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OPEN ACCESS ARTICLE

HOME BIAS AND NETWORK EFFECT OF INDONESIAN MIGRANT WORKERS ON MALAYSIA'S EXTERNAL TRADE

Fariastuti Djafar[1*], Mohd Khairul Hisyam Hassan[1]

[1]Department of Economics, Faculty of Economics and Business, Universiti Malaysia Sarawak, Malaysia

*dfariastuti@feb.unimas.my

Abstract

Limited studies on the effect of immigrant workers on trade have been carried out in Asia even though some Asian countries have become important labour sending or labour receiving countries. This study attempts to fill the gap by examining the effect of Indonesian migrant workers on the external trade of Malaysia. Three objectives are proposed. The first objective is to examine the long-run relationship between Indonesian migrant workers, and export and import, respectively. This is followed by examining the causality between Indonesian migrant workers and Malaysia's external trade, as well as the extent to which Indonesian migrant workers affect Malaysia's external trade in the third objective. The secondary data are analysed utilizing the Vector Autoregressive (VAR) framework. The findings show that Indonesian migrant workers do not have any significant effect on Malaysia's import, thus indicating the insignificance of the home bias effect. The outcomes also reveal a negative and significant effect of Indonesian migrant workers on exports implying the absence of a network effect. This could be due to several factors, such as similarities in culture between Malaysia and Indonesia, low-skilled immigrant workers, the immigrants working in non-tradable sectors, the import substitution policy in Indonesia, and Indonesia not being the main trading partner of Malaysia.

Key words

Import; Export; Migrant Workers; Indonesia; Malaysia

INTRODUCTION

Previous studies concerning the relationship between external trade and migrant workers tend to examine either the effect of trade on migrant workers or the effect of migrant workers on trade, which raise different issues. The main issue pertaining to

the effect of trade on migrant workers is whether the country wants to import labour intensive products or the labour itself, which, consequently, will encourage or discourage workers to migrate to host countries (Carbough, 2007). Meanwhile, the main issue relating to the effect of migrant workers on trade is the mechanism concerning how migrant workers influence the external trade of their host countries. Some of the previous studies have mixed these two different issues; hence, generating a rather different conclusion (Gaston & Nelson, 2013).

This study focuses on the effect of Indonesian migrant workers on Malaysia's external trade. Previous studies on this issue tended to concentrate on developed countries as the host country to migrant workers. Although some countries in Asia, such as the United Arab Emirates, Saudi Arabia, South Korea, Japan, Singapore and Malaysia, have become important host countries for migrant workers from the other Asian countries, studies on Asian host countries are limited. Studies mainly concentrate on the role of Asian migrant workers in trade in developed countries, such as Australia (Lung, 2008), New Zealand (Qian, 2008) and Germany (Akkoyunlu, 2009), rather than in host countries in Asia.

This study will contribute to the studies on immigrant workers and the external trade relationship with particular reference to the effect of immigrant workers on the external trade in South East Asian countries. Among these countries, Malaysia, as the study site, is the top receiving migrant country while Indonesia is the top sending migrant country with Malaysia as its main destination country. Indonesia is the closest neighbouring country to Malaysia, with which it shares a land border. Hence, leading to low costs and rapid mobility between the countries.

Three objectives are proposed in this study. The first objective is to examine the long-run relationship between Indonesian migrant workers and Malaysia's external trade, followed by examining the causality between these two variables in the second objective, and the extent to which the immigrant workers affect trade in the third objective. The paper is presented as follows. The next two sections present an overview of social and economic conditions in Indonesia and Malaysia, followed by the literature review. The fourth section explains the methodology, while the fifth section describes the empirical results and discussions. The last section presents the conclusions.

OVERVIEW OF SOCIAL AND ECONOMIC CONDITIONS IN INDONESIA AND MALAYSIA

Malaysia has a better economic condition compared to Indonesia, while Indonesia is a large country in terms of territory and demography. In 2010, Malaysia's per capita income (USD 8,418) was almost three times higher than that of Indonesia (USD 2,981) (International Monetary Fund, 2012). In contrast, Malaysia's territory (329,847 km^2) is only 6% of that of Indonesia (5,193,250 km^2), and the population size of Malaysia in

2010 (28.3 millions), which is only around 12% of the population size of Indonesia (237.6 millions). In Indonesia, approximately 8.3 million people are unemployed, as opposed to 0.4 million in Malaysia (Asian Development Bank, 2012). A strong domestic demand and the huge market in Indonesia have now made this country attractive to foreign investors including those from Malaysia. Several Palm Oil companies and Malaysian banks operate in Indonesia.

Malaysia's economic structure is mainly dependent upon the industry and service sectors which were around 90% of the total output in 2010 (Table 1). Malaysia is rapidly becoming a modernized country, as indicated by the increasing share of employment in the "others" category including construction, trade and the other service sectors from 56% in 1995 to 69% in 2010. The share of the agricultural and manufacturing sectors in the total employment of Malaysia has declined steadily from approximately 43% in 1995 to about 31% in 2010.

TABLE 1. STRUCTURE OF OUTPUT AND EMPLOYMENT IN MALAYSIA, 1995-2010

Output (%)	1995	2000	2005	2010
Agriculture	12.7	8.3	8.4	10.5
Industry	40.5	46.8	46.9	41.5
Services	46.8	44.9	44.7	48.0
Employment (%)				
Agriculture	20.0	16.7	14.6	14.2
Manufacturing	23.3	23.5	19.8	16.7
Mining	0.4	0.3	0.4	0.5
Others	56.3	59.5	65.2	68.6

Source: Asian Development Bank, 2012

China, Singapore, Japan and the USA are the main trading partners with Malaysia (Table 2), while Indonesia is the sixth largest importing country to Malaysia. The share of manufactured products in Malaysia's total exports (68%) is the largest, followed by the share of oil and gas (12%), and palm oil (9%). Malaysia's imports are mainly intermediate goods (67%), which are used as inputs for further production and generate labour demand. The contribution of consumption goods to total imports is approximately 7% (Economic Planning Unit, 2012).

TABLE 2. MAIN TRADING PARTNERS OF MALAYSIA, 2011

Major Trading Partners (Export)	Major Trading Partners (Import)*
China (18 %)	Singapore (21 %)
Singapore (13 %)	China (14 %)
Japan (11 %)	Japan (10 %)
United States (US) (9 %)	United States (US) (8 %)

Source: Economic Planning Unit, 2012

Notes: Figures in parenthesis provide the share of each country in Malaysia's total exports and imports.

The trade balance between Malaysia and Indonesia is mainly a surplus for Malaysia (Figure 1). Between 1999 and 2011, Malaysia's export value to Indonesia was consistently greater than its import value except in 2007 and 2008. Mineral fuels and machinery have a greater share in Malaysia's total exports to Indonesia compared to the other export commodities. The largest imported product to Malaysia from Indonesia in 2009 was manufactured products (23%) followed by mineral fuels (19%), and animal and vegetable oils (17%) (Table 3). The share of animal and vegetable oil to the total imports in 2009 dropped sharply compared to the share of this product in 2005 (30%), and was replaced by the increasing share of other products, such as food products (13%) and manufactured goods (23%).

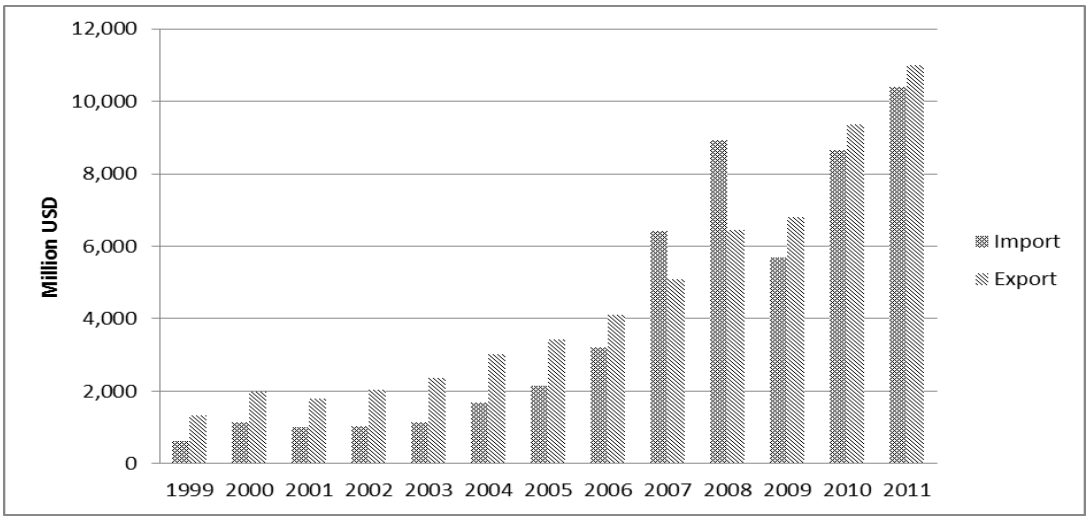

FIG 1. TRADE BALANCE BETWEEN MALAYSIA AND INDONESIA, 1999-2011

Source: Asian Development Bank, 2012

TABLE 3. MAIN IMPORT AND EXPORT COMMODITIES, MALAYSIA-INDONESIA, 2005 & 2009

Commodity	Import from Indonesia (%)		Export to Indonesia (%)	
	2005	2009	2005	2009
Food	8.41	12.64	6.07	5.35
Beverages and Tobacco	1.11	1.13	2.13	2.61
Crude Materials, Inedible	1.48	2.21	1.55	2.17
Mineral Fuels, Lubricants, etc.	20.75	19.37	22.95	25.59
Animal and Vegetable Oils and Fats	30.49	17.34	0.91	1.41
Chemicals	6.56	7.67	19.61	17.80
Manufactured Goods	19.76	22.92	12.63	16.49
Machinery and Transport Equipment	9.50	13.75	28.74	24.11
Miscellaneous Manufactured Articles	1.77	2.48	3.33	3.56
Miscellaneous Trans. and Commod.	0.16	0.49	2.07	0.92
Total	100.00	100.00	100.00	100.00

Source: Department of Statistics, 2012.

