average expenditure on the dining accounts for 6.68% of total expenditures.

CONCLUDING COMMENTS

In the present study, based on the year 2006 Industry-related table released by the Taiwanese government in 2009, we employed an industry-related spillover model to measure the spillover effect of adjustment in the tourism policy on the hospitality and restaurant industries. The rest of the data are collected from the publications by the Taiwan Tourism Bureau, such as the number of international tourists visiting Taiwan in 2011, tourists' daily expenditures, expenditure items, and the average number of days that foreign tourists would visit Taiwan. The estimation in employment effects presents the contribution of Chinese tourists' consumption to the income and employment for the island economy. The estimation of gross added value illustrates the returns of the investments in the hospitality and restaurant. We contribute to the existing literature by first using the industry-related spillover model to examine the economic effects of the change in tourism policy and employed the induced employment model and gross-induced added value model to measure the employment income, gross added value and employment creation.

Owing to the change in the tourism policy in Taiwan toward Chinese people, the consumption of Chinese tourists has brought the substantial impact on the hospitality and restaurant industries. We investigated the induced employment income, employment creation, and gross added value resulting from the consumption of Chinese tourists visiting Taiwan. The induced employment income and employment creation correlates the workers' livelihood in the hospitality and restaurant industries. The gross added value reflects operating performance of providers in the hospitality and restaurant industries. The consumption of Chinese tourists has generated enormous economic effects on the depressed Taiwanese economy. The induced employment income in the hospitality industry was US$534,960 thousand, accounting for about 10.80% of that in the overall industries. Moreover, employment creation in the hospitality industry generated 34,461 jobs, accounting for 27.49% of that in the overall industries. The gross added value increased by US$867,629.1 thousand, resulting mainly from direct effects; the first and the second indirect gross added value accounted for only 0.40% and 0.24%, respectively.

The economy of scale created by the restaurant industry was smaller than that by the hospitality industry, since Chinese tourists allocated less expenditure for food. However, the spillover effects in the restaurant industry were larger than that in the hospitality industry. The induced employment income increased by US$169,859.6 thousand, and 6,962 employment opportunities were created. The total spillover amount of the gross added value was US$247,081.6 thousand, mainly resulting from direct effects. However, the first and second indirect gross added values respectively accounted for 20.65% and 2.93% of the total spillover amount, in contrast to that in the hospitality industry, which was significantly different. Thus, the empirical results suggested that the spillover effects in the hospitality industry were smaller than that in the restaurant industry. However, since the direct effects in the hospitality industry were larger than that in the restaurant industry, the magnitude of employment income in the hospitality industry was larger.

REFERENCES

Adams, P. D. and Parmenter, B. P. (1995), An Applied General Equilibrium Analysis of the Economic Effects of Tourism in a Quite Small, Quite Open Economy. *Applied Economics*, 27, 985-994.

Agarwal, S. (2012), Resort Economy and Direct Economic Linkages. *Annals of Tourism Research* 39(3), 1470-1494.

Apergis, N. and Tsoumas, C. (2009), A Survey of the Feldstein-Horioka Puzzle: What Has Been Done and Where We Stand. *Research in Economics*, 63, 64-76.

Becken, S., Chinese Tourism to New Zealand. Landcare Research (2003), <http://www.landcareresearch.co.nz/research/sustainablesoc/tourism/documents/Chinese_tourism.pdf.

Cai, L. A., Boger C. and O'Leary, J. (1999) The Chinese Travelers to Singapore, Malaysia, and Thailand: A unique Chinese outbound market. *Asia Pacific Journal of Tourism Research*, 3(2), 2-13.

Cai, Liping A., Lehto, Xinran You and O'leary, J. (2001), Profiling the U.S.- Bound Chinese Travelers by Purpose of Trip. *Journal of Hospitality Marketing & Management*, 7(4), 3-16.

Chen, J. S. (2000), Examining Asian Outbound Travelers' Consumption Patterns after the 1997 Asian Economic Crisis. *Journal of Hospitality & Leisure Marketing*, 7(3), 67-80.