Not only does Malaysia trade with Indonesia, but it also receives labour from Indonesia. The high demand for low-paid workers in Malaysia matches the high supply of low-skilled workers from Indonesia. These workers are willing to work in Malaysia because of the low wages and the difficulty in finding jobs in Indonesia. The stronger value of the Malaysian ringgit over the Indonesian Rupiah has encouraged Indonesians to seek employment in Malaysia. The jobs considered as being low-paid jobs by the Malaysians are considered as relatively better paid jobs by the Indonesian migrant workers. Indonesian migrant workers dominate all sectors in Malaysia except in manufacturing and services. The largest number of Indonesian migrant workers is in the plantation sector (85%) followed by construction (70%), maids (70%) and agriculture (53%) (Table 4).

TABLE 4: FOREIGN WORKERS BY SECTOR AND COUNTRY OF ORIGIN, 2012.

	Maid	Construction	Manufacturing	Services*	Plantation	Agriculture**	Total (%)
Indonesia	69.88	70.16	20.08	16.73	84.54	53.46	47.53
Nepal	0.05	2.41	41.58	22.39	1.47	8.74	19.41
Bangladesh	0.03	11.92	12.22	7.70	4.14	5.46	8.43
Myanmar	0.06	5.82	15.74	9.47	0.75	3.60	8.21
Others	29.98	9.69	10.38	43.70	9.11	28.74	16.41
Total (%)	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Total Foreign Worker	142,744	228,560	609,589	140,340	319,858	144,778	1,585,869

Source: Department of Immigration, 2012.
Notes: * other than maid ** other than plantation

LITERATURE REVIEW

Two mechanisms are usually utilized to explain the effect of immigration on trade, namely, the "home bias effect" and the "network effect". The "home bias effect", or "transplanted home-bias effect" (White, 2007), or "preference effect" (Gould, 1994) refers to the immigrant preference to consume products from their home countries (Gould, 1994; White, 2007). Meanwhile, the "network effect" (White, 2007), or "information effect" (Wagner et al, 2002) refers to the information about the home country supplied by the immigrants, which reduces the transaction costs in conducting trade between the home and host countries of the immigrants (Wagner et al, 2002; White, 2007).

The comparison between the elasticity of import and the elasticity of export to immigration may identify the dominant mechanism in linking immigration and trade. External trade in the European Union (EU) -15 countries (Parsons, 2005) and Italy (Bratti et al, 2012) is dominated by the home bias effect in which immigration has a greater effect on imports than on exports. In addition, Bratti et al. (2012) argue that the greater effect of immigration on imports than on exports may indicate the

different taste between immigrants and natives. On the other hand, Aleksynska and Peri (2012), in their study on Organisation for Economic Co-operation and Development (OECD) countries, state that immigrant workers have a strong positive network effect on the exports of the host country.

Many factors may influence the immigration and trade relationship, such as remittance, the level of skill of immigrant workers, and the income per capita of the home country. Parsons (2005) argues that exports from the host country to the home country may also increase due to remittance, which will increase the income of families in the home country, which may create a preference for the products from the host country. This is demonstrated in the way Mexican immigrants in the United States (US) share their experiences in the US with their families in their home country (Parsons, 2005).

The levels of skill of immigrants may have different effects on the external trade of their host countries. The study by Hijzen and Wright (2010) on immigrant workers in the United Kingdom (UK) shows that the relationship between skilled immigrants and imports is complementary while between unskilled immigrants and imports it is one of substitution. This is due to the imports containing large quantities of goods produced by low-skilled workers. Thus, a large number of low-skilled immigrant workers in the host country may reduce the import of these products.

The income in the home country of immigrant workers may affect the elasticity of import and export to immigration. White (2007) in his study on the US, reveals that the immigrants from low-income countries will have a greater effect on imports than on exports due to the home bias effect. Qian (2008) also shows that imports in New Zealand are more influenced by immigrants from low-income countries than immigrants from high-income countries. Similarly, Piperakis (2011) reports that low-skilled immigrants and immigrants from low-income countries positively affect imports and exports, while high-skilled immigrants and immigrants from high-income countries do not have any significant effect on trade in the EU-15 countries.

The relationship between immigrants and trade at the aggregate level does not necessarily reflect the reality at the individual level. For instance, immigrants generally consume final goods or foods, while imported products are dominated by crude or semi-manufactured products (Dunlevy & Hutchinson, 2001). Aleksynska and Peri (2012) argue that immigrants in the OECD countries mainly engage in non-tradable sectors, such as construction, household, hospitality or food services, while tradable products are produced by the manufacturing sector. Furthermore, immigrant workers are not necessarily able to create a network between the host and home countries. Aleksynska and Peri (2012) highlight that highly educated immigrant workers have a positive and significant effect on both imports and exports due to their ability to create a link between the home and host countries, while low educated immigrant workers have a non-significant effect on trade.

The long duration of immigrant workers in the host country may reduce the preference effect of the home country's product and lead to an import substitution policy. Imports from the home country will decline because immigrants will slowly adjust to the conditions in the host country, for instance, by consuming local products (Bratti et al., 2012; Qian, 2008). Moreover, in the long-run, both the home and host countries may adopt an import substitution policy, which will reduce the imports in these countries (Tai, 2009).

DATA AND METHODOLOGY

This study uses two models, namely, export (EXP) and import (IMP). Exports and imports are functions of Indonesian Migrant Workers (IMW). The export and import data are based on unpublished data from the Department of Statistics (2011) and are measured in Malaysian ringgit, while the data on Indonesian migrant workers are based on unpublished data on the number of work visas issued by the Department of Immigration (2012). The quarterly data from 1999 to 2009 were employed. All the variables were transformed into the natural logarithmic form.

The two models are as follows:

$$EXP = f(IMW) \quad (1)$$

$$IMP = f(IMW) \quad (2)$$

EXP and IMP, respectively, denote Malaysia's exports to Indonesia and Malaysia's imports from Indonesia, while IMW denotes Indonesian migrant workers. IMW is an independent variable in both models, while EXP and IMP are dependent variables in each of the models.

This study used a Vector Autoregressive (VAR) framework. The Kwiatkwoski, Phillips, Schmidt and Shin (KPSS) test was carried out to detect the order of integration for each variable in the model (Kwiatkowski et al, 1992). The null hypothesis in the KPSS is mean stationary against the alternative hypothesis of a unit root. The long-run relationship between the variables in the model was tested by utilising the Johansen and Juselius cointegration test (Johansen & Juselius, 1990). Furthermore, the Error Correction Term (ECT) and Wald tests were used to test the long-run and the short-run causality between variables, respectively. The Schwarz Information Criterion (SIC) was used to select the optimal lag length.

FINDINGS AND DISCUSSION

The results of the KPSS unit root test for both the export and import models are presented in Table 5. The results show that all the variables are rejected at level and accepted at first difference either with intercept or with trend and intercept, or both. This means that the variables in the models fulfil the requirement for the Johansen

and Juselius test. The results of the cointegration test are presented in Table 6. Both the Trace and Max-Eigenvalues of the cointegration test reject the null hypothesis of r=0 at the 5% level for the export model. This implies that export and Indonesian migrant workers have a long-run relationship, while the import model does not have a long-run relationship.

TABLE 5: THE RESULTS OF THE KPSS UNIT ROOT TEST

Variable	Level		1st Difference	
	Intercept	Trend and Intercept	Intercept	Trend and Intercept
IMW	0.676126**	0.209946**	0.542352**	0.123628
EXP	0.785150*	0.112516	0.125703	0.102264
IMP	0.727607**	0.163041**	0.10779	0.110125

Notes: Asterisks (*) and (**) denote significant at the 1 and 5 % levels, respectively.

TABLE 6. THE RESULTS OF THE JOHANSEN-JUSELIUS COINTEGRATION TEST

Export Model					
EXP, IMW (k = 2, r = 0)					
Null	Alternative	Trace Statistic	95% critical value	Max-Eigen Statistic	95% critical value
r = 0	r = 1	29.64439**	25.87211	18.97123	19.38704
r ≤ 1	r = 2	10.67316	12.51798	10.67316	12.51798
Import model					
IMP, IMW (k = 2, r = 0)					
Null	Alternative	Trace Statistic	95% critical value	Max-Eigen Statistic	95% critical value
r = 0	r = 1	6.902271	15.49471	4.693840	14.26460
r ≤ 1	r = 2	2.208431	3.841466	2.208431	3.841466

Notes: Asterisk (**) denotes significant at the 5 per cent level.

TABLE 7. THE RESULTS OF THE VECTOR ERROR CORRECTION MODEL

	Sort-run		Long-run	
Dependent Variables	ΔEXP	ΔIMW	ECT	
	p-value		Coefficient	t-ratio
ΔEXP		0.8605	-0.392516	[-3.66487]*
ΔIMW	0.5334		-0.365335	[-4.27121]*
Dependent Variables	ΔIMP	ΔIMW		
	p-value			
ΔIMP		0.7863		
ΔIMW	0.1901			

Notes: Asterisk (*) denotes significant at the 1 per cent level.

The results of normalized equation:

$$EXP = -8.30 - 0.2116\ IMW$$
$$(-\ 2.04971)^{**}$$

Table 7 presents the results of the Vector Error Correction Model (VECM). The Wald test results show that neither model has any short-run causality. The results of the ECT imply that both the EXP and IMW equations are significant, which indicates that in the long-run, exports and Indonesian migrant workers have bi-directional causality. Exports may cause IMW, while IMW may cause exports. Moreover, the results of the normalized equation for the export model reveal that Indonesian migrant workers have a negative effect on exports. An increase in the number of Indonesian migrant workers will be followed by a decrease in Malaysia's exports to Indonesia.

Some arguments are proposed in explaining the negative effect of Indonesian migrant workers on Malaysia's exports to Indonesia. It is clear that the network effect in business does not play any significant role in Malaysia's exports to Indonesia since the effect of Indonesian migrant workers on the exports is negative instead of positive, as confirmed by previous studies on developed countries (for instance, Parsons, 2005; Bratti et al., 2012; Aleksynska & Peri, 2012). The role of network in trade is weak when the home and host countries of immigrant workers have cultural similarities (Aleksynska and Peri, 2012). This is the case of Malaysia and Indonesia having a similar language and culture, and Islam as the major religion. Moreover, Indonesian migrant workers are mostly low-skilled workers. These low-skilled immigrant workers are least likely to have the ability to create business networks (Aleksynska & Peri, 2012).

Moreover, Indonesian migrant workers mainly engage in non-tradable sectors, such as construction, household services and the other services (Table 4). Many Indonesian migrant workers are employed in plantations and the other sub-sectors in agriculture, which are important to Malaysia's total exports. These export commodities are the least likely to have an impact on Indonesia since Indonesia is not Malaysia's main trading partner. Malaysia's export commodities to Indonesia are mainly capital-intensive products, such as mineral fuels and lubricants, and machinery and transport equipment (Table 3). Increasing Indonesian migrant workers in Malaysia may imply that Malaysia has increased its demand for low-skilled labour in a labour-intensive industry for export mainly to their main trading partners, which is not Indonesia. Another possibility is that the Indonesian government may apply an import substitution policy, which reduces Malaysia's exports to Indonesia.

Indonesian migrant workers do not have any significant effect on imports indicating that the home-bias effect is least likely to occur among Indonesian migrant workers. Similarities in culture enable Indonesian migrant workers to adjust their consumption pattern easily, especially among the migrant workers who have been

staying in Malaysia for a long time. This is similar to the findings of Qian (2008) in New Zealand inasmuch as immigrants who have been staying in this country for a long time have adjusted to the local culture. This does not necessarily mean that immigrant workers who do not have any significant effect on imports are not able to consume their home country products at all. This is indicated by the increase in imported foods from Indonesia from 2005 to 2009 (Table 3). Many Malaysians also buy various products from Indonesia via shopping tourism rather than via formal international trade.

CONCLUSION

This study has three objectives. The long-run relationship between Indonesian migrant workers and trade, and the causality between these two variables have been examined in the first and second objectives, respectively. The findings in this study show that Indonesian migrant workers and Malaysia's exports to Indonesia have a long-run and bi-directional causality relationship; however, this is not the case for the relationship between Indonesian migrant workers and Malaysia's imports from Indonesia.

The third objective examines the extent to which Indonesian migrant workers influence Malaysia's external trade. Indonesian migrant workers have a significantly negative instead of positive effect on Malaysia's exports. This reveals that the network effect does not significantly exist among Indonesian migrant workers in Malaysia. This finding might be due to the similarities in culture between Malaysia and Indonesia, low-skilled Indonesian migrant workers, the immigrants engaging in non-tradable sectors, the import substitution policy in Indonesia, and Indonesia not being Malaysia's main trading partner. Meanwhile Indonesian migrant workers do not have any significant effect on imports due to the similarities in culture between Indonesia and Malaysia, and the adjustment process of Indonesian migrant workers to the local culture.

This study concludes that Indonesian migrant workers in Malaysia are not an important factor in determining Malaysia's external trade with Indonesia. Indonesian migrant workers seem to be crucial for Malaysia's exports to its main trade partners, such as China, Singapore, Japan and the US. Indonesian migrant workers, who are generally low-paid workers, have contributed to the export products of Malaysia to the world market being more competitive.

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OPEN ACCESS ARTICLE

DETERMINANTS OF NET INTEREST MARGINS - THE CASE OF MACEDONIA

Nadica Iloska

Sahara Global - Macedonia

nadica_iloska@hotmail.com

Abstract

The paper aims to examine the determinants of the net-interest margin (NIM), firstly theoretically, then empirically on the case of Macedonian banks. Since, it is generally agreed that a strong and healthy banking system is a prerequisite for sustainable growth, surviving negative shocks and maintaining financial stability, identifying the determinants that mostly influence bank profitability, expressed through NIM in Macedonia, is of great importance. The regression analysis employs bank level data for the period between 2008 and 2011 to determine the crucial factors that affect NIM. The results show that high net-interest margin and hence profitability tend to be positively associated with banks that employ quality and high-paid staff, and banks that concentrate a great part of their investments in loans. During the period under study, the results show that management's behavior towards risk, the size of the bank and expenses management did not have a clear-cut or significant impact on bank profits.

Key words

Profitability; Net interest margin; Bank-specific factors; Multiple regression model.

INTRODUCTION

Generally, the main role of every financial system is to enable the flow of funds between savers and borrowers. Doing this efficiently will result eventually in improved profitability, increased volume of funds flowing, better quality services for customers, enhanced economic and financial growth of a country. As financial intermediaries, banks play an essential role in the operation of most economies, by transforming savings into investments. Taking in consideration that savings and investments are among the most important determinants of economic growth, the

health of the general economy of a country is in a great way dependent on the well-functioning financial system. Unlike in the developed countries, where the financial markets and the banking sector work in unison, in the developing countries the financial markets are not developed or undersized, so it is on the banks to fill in the gap between the savers and borrowers and provide profitable and secure funds channeling (Sufian & Habibullah, 2009). This holds especially true for countries like Macedonia, where the banking sector is the backbone of the economy. In Macedonia, the banks have a dominant role (with 88.5% of the total financial assets in 2012), with the capital market segment for long-term finance being illiquid and, in some cases, underdeveloped, while non-bank financial intermediaries, such as life insurance companies and private pension funds, are still at an embryonic stage of development. Hence, changes and performance of the banking sector do not affect just the particular banks, but are also highly relevant for the economy as a whole. Accordingly, efficiency and profitability of the banking sector, or more precisely, their determinants, are of an interest not just at individual bank level, but also at a broader macroeconomic level.

There are plenty aspects of banks which could be analyzed, but we focus specifically on bank profitability. Profitability is a reflection of how banks are run, given the environment in which they operate. More precisely, it should mirror the quality of a bank's management and shareholders' behavior, bank's competitive strategies, efficiency and risk management capabilities (Aburime, 2007). Profits affect bank's cost of raising capital in both ways, as a direct contributor to equity financing and as indicator for external investors' assessment of the financial strength of the bank.

On a macro level, a sound and profitable banking sector is better capable to endure negative distress and adds to the strength and the stability of the financial system. Hence, it is vital both to macroeconomic stability and to favorable long-term growth prospects. Despite the fact that there is increased trend toward bank disintermediation observed in many countries, the role of banks remains central in financing economic activity. Given the relation between the well-being of the banking sector and the growth of the economy, determining the underlying factors that influence bank profitability is therefore of interest and essential not only for the managers of the banks, but also for numerous stakeholders such as the central banks, bankers associations, governments, and other financial authorities. Knowledge of these factors would be useful in helping the regulatory authorities and bank managers formulate future policies aimed at improving the profitability of the Macedonian banking sector (Athanasoglou et al, 2005).

The main goal of the paper is by using an empirical analysis, to determine the key determinants that influence NIM in Macedonia, following the literature and taking into account country's particular characteristics. The remainder of the paper is structured as follows: a review of the relevant literature regarding the determinants

of the NIM is given in the next section; Section 3 contains description of the data on which the analysis is based and a brief outline of the econometric methodology to be applied; the interpretation of empirical results is presented in Section 4; lastly, Section 5 summarizes the relevant conclusions and suggestions.

THEORETICAL BACKGROUND

By now, there is overwhelming evidence that a well-functioning financial system is important for economic growth. Hence, the performance of the banking sector has received a lot of attention in recent years. Based on a review of the existing literature it would be legitimate to assume that the two broad sets of variables that control bank profitability and, therefore margins, are a function of the sector-specific determinants as well as the macroeconomic environment within which the banking sector operates. The first ones or internal determinants are related to bank accounts (balance sheets and/or profit and loss accounts) and so could be termed as micro or bank-specific determinants. The external or macroeconomic determinants are not related directly to bank management, but reflect the economic and legal environment, which affect operation and performance of financial institutions.