Doner, R. (1991), Approaches to the Politics of Economic Growth in Southeast Asia. *Journal of Asian Studies*, 50(4), 398-431.

Farhi, E. and Tirole, J. (2009), Leverage and the Central Banker's Put. *American Economic Review*, 99(2), 589-593.

Frechtling, D. C. and Horvath, E. (1999), Estimating the Multiplier Effects of Tourism Expenditures on a Local Economy through a Regional Input-Output Model. *Journal of Travel Research*, 37 4, 324-332.

Gheorghe, Z., Valentina, V., Marius, S. and Camelia, S. (2010), Tourism and Economic Development in Romania: Input-Output Analysis Perspective. *Romanian Journal of Economics*, 31, 2(40), 5-37.

Hume, M. and Sentence, A. (2009), The Global Credit Boom: Challenges for Macroeconomics and Policy. *Journal of International Money and Finance*, 28, 1426-1461.

Kim, Samuel Seongseop, Guo, Yingzhi and Agrusa, Jerome (2005), Preference and Positioning Analyses of Overseas Destinations by Mainland Chinese Outbound Pleasure Tourists. *Journal of Travel Research*, 44(2), 212-220.

Lane, P. and Milesi-Ferretti, G. (2008), The Drivers of Financial Globalization. *American Economic Review: Papers and Proceedings*, 98(2), 327-332.

Lee, C. K. (1996), Input-Output Analysis and Income Distribution Patterns of the Tourism Industry in South Korea. *Journal Asia Pacific Journal of Tourism Research*, 1(1), 35-49.

Li, Xiang (Robert), Harrill, Rich, Uysal, Muzaffer, Burnett, Traverse and Zhan, Xiaofeng (2010), Estimating the Size of the Chinese Outbound Travel Market: A Demand-Side Approach. *Tourism Management*, 31(2), 250-259.

McCauley, R. and Scatigna, M. (2011), Foreign Exchange Trading in Emerging Currencies: More Financial, More Offshore. *BIS Quarterly Review*, 67-75.

Song, H. and Witt, S. F. (2006), Forecasting International Tourist Flows to Macau. *Tourism Management*, 27, 214-224.

Tavitiyaman, Pimtong, Qu, Hailin and Zhang, Hanqin Qiu (2011), The Impact of Industry Force Factors on Resource Competitive Strategies and Hotel Performance. *International Journal of Hospitality Management*, 30(3), 648-657.

United Nations World Tourism Organization (UNWTO), Chinese Outbound Tourism (Madrid, Spain: UNWTO, 2003), 31-122.

United Nations World Tourism Organization (UNWTO), The Chinese Outbound Travel Market with Special Insight into the Image of Europe as a Destination (Madrid, Spain: UNWTO, 2008), 47-54

Wang, Y. and Sheldon, P. J. (1996), The Sleeping Dragon Awakes: The Outbound Chinese Travel Market. *Journal of Travel & Tourism Marketing*, 4(4), 41-54.

Wang, Shu-Mei and Wen, Pei-Chang (2010), The Economic Effects of Chinese Tourists on Taiwan Economy. *Prospect Quarterly*, 11(3), 133-175.

Warnock, F. and Warnock, V. (2009), International Capital Flows and US Interest Rates. *Journal of International Money and Finance*, 28(6), 903-919.

Wu, C. G., Li, G. and Song, H. (2012), Economic Analysis of Tourism Consumption Dynamics: A Time-Varying Parameter Demand System Approach. *Annals of Tourism Research*, 39(2), 667-685.

Zhang, Hanqin Qiu and Qu, Hailin (1996), The Trends of China's Outbound Travel to Hong Kong and Their Implications. *Journal of Vacation Marketing*, 2(4), 373-381.

Zhang, Hanqin Qiu and Lam, T. (1999), An Analysis of Mainland Chinese Visitors' Motivations to Visit Hong Kong. *Tourism Management*, 20(5), 587-594.

Zhou, D., Yanagida, J. F., Chakravorty, U. and Leung, P. (1997) Estimating Economic Impacts from Tourism. *Annals of Tourism Research*, 24(1), 76-89.

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