The determinants have been widely studied both theoretically and empirically. Mainly, those studies can be grouped in: studies focusing on an individual country (Kosmidou et al, 2006; Naceur & Goaied, 2008) or a geographical region (Olson & Zoubi, 2008) that have examined bank-specific determinants of profitability, and others encompassing multiple countries (Valverde & Fernandez, 2007) which have considered external determinants in addition to a few internal determinants of profitability. The main conclusion emerging from these numerous studies is that internal determinants explain a great portion of profitability. Various measures of costs, higher liquidity, greater provisions for loan losses and more reliance on debt have been indicative of lower bank profits. Larger bank size, greater dependence upon loans for revenue, and higher proportions of capital to assets have generally been associated with greater profitability. Nevertheless, external factors such as inflation, business cycle, market concentration etc., appear to play a significant role in shaping the performance of banking institutions. For instance, higher market concentration, greater GDP growth and inflation have generally been associated with greater profitability.

In this study, the main focus is on the first category of determinants, the bank-specific of microeconomic drivers of margins, based on the financial ratios derived from the main financial statements, that reflect the bank's management policies and decisions in the allocation of the resources and are direct indicators of the earning power and the costs of banks.

Many authors find a strong, positive correlation between bank's capitalization and its profitability (Staikouras & Wood, 2003). Others, postulate a link between capitalization and risk aversion and according to them, banks with a high level of capital are more risk averse and ignore potential diversification options or other methods to increase profitability (Goddard et al, 2004). With respect to the impact of the bank's size on its profitability, the results are ambiguous, but newer studies generally find a negative correlation (Kosmidou et al, 2006; Alexiou & Sofoklis 2009). Regarding the risks in the banking business, most of the studies find negative correlation (Ramlall, 2009; Vong, 2005; Kosmidou, 2008), while few find a positive one (Naceur & Goaied, 2008; Ali et al, 2011). A number of studies have concluded that expense control is the primary determinant of bank profitability. Lowering the expenses usually rises the efficiency and in the same time the profitability (Ramlall, 2009; Kosmidou, 2008), except the salary expenses which exhibit positive correlation with profitability, especially in the developing countries that employ high-quality staff that will not have negative consequences regarding the efficiency (Athanasoglou et al, 2005; Iloska, 2014). Although bank loans are the main source of revenues and are expected to affect margins positively, findings from various studies are not conclusive. While the studies by Abreu & Mendes (2000) and Iloska (2014) document a positive relationship between the loan ratio and profitability, the study by Staikouras & Wood (2003) show that a higher loan ratio actually affects profits negatively. The latter study notices that banks with more non-loan earnings assets are more profitable than those that rely heavily on loans. Empirical evidence from Naceur & Goaied (2008) indicates that the best performing banks are those who maintain high level of deposit accounts relative to their assets.

DATA SET AND ECONOMETRIC METHODOLOGY

Variables' specification

Bank profitability and bank interest margins can be seen as indicators of the (in)efficiency of the banking system, as they affect the net return to savings and the gross return for investment. Both ex ante and ex post spreads can be used to measure the efficiency of bank intermediation. Ex ante spreads are calculated from the contractual rates charged on loans and rates paid on deposits. Ex post spreads consist of the difference between actual interest revenues and expenses. The ex post measure of the spread generally differs from the ex ante measure and it is more useful, as it controls for the fact that banks with high-yield, risky credits are likely to experience high loan default rates. For these reasons, we focus on ex post interest spreads in this paper. As a measure of bank efficiency and a dependent variable, we consider the accounting value of a bank's net interest income over total assets, or the net interest margin (NIM). Thus, in line with the previous saying, NIM is an ex post interest margin that differs from the ex ante interest margin (simply the loan interest rate minus the deposit interest rate) because of possible loan defaults. NIM is in a

great way dependent on management's capability to earn sufficient return on assets and secure financing from cheaper resources. The importance of NIM comes from the fact that interest revenues and interest expenses are two main categories in the profit and loss account. Hence, NIM has to be wide enough to cover the non-interest expenses and to provide certain earning for the shareholders.

While net interest margin can be interpreted as a rough index of bank (in)efficiency, the changes in its value should be carefully interpreted. Usually higher NIM signals improved or higher profitability. This situation is not desired if the higher NIM is due to new loans with higher yield and yet risk. On the other side, reduction in NIM may reflect an improved functioning and efficiency of the banking system due to the greater competition among banks, but it can also reflect a high loan default rate. That is why the yields should be monitored at the same time with the risks undertaken. However, higher NIM contributes to the stability of the banking system, by adding to the bank's capital needed as a secure measure against any adverse situations. The evidence says that NIM is usually highest in middle-income countries, where the banks also have the highest values for operating expenses and loan loss provisions to assets variables. Banks in the high-income countries, instead, achieve the lowest NIM, and they face the lowest ratios of operating expenses, loan loss provisions, and net profits to assets. Overall, for NIM to be a good measure of profitability, interest rate revenues and expenses should be closely related to banks' behavior, and not to government decisions (Demirguc-Kunt & Huizinga, 1999).

Banking literature acknowledges various determinants of NIM. They usually are consisted of elements internal to each financial institution, like the size of the bank, the attitude of the bank's owners and managers towards risk, the composition of the portfolio etc., and several important external forces shaping earnings performance, like the bank's ownership characteristics, the level of external competition the bank encounters, business cycle fluctuations, inflation etc. The first group, internal determinants, can be described as the factors that are influenced by bank management's decisions, actions and policies regarding funding resources and their usage, capital, liquidity and risk management, costs efficiency etc., that later reflect differences in bank operating results, including margins. As potential determinants of Macedonian banks' NIM we consider nine bank-specific measures:

- *Capital* - Capital refers to the amount of own funds (primarily by bank's owners, reserves and retained earnings) available to support a bank's business and for that reason it acts as a safety net in case of unexpected situations. As such, the strength and quality of capital will influence bank performance. Strong capital structure is essential for banks in developing economies, since it provides additional strength to withstand financial crises and increased safety

for depositors during unstable macroeconomic conditions. Furthermore, lower capital ratios imply higher leverage and risk, which therefore lead to greater borrowing costs. Thus, NIM should be higher for the better-capitalized bank (Staikouras & Wood, 2003). On the other hand, a relatively high capital-asset ratio may signify that a bank is operating over-cautiously and ignoring potentially profitable diversification or other opportunities (Ali et al, 2011). Since Macedonia is a developing country, we expect this variable to affect the NIM positively. We use the ratio of Capital-to-Assets (K_TA) to proxy this variable.

- *Bank size* – Bank size is usually considered an important determinant, but with no consensus on the direction of its influence. Generally, the effect of a growing size has benefits like economies of scale and reduced costs or economies of scope and product diversification, that provide access to markets that small banks cannot entry. In addition, large banks may be able to exert market power through stronger brand image or implicit regulatory (too-big-to-fail) protection. Working this way will positively affect the NIM. However, if the bank becomes extremely large, this effect turns out to be negative, because the bank is harder to manage and also due to bureaucratic and other reasons. Accordingly, the size - NIM relationship is expected to be non-linear (Ali et al, 2011). As a proxy we use the logarithm of the bank's total assets (LTA) in order to capture this possible non-linear relationship and also to lower the heteroskedasticity between the data, since banks of different size are included.
- *Risk management* – The need for risk management is inherent in the banking business. Bank profitability depends on its ability to foresee, avoid and monitor risks, possibly to cover losses brought about by risks arisen. Poor asset quality and low levels of liquidity are the two major causes of bank failures. Hence, in making decisions on the allocation of resources to asset deals, a bank must take into account the level of risk to the assets (Bobakova, 2003). Considering the nature of the Macedonian banks, hereby we include the liquidity risk and credit risk. Liquidity risk concerns the ability of a bank to anticipate changes in funding sources. This may have serious consequences on a bank's capacity to meet obligations when they fall due. Effective liquidity management seeks to ensure that, even under adverse conditions, a bank will have access to the funds necessary to fulfill customer needs, maturing liabilities and capital requirements for operational purposes. Without the required liquidity and funding to meet short-term obligations, a bank may fail. Intuitively, one would expect a positive relationship between the NIM and liquidity of a bank, due to the lower risk. However, holding that relatively high proportion of liquid assets does not earn high revenues, therefore the bank should be willing to accept lower returns (Gottard et al, 2004). In recent

years, almost all Macedonian banks have exhibited excess liquidity, so we expect it to affect NIM negatively. We represent this variable with the ratios Liquid Assets-to-Total Assets (LA_TA) and Total Assets-to-Total Loans (TA_TL). Their higher value indicates that greater deal of the assets is short-term invested, which results in lower risk exposure and in the same time lower interest rates. The second one – Credit risk is represented by the ratio Loan-loss Provisions-to-Total Loans (LLR_TL). It is a measure of bank's asset quality and reveals the extent to which a bank is preparing for loan losses by building up its loan-loss reserves against current income. If banks operate in more risky environments and lack expertise to control their lending operations, it will probably result in higher LLR_TL ratio. Changes in credit risk reflect changes in the health of the loan portfolio, which eventually will affect the bank's performance and results. A high ratio could signal a poor quality of loans and therefore a higher risk. Nevertheless, on the other hand, according to the risk-return hypothesis, high ratio with sound quality of loans could imply a positive effect on NIM. Therefore, it is difficult to hypothesize the sign of this relationship.

- *Operative Efficiency* – Bank expenses are also a very important determinant, closely related to the approach of efficient expense management, because they offer a major opportunity to be decreased (in this era of new electronic technology) and hence improve efficiency and performance. Here we use the ratio Operating Expenses/Total Assets (OE_TA) as an indicator of management's ability to control costs. The relationship between OE_TA variable and NIM is usually negative, as banks that are more productive and efficient aim to minimize their operating costs. On the other hand, if banks are able to transfer part of their operating expenses to their clients, this relationship may become positive (Vong, 2005).
- *Productivity* – Superior management is a prerequisite for achieving profitability and stability of a bank. The contrary situation will occur if management quality is low, and where some workers will not exert full effort which will cause 'free riding' on good workers. Hence, better management leads to better result, but it is too hard to measure this quality like all the other variables. We suppose that the quality should be reflected in the operating expenses or more precisely in salary expenses, expressed by the ratio Salary Expenses/Total Assets (SE_TA). The main intention is to increase productivity and therefore NIM, usually done by keeping the labor force steady, ensuring higher quality of newly hired labor, reducing the number of employees and increasing overall output by investing in new technology. This suggests that higher

productivity growth generates income that is partly channeled to bank profits. On the one hand, staff expenses, logically, are expected to be inversely related, because lower expenses mean higher efficiency and profitability. On the other hand, if managers are motivated (by salaries, benefits, power or prestige) and if they have discretion to pursue their own objectives, growth as well as profit may enter the bank's objective function (Gottard et al, 2004). Since salary expenses are high in the Macedonian banking system, we expect them to be a key determinant.

- *Balance sheet structure* – On the asset side, we utilize Loan-to-Asset (L_TA) ratio to capture the effect that the share of loans has on NIM. Since loans are riskier and provide the highest return of any asset, this variable should have positive effect as long as the bank is working cautiously and not taking excessive risk. A large loan portfolio can also result in reduced NIM if it mainly comprises of substandard credits. However, loans also posses higher operating costs arising from their origination, servicing and monitoring. Therefore, the conclusion is that L_TA affects NIM either positively or negatively, depending on the composition of the portfolio. In the end it is the quality, not the quantity of loans that matters. On the liability side, we use Deposit-to-Asset (D_TA) ratio to capture the effect of the proportion of deposits, which should be positive since they constitute a more stable and cheaper funding compared to borrowed funds. Increasing this ratio means that a bank has more funds available to use in different profitable ways and that should increase NIM ceteris paribus (Kosmidou, 2008). What may weaken this relation is the fact that they require widespread branching network and other expenses, especially if there is insufficient loan demand. Taking in consideration that traditional banking activities dominate Macedonian banks, we expect these both variables to positively affect profitability.

Bank profitability is also sensitive to macroeconomic conditions despite the trend in the industry towards greater geographic diversification and the greater use of financial engineering techniques to manage risk associated with business cycle forecasting. Generally, economic growth enhances bank profits through increased demand for loans, which generate good returns with fewer defaults. In the reverse situation, bad economic conditions can worsen the quality of the loan portfolio and generate credit losses, which eventually will reduce banks' profits. Regarding financial structure, banks in countries with a more competitive banking sector (where banking assets constitute a larger portion of the GDP) have smaller margins and are less profitable. The bank concentration ratio positively affects NIM, since large banks dictate the interest rates in the sector. Taking in consideration legal and institutional matters, indicators of better contract enforcement, efficiency of the legal system and lack of corruption are associated with lower realized interest margins

and lower profitability (Demirguc-Kunt & Huizinga, 1999). Ownership is also an important determinant. For example, evidence shows poor performance of government-owned banks, especially in developing countries and foreign banks usually realize higher interest margins and profitability than domestic banks due to the spillover effects from the superior performance (Sufian & Habibullah, 2009). In developed countries the differences are not that obvious. Inflation affects the real value of costs and revenues and it may have a positive or negative effect depending on whether it is anticipated or unanticipated. Anticipated inflation gives banks the opportunity to adjust interest rates accordingly, resulting in revenues increasing faster than the expenses, thus implying higher NIM (Kosmidou, 2008).

For any bank, NIM depends on bank's policy decisions as well as on uncontrollable factors relating to the economy and government regulations. As we said before, this paper's focus will be on the determinants that include elements internal to each financial institution, treated as independent variables. The external determinants will be excluded due to the time-dimension of the panel used, which is too small to capture the effect of control variables related to the macroeconomic environment (in particular the business cycle variable). In addition, external determinants are much more useful if included in studies consisting of different types of banks in one country (big vs. small or state vs. private) or when we make comparison among banks in two or more countries. Since this analysis refers to all banks in one country, including external variables that cover a short period, could just distort the final results.

Research Methodology

The majority of studies on bank profitability and determinants of NIM, such as Athanasoglou et al (2005), Goddart et al (2004) and Ali et al (2011), use linear regression models to estimate the impact of various variables that may be important. Regression analysis will help us discover the relationship and the level of significance that each one of the variables previously discussed, has on NIM. The study takes into consideration several microeconomic control variables that have proven to be particularly significant for the value of NIM in other studies.

To examine the determinants of the NIM of Macedonian banks, we adapt the following formulation:

$$y_{it} = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \cdots + \varepsilon_{it}$$

where y_{it} is the dependent variable (in this case NIM), $\beta_0 \ldots \beta_n$ are regression coefficients, x_{it} stands for the independent variables (capital, size, credit risk…), ε_{it} is the disturbance term that is assumed to be normally distributed with a mean of zero. The cross-sectional units, denoted i =1…17, are observed at each of time periods,

denoted $t = 1…4$ (in this case years). The regression estimates will be derived using the ordinary least squares (OLS) method. Because of the general quality of minimized bias and variance, OLS estimates are believed to be the most reliable regression estimates. The *t*-statistics connected with each OLS coefficient is used to test whether any parameter in the population is equal to zero, in which case between the dependent and the independent variable there is no linear relationship and no influence at all. However, that is for testing just one parameter. To test a regression with multiple parameters we employ the *F*-test, which checks whether a group of independent variables (all together) have or do not have any influence on the dependent variable. In that way we measure the overall significance of the regression (Gujarati, 2003).

Because we use time-component data, we may face the problem of serial correlation. Although in its presence the OLS estimators remain unbiased, consistent and asymptotically normally distributed, they are no longer efficient. Consequently, the usual *t*, *F* and x^2tests cannot be legitimately applied. That is why we first check with the Breusch-Godfrey test for serial correlation, also known as LM test. Further on, working with data that includes different-sized units (in this case small, middle and large-size banks) the assumption for homoskedastic variance of the residuals does not usually hold true. To check for residual heteroskedasticity, we employ the White's test.

For that instance, first we will test the sample to check if the residuals are normally distributed, then for the presence of serial correlation and heteroskedasticity. If their presence is confirmed, to avoid getting incorrect statistical significance and wrong conclusions, appropriate method for correction is used. In this case it is the Newey-West method, which transforms the standard errors into heteroskedasticity and autocorrelation consistent standard (HAC) errors and conducts statistical interference based on them. Since HAC standard errors are higher than the OLS standard errors, the t-statistic values with HAC standard errors are lower than before, which proves that OLS method underestimated the real standard errors.

Data Source and Sample Characteristics

To examine the determinants that explain NIM, we utilize data for the Macedonian banking sector for the years 2008-2011. We used several proxies based on balance sheet data at the individual bank level to capture the changes. The variables included in the regression represent ratios from the data given in the financial statements. The income statement, balance sheet and the notes to the financial statements were obtained from the annual reports of each bank as reported on their individual websites. The period of analysis represents the years for which electronic data were available for the majority of banks. All variables for the 17 banks are observed for each cross-section and each time period, resulting in a total number of

bank-year observations of 67. The values of the original data, from which the ratios are calculated, are shown in Macedonian denar (MKD).

Table 1 shows the descriptive statistics for the variables used in our main regression. As can be seen NIM variable is having positive mean value of 0.0407, which goes to the maximum of 0.079 and minimum of 0.013, with standard deviation of 0.0136. Further, on, for each variable we calculated mean, median, minimum, maximum value and standard deviation. We would like to draw attention and explanation on the high maximum value of K_TA and zero minimum value of D_TA. At first may seem illogical for a bank, but in this case, it is due to the fact that one of the banks in the analysis (Macedonian Bank for Development Promotion) does not have any deposits in its portfolio.

TABLE 1. DESCRIPTIVE STATISTICS

	NIM	K_TA	LTA	LLP_TL	LA_TA	TA_TL	OE_TA	SE_TA	D_TA	L_TA
Mean	0.0407	0.22124	22.7778	0.01905	0.3167	2.21351	0.09692	0.02156	0.62605	0.55275
Median	0.0380	0.13411	22.7322	0.01076	0.3012	1.74409	0.08408	0.01840	0.64001	0.57337
Maximum	0.0790	0.81733	25.1072	0.19597	0,7067	9.05846	0.20889	0.07751	0.87465	0.87279
Minimum	0,0130	0.06997	19.9862	-0,0632	0,1067	1.14575	0.01564	0.00274	0.00000	0.11039
Std. Dev.	0.0136	0.17173	1.31214	0.03870	0,1382	1.35282	0.04381	0.01386	0.21117	0.18179
Skewness	0.7394	1.45975	0.01768	2.56795	0,7983	3.00656	0.69739	1.93757	-1,6229	-0,5277
Kurtosis	3.6126	4.65659	2.49477	12.1866	0,5538	13.2721	2.99053	7.51643	5.59192	2.78923
Jarque-Bera	7.1526	31.4559	0.71607	309.235	730.300	395.505	5.43119	98.8664	48.1665	3.23328
Probability	0.02798	0.00000	0.69905	0.00000	0.02595	0.00000	0.06617	0.00000	0.00000	0.19857
Observations	67	67	67	67	67	67	67	67	67	67

We also present the figures of skewness and kurtosis of the data that will be needed for the test of normality distribution Jarque-Bera (JB) test. If we have normally distributed residuals, skewness would be zero, or it can be tolerated from –0.5 to 0.5. Here, that holds true just for two variables, LTA (0.01768) and L_TA (-0.52767). For most of the variables, the value is above zero, so we have positive asymmetry (skewness), and just two of the variables (D_TA and L_TA) exhibit negative values. Regarding kurtosis, normally distributed residuals should have value equal to three. In this case, just OE_TA satisfies that condition. Most of the other variables have coefficient higher than three. Hereby, we can conclude that just a few of the variables satisfy the assumption for normal distribution. The probability of accepting null hypothesis (H_0), that variables are normally distributed, is the highest for the variable bank size (LTA 0.69905) and is followed by L_TA and OE_TA.

Table 2 provides information on the degree of correlation between the explanatory variables used in the regression analysis. One of the assumptions of the linear regression model is that there is no multicollinearity among the independent (explanatory) variables. If correlation between explanatory variables is high, the estimation of the regression coefficients is possible, but with large standard errors and as a result, the population values of the coefficients cannot be estimated precisely. According to Kennedy (2008) multicollinearity is a problem when the correlation is above 0.80, which is not the case here.

The highest correlation coefficient is between OE_TA and SE_TA (0.7755), which is both logical and expected since staff expenses are component of the operating expenses. Also, the coefficient between LTA and SE_TA is high (-0.7258), which means that as the bank grows in size, staff expenses lower as a percentage of total assets; high negative correlation is spotted on the both sides of the balance sheet, between K_TA and D_TA (-0.6725) as two substitutes for bank resources and between LA_TA and L_TA (-0.7775) as two alternatives for assets allocation. All in all, the matrix shows that, in general, the correlation between the variables is not strong, suggesting that multicollinearity problems are either not severe or non-existent.

TABLE 2. CORRELATION MATRIX

	NIM	*K_TA*	*LTA*	*LLP_TL*	*LA_TA*	*TA_TL*	*OE_TA*	*SE_TA*	*L_TA*	*D_TA*
NIM	1									
K_TA	0.2321	1								
LTA	-0.1965	-0,7782	1							
LLP_TL	-0,0090	-0,1987	0,1126	1						
LA_TA	-0,0842	0,4733	-0,4540	-0,0401	1					
TA_TL	-0,0584	0,5515	-0,5023	-0,1455	0,7257	1				
OE_TA	0.3999	0,2503	-0,4959	0,2937	0,0631	0,1796	1			
SE_TA	0.4377	0,6275	**-0,7258**	-0,1588	0,3585	0,4785	**0,7755**	1		
L_TA	0,0087	-0,5931	0,5461	0,0495	**-0,7775**	-0,8275	-0,3139	-0,5911	1	
D_TA	0,0323	**-0,6725**	0,5093	0,2466	-0,0093	-0,1926	0,1321	-0,1824	0,1136	1

EMPIRICAL FINDINGS

The variables mentioned affect the NIM either directly (the amount of deposits, loans, liquid assets, bank size) or indirectly (operating expenses, capital, credit risk) through their influence on the formulation of interest rates. We begin the analysis by plotting the results of the regression of the dependent variable NIM on the independent variables, described earlier. The results are shown in Table 3.

TABLE 3. NIM REGRESSION RESULTS

Dependent Variable: NIM
Method: Ordinary Least Squares
Included observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.040616	0.058680	-0.692168	0.4916
D_TA	0.030375	0.013255	2.291512	0.0256
K_TA	0.048340	0.019109	2.529777	0.0142
L_TA	0.033666	0.017527	1.920796	0.0598
LA_TA	-0.020571	0.021026	-0.978339	0.3320
LLP_TL	0.061001	0.055974	1.089805	0.2804
LTA	0.001338	0.002258	0.592762	0.5557
OE_TA	-0.097105	0.097990	-0.990963	0.3259
SE_TA	0.854147	0.327489	2.608168	0.0116
TA_TL	-0.000508	0.001951	-0.260588	0.7953

Adjusted R-squared	0.316244	F-statistic	4.391741
S.E. of regression	0.011270	Probability (F-statistic)	0.000219
		D-W statistic	1.580259

From the Table 3, we can see that at 10% level of significance, from all nine variables, four are significant – staff expenses, capital, deposit and loan-to-asset ratio (balance sheet structure). To obtain more precise results we are going to make new parsimonious regression, only considering the significant variables, presented in the following Table.

TABLE 4. PARSIMONIOUS REGRESSION

Dependent Variable: NIM
Method: Ordinary Least Squares
Included observations: 67

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.021148	0.013480	-1.568791	0.1218
D_TA	0.027053	0.010475	2.582632	0.0122
K_TA	0.042163	0.017388	2.424770	0.0182
L_TA	0.044129	0.010855	4.065130	0.0001
SE_TA	0.519818	0.142120	3.657600	0.0005

Adjusted R-squared	0.332912	F-statistic	9.234380
S.E. of regression	0.011132	Probability (F-statistic)	0.000006
		D-W statistic	1.429564

Loan-to-asset ratio, L_TA, is the variable with the highest statistical significance level, which is pretty much expected, taking in consideration that loans are one of

the biggest and the highest interest-earning source of bank's interest-revenues. Also their positive sign of influence is expected, as long as it is a good and quality credit portfolio, because we must not forget that not just the quantity, but the quality in this case matters a lot. L_TA has also the highest t-statistics (4.065130), but the coefficient is not particularly high (0.044129). We have completely different situation regarding the next variable SE_TA, staff expenses, with much higher coefficient, 0.519819. This proves us that staff expenses, as a constituent part of the expenses done by the credit sector in a bank in calculating the interest rate, has high and positive influence, firstly on the active interest rate and eventually on the NIM. Also, this confirms the Efficiency-wage theory, according to which productivity grows in line with increased salary and that higher productivity growth generates income that is mostly channeled to bank profits. As mentioned above, this situation is quite common in developing countries, including Macedonia, where banks employ high-quality staff, motivated by salaries, benefits, power or prestige, which translates into higher efficiency and therefore higher profitability.

Moreover, on the other side of the balance sheet, the highest significant influence belong to the deposit-to-asset ration, D_TA, with a little bit lower t-statistic (2.582632) and coefficient (0.027053), compared to the previous variables, but yet statistically significant in a positive way. This means that using deposits as a source of funding, rather that other external sources, is less expensive and more profitable for Macedonian banks. Finally yet importantly, capital represented by K_TA, has positive statistically significant influence on NIM with coefficient of 0.042163, close to the coefficient of L_TA. That proves us that the high level of capitalization of Macedonian banks is one of the main indicators of their safety and stability, which leads to lower financing expenses, reflected in the NIM. These four variables, together, explain 33.3% of the total variations in the NIM. In social sciences, especially in cross-sectional analysis, low R^2 value is not something unusual and it does not mean that the regression done with the OLS method, which has lower R^2 is less important or useless.

In addition to the above characteristics, a few more need to be pointed out. The standard error of the regression, or the unexplained variability, is 0.011132. F-statistic is 9.234380 ($p = 0.000006$), meaning that the regression is statistically significant. Durbin-Watson (DW) statistics has value of 1.429564, which points out that positive serial correlation among the variables is present.

To assure the authenticity of the results, as we mentioned earlier, we employed additional tests. First of all, to check the normal distribution, Jarque-Bera test is used. We also did this separately on each variable (in the part descriptive statistic) and the results showed that just one variable (LTA) exhibited normal distribution. Taking it now to the level of the regression, the test had the following results: test value of 9.396 with probability = 0.009, leads to rejecting H_0 (normally distributed residuals),

and we come to a conclusion that the residuals in this regression are not normally distributed. The variables were also checked for serial correlation and the results from Breusch-Godfrey test reveal that at 10% level of significance we can reject the null hypothesis implying that there is serial correlation between the residuals in this regression. In addition, the Durbin-Watson statistics (1.429564), shown in Table 4, has already led us to the same conclusion, that residuals have positive serial correlation. That means, a note of caution is needed when interpreting the results. Later, White's test has been employed to determine the presence or absence of heteroskedasticity and the results show that at 10% level of significance, we reject H_0, confirming the presence of heteroskedasticity. Concerning the presence of serial correlation and heteroskedasticity, which could distort the final results, we proceed with the empirical analysis using the Newey-West HAC standard errors.

TABLE 5. PARSIMONIOUS REGRESSION USING NEWEY-WEST METHOD

Dependent Variable: NIM
Method: Least Squares
Included observations: 67 after adjustments
Newey-West HAC Standard Errors & Covariance (lag truncation=3)

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	-0.021148	0.015719	-1.345391	0.1834
D_TA	0.027053	0.016047	1.685824	0.0969
K_TA	0.042163	0.027893	1.511619	0.1357
L_TA	0.044129	0.013460	3.278544	0.0017
SE_TA	0.519818	0.246679	2.107268	0.0391

Adjusted R-squared	0.332912	F-statistic	9.234380
S.E. of regression	0.011132	Probability (F-statistic)	0.000006
		D-W statistic	1.429564

From the Table 5 we can see that now, due to the correction of the standard errors and hence decreasing the t-statistics and increasing probability, there is one variable that was considered statistically significant in the previous regression, but not anymore. More precisely, it is the capital variable, K_TA, for which we concluded that lowered the bank's financing expenses. Looking at the other variables, we can spot that there are some slight upward changes in probability (and upward in t-statistics), but despite that, they still retained their statistical significance.

Consequently, we proceed by running a new regression, excluding K_TA, and for the second time we got a variable that is not significant any more. Even though the variable D_TA, in the first regression showed that, there is difference whether the bank finances mostly by deposits or other external sources, after correcting the standard errors and removing the K_TA variable, the results show that D_TA is also statistically insignificant. Due to space storage, just the final results will be shown.

TABLE 6. FINAL REGRESSION USING NEWEY-WEST METHOD

Dependent Variable: NIM
Method: Ordinary Least Squares
Included observations: 67
Newey-West HAC Standard Errors & Covariance (lag truncation=3)

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	0.009259	0.010536	0.878793	0.3828
L_TA	0.030809	0.015526	1.984309	0.0515
SE_TA	0.669158	0.145576	4.596612	0.0000

Adjusted R-squared	0.279622	F-statistic	13.80927
S.E. of regression	0.011568	Probability (F-statistic)	0.000010
		D-W statistic	1.456564

If we compare Table 6 and Table 5, we will notice that now at 10%, the first place in regards to statistical significance is taken by the variable SE_TA (which now has the highest t-statistics of 4.596612 and a coefficient of 0.669158, followed by L_TA with lowered t-statistics to 1.984309 and coefficient to 0.030809. These two variables together explain nearly 28% of the variations in NIM. Moreover, the standard error of the regression is 0.011568; F-statistic inclined from 9.234380 to 13.80927; and DW-statistic is now a little bit closer to 2.

From Table 6 we can see that the most important variables in explaining bank profitability are staff expenses and loan-to-asset ratio, now confirmed for the second time. Firstly, SE_TA with high statistical significance positively affects profitability. Hence, we can say that investing in high quality, educated and high-paid staff is justifiable for it generates income that is mostly channeled to bank profits. In addition, of course, the NIM is in great deal dependent on the amount of loans in the total assets, as part of the portfolio, which generates the highest interest rates. Hereby, we conclude that loans are much better investment for Macedonian banks that any other asset. This may be due to the underdeveloped Macedonian financial market, which lacks attractive possibilities for investing in securities.

Next, we will draw attention to the variables with the lowest significance level. Starting with liquidity coefficients, we can say that even Macedonian banks keep high portion of their assets in liquid form (since the loans are not as liquid as the ones in the developed countries), it does not seem to have a major either positive or negative effect on their NIM; furthermore the low significance of the variable LTA represents a proof that Macedonian banks are not large enough to experience the benefits of economies of scale or scope and hence no increasing returns to scale through the prioritization of fixed costs over a higher volume of services; low significance of OE_TA, tells us that efficiency in expenses management is not a robust determinant of bank profits as we thought in first place, proving that NIM is

not so dependable on the efficiency in expenses management; and finally, the undertaken credit risk or the quality of the loan portfolio does not play important part in explaining the value of NIM, but rather, the quantity of loans or L_TA has by far higher influence.

If we consider the variables i.e. the determinants that were not disturbed by any of the tests employed and held their significance level high enough, we can say that if Macedonian banks want to improve their NIM, they should pay attention to:

- Employing and keeping the current quality staff, which improves the productivity. Invest in human resources, but keep in mind that if this field starts to get overpaid, it may influence the expenses management or OE_TA, which till now did not have any particular influence on NIM, but usually affect profitability negatively; and
- Enhancing the growth of the share of loans in the overall bank portfolio, since they have proven to be the greatest interest-earning potential of Macedonian banks. This process shall keep going as long as the quality of the loans is on satisfactory level.

The Macedonian banking business model lays its foundations on sound and stable traditional banking activities, which were the main cause of its resistance to the spill-over effects of the World financial crisis. In order to keep this financial stability and soundness, the banks should also possess (as they do now) strong capital structure, which is essential for banks especially in developing economies, since it provides additional strength to withstand financial crises and increased safety for depositors during unstable macroeconomic conditions.

CONCLUSION

As financial intermediaries, banks play a crucial role in an economy, therefore a sound and well-functioning system is essential in providing for sustained growth and development. The most accurate confirmation is the recent financial crisis, which emphasized the fact that a profitable and lucrative banking system is best capable to absorb negative shocks and sustain the stability of the whole financial system. Crucially, financial intermediation affects the net return to savings, and the gross return for investment. The spread between these two returns mirrors the bank interest margins, in addition to transaction and other costs borne directly by savers and investors. This suggests that bank interest spreads can be interpreted as an indicator of the efficiency of the banking system. In that esteem, this study endeavors to shed light on the determinants of NIM for the banking system in Macedonia, by taking into consideration bank-specific factors. Theoretically, we show that profitability seems to have been positively affected by productivity, bank

size, balance sheet structure and capitalization, and negatively by operating expenses, credit and liquidity risk.

Accordingly, the empirical analysis of the determinants imply the following main findings: In order of statistical significance staff expenses are of a paramount importance, providing support to the argument that their high ratio increases efficiency and transfers into profitability, implying that highly paid, motivated and educated staff and management is essential and that quality matters, especially for banks in developing countries. As we expected, loan-to-asset ratio has a positive and significant impact, showing that loans are much better investment for Macedonian banks that any other asset. And they will continue to be the most profitable asset, at least until the Macedonian financial market enriches with different attractive investment options and alternatives, which will open new horizons and possibilities for other profitable investments besides loans.

Overall, the findings suggest that in favor to NIM, Macedonian banks need to cautiously monitor the productivity of their employees and to enhance the share of loans in the total assets without worsening their quality. Moreover, the stability and soundness should be kept at reasonable level because of the traditional way of operating, based on loans and deposits. In this way, the financial stability that the banks create is usually transferred into lower financing costs and higher margins and hence, profits. The design of all these changes and improvements must take into account the peculiarities of the Macedonian macroeconomic environment alongside the bank-specific circumstances.

Further development of Macedonian banking system depends on its efficiency, profitability and competitiveness. In these circumstances, banks need to find a way to make the optimal utilization of their resources, while minimizing the expenses and losses. That is supposed to enhance their position, resistance and effectiveness, leading to more stable and secure financial system. Finally, several other topics remain open for further research like the impact of external or macroeconomic factors, comparative analysis with the banks from other developing countries or other relevant issues.

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OPEN ACCESS ARTICLE

SPECIFIC RISK MANAGEMENT ISLAMIC BANKING WITH SPECIAL REFERENCE TO BOSNIA AND HERZEGOVINA

Amra Nuhanović

Faculty of Economics, University of Tuzla, Bosnia and Herzegovina

amra.nuhanovic@untz.ba

Abstract

Islamic banking system could be the answer to future economic crisis, and hence deserves a much deeper analysis of its rules and regulations. The research is done with a view to the best way to explain one particular aspect of banking, the Islamic (interest -free) banking. This concept is of great interest, not just for the academia, but to wider public as well, since the principles underlying the Islamic (interest-free) banking bring new guidelines to the banking industry. In that line, this study tackles two issues. Namely, an attention is paid to the specific risk management in Islamic (interest -free) banking, and the influence of the global financial crisis on this type of banking. Generally, the paper tries to explain that with the assistance of the Islamic banking, all major crises can be prevented, thus saving the entire economic system of large losses. In addition, great attention is focused to the Islamic banking sector of Bosnia and Herzegovina, by underlining its development and current position within the complex economic and social conditions of the country.

Key words

Islamic (interest-fee) banking; Global financial crisis; Bosnia and Herzegovina

INTRODUCTION

The concept of Islamic banking system is old, while Islamic banking system has been introduced in the last quarter of the twentieth century. Islamic (interest-free) banking is very interesting, because of its different approach to present turbulent economic situation. The main aim of this research is to explain a very complex and interesting part of the contemporary banking system. This study is structured in three sections encompassing the history, main characteristics, and position of Islamic banking in

Bosnia and Herzegovina. This topic enables everyone to observe the opportunities that this type of banking offers to every situation of today's economy.
Generally, the paper tries to explain that with the assistance of the Islamic banking, all major crises can be prevented, thus saving the entire economic system of large losses. In addition, great attention is focused to the Islamic banking sector of Bosnia and Herzegovina, by underlining its development and current position within the complex economic and social conditions of the country.

In October 2000, the Bosnia Bank International (BBI) was established in Sarajevo. Until now, it is the only bank in Bosnia and Herzegovina that operates in accordance to Islamic financial principles. The founders of the bank are Islamic Development Bank 45,46%, Dubai Islamic Bank 27,27% and Abu Dhabi Islamic Bank 27,27%. The domestic Law on banks brought in accordance to conventional banks does not respect the attributes of Islamic interest-free model of functioning. Nevertheless, the existing law frame is not an obstacle for forming Islamic banks. The Bosnia Bank International is mostly based on providing long-term loans for the citizens, in order to finance acquisitions, constructions and adaptations of living objects in Bosnia and Herzegovina.

As BBI is a very small institution with only four branches, so the scope for Islamic finance is very limited in Bosnia and Herzegovina. At present most of the bank's operations are retail, as it provides current accounts with debit cards and cheque books, as well as overdraft facilities of up to two months' salary provided these are paid directly into the client's account. From a Shari'ah perspective overdraft facilities are questionable however, especially if charges are applied that are related to the amount and duration of the overdraft, as this amounts to Riba. However because other banks in Bosnia and Herzegovina provide overdraft facilities, BBI fees obliged to compete by offering the same credit.

EXPOSURE AND RISK MANAGEMENT IN ISLAMIC (INTEREST-FREE) BANKING

Several general factors currently make the work of Islamic banks riskier and therefore, less profitable than conventional banks (Seyed, 2005):

- Insufficient or non-existent money market. Therefore, there needs to be the establishment of an Islamic money market system of liquidity, both domestic and international, for Islamic financial institutions, which should be in accordance with the Sharia;
- Limited availability of access to LOLR -*lender of last resort*. This limitation is associated with the prohibition of the discount rate, a solution to this problem could be found in the work of Islamic banks in a safe money market; and

- Legal uncertainty and limited infrastructure in the market that restrict the availability of hedging instruments. Lack of legal framework can increase operational risk and slow the development of the market.

The risks faced by banks operating under Islamic principles in their operations are numerous: interest rate risk, currency risk, market risk, political risk, the risk that the value of property and goods, etc. In most Islamic banks the current market, and then operational and liquidity risk, while the consumption of credit risk (Iqbal & Mirakhor, 2009).

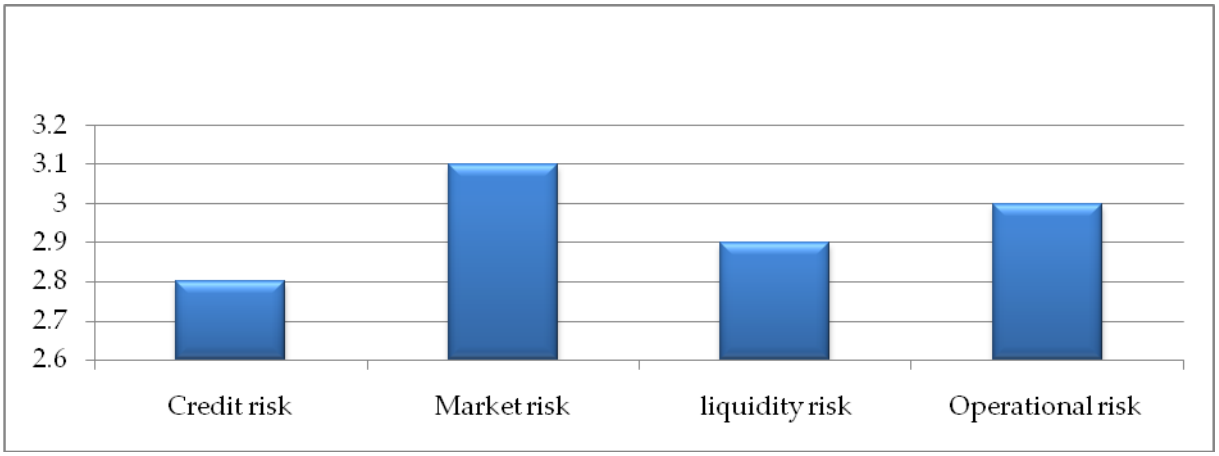

FIGURE 1. AVERAGE SIZE OF THE RISK

Source: Hadžić F. (2009), pp.13
Note: on a scale from 1 to5,1-lowest risk, 5-highest risk)

Islamic banks want to as much as possible protect themselves from any risks, in Shaira defined margins. To be in a state of recognizing profitable projects and therefore keeping their clients trust, and to be competitive in the financial market (Iqbal & Mirakhor, 2009). Effective risk management in Islamic banks deserves special attention.

However, there are many complex issues that need to be better understood as Islamic banks face specific risks. There are almost unlimited number of ways of providing funds through the use of a combination of permissible Islamic modes of financing. One can distinguish three basic methods of risk management in Islamic banking (Čočić, 2005):

- First methods that are formally standardized, such as ISDA/IIFM Ta'Hawwut (Hedges) - Master Agreements;
- Second risk management methods that are directly based on the well-recognized methods and rules of Islamic finance; and

- Third methods of using the official, permitted by Shariah, risk management products, which replace conventional risk management products.

On the market, there is a global trend of unification or standardization of product risk management. One example of this is the creation of an Islamic replacement rate of profit, which is an Islamic product that is a response to conventional replacement rates and all the Islamic replacement master contract, which is reflected in the ISDA Master Agreement, which is entirely permissible under Shariah. In September 2006, the ISDA and IIFM signed a Memorandum of Understanding as a basis for the development of contracts for derivative products that are permissible under Shariah. The ISDA/IIFM Ta'Hawwut (Hedging) Master Agreement is created taking into account the requirements of Shariah with IIFM Sharia advisory committee. In general, the market for hedging of any kind for the market of capital transactions to create only a general legal framework including contracts and property law. For example, the legal framework for financial transactions with the coverage and deliverability of the contract in accordance with its terms is crucial for these products. Good enforceability of contracts and insurance transactions is one of the most important issues for these products.

Another type of product risk management is based on the use of eminent Islamic contracts and financial instruments. Within this group, there are strategies that are no doubt fully compliant with Sharia, while others may be criticized as a mere repetition of conventional products. For example, the standard Murabaha and Salam contracts can be efficiently used for the construction of Islamic hedging instruments without using any conventional products. On the other hand, replication, for example forward, call options, and even put option may seem questionable to many scientists. The same applies to futures contracts, which can be done in different ways permissible under Shariah. This problem is even more different in the case of products such as total return swaps based on Wa'du, which has gained popularity in the global Islamic finance in the last two years. While various scholars consider such transactions are acceptable under Shariah (even if these products enable Islamic investors to benefit from a clearly non-Islamic investment), their use can lead to very undesirable risk reputation, especially among Islamic banking.One may find a variety of arguments against such a "technological transformation under Shariah" for example, introducing the concept of "Sadd al-Dhara" legitimate means to block such transactions.

In addition, there is definitely a difference between using Libor as a benchmark for pricing, and the use of Shariah unhallowed assets as provisions for a refund (Hadžić, 2005).Upon these, the total yield of the swap, the investor actually indirectly participates in Shariah unhallowed investment, and the money that has been paid will surely be used to finance other investments. Attempts to withdraw the legal analogy ("qiyas") between the use Libor as a benchmark for pricing and use of

Shariah unhallowed assets as provisions for refund may be considered inaccurate and misleading. From this perspective, there is no need to use Sadd al-Dhara' since these transactions can be immediately banned. There are other Islamic hedge products, but which are close to being already standardized, such as currency swaps based on Murabaha or qard contracts. Moreover, the Islamic standard contracts may become more popular in future, such as deferred diversification product price, salam contract based on values, mudaraba-based loan, mudaraba (or Musharaka) and delayed sales, as well as methods such as the appointment of debt collectors, the creation of quasi-debt, the use of associated hedge mechanisms or bilateral mutual adjustment.

It should be noted that the current trend in the development of Islamic products that try to replicate conventional financial products, but it may not be the way that Islamic banks will necessarily follow. Even the ethical and religious principles and considerations, it should be borne in mind that Islamic instruments that try to imitate conventional, but under additional restrictions Shari'ah, tends to be less effective than the "original". In fact, one can hardly expect that imitation products under some additional restrictions may be as effective as many Islamic reps can come with increased transaction costs. This trend makes Islamic financial institutions followers dominant conventional financial institutions (Ibreljić, 2009). While this is clearly understandable, considering the direct competition, the Islamic institutions are faced with striking differences in the size of market. If Islamic banks became more attractive for global and non-Islamic investors that would also make the Islamic products more attractive, and they would include them into their portfolios. Even more because the products are very innovative and very rarely correlated with other conventional financial instruments. It certainly can be done with the help of product development strategy, which is based on existing, and create products that comply with Islamic modes of financing. Yet, the Islamic products bear investment risks, which need to be undertaken by those who are willing to take such risks and decide to invest in them.

THE GLOBAL FINANCIAL CRISIS WITH A FOCUS ON THE ISLAMIC (INTEREST-FREE) BANKING

The global financial crisis started in the US by cracking the US housing market, which has been financed by the "second-rate loans". These were loans that banks granted to the loan risky, and later proved to be incompetent and creditworthy customers. Banks, on the one hand, the financial instruments and models, generated a huge surplus of money that they wanted to invest in the form of loans and thus more money. It is known that long-term debt, at that time a normal interest rate, the loans pays the bank interest in the value of loans taken. This would mean that the

loan is repaid by the interest in the value of two houses - one for himself and one for the bank. Following this logic, the banking business, the banks, for the lack of "quality" loans, granted loans to everyone expecting to achieve the planned profit. In the case of not being able to get the money from the loans, the bank would be able to collect the revenue from the sale of real estate - mortgages. Citizens were taking loans, and in case of inability to repay a loan, they would leave the house or the apartment to the bank.

They practically assumed that the value of real estate would continue to grow, and that their subsequent sale would make them big profits. It all worked well until the moment when the interest rates began to rise, real estate prices fall and new debtors long loans time came to repay the debts. Then it turned out that a large number of the debtors were unable to repay the loans. This has led to falling real estate prices, as well as refraining further customers from buying in anticipation of their further decline. These are just few examples and causes of the global crisis that is shaking the modern world. It is clear that the crisis did not occur only in the economic and material but also moral or ethical sphere of economic behaviour of modern man. Moreover, when we analyze the causes of the crisis, it is becoming clear that the Western experts have done everything contrary to what the Islamic economy, the Islamic banking and the Islamic financial system predicts and promotes.

The Islamic economy is, in essence, different from the Western economic system and prohibits any form of interest and monopolies, fraud and deceit, injustice and nipping, unnecessary risking and gambling, and the sale of debt, except under special conditions, etc. (Usmani, 2005).The economic system in Islam, first of all, is based on justice, mutual assistance and humanism. West draws a clear line between economics and justice, while the Islam is the basis of the economy. In the production, it prohibits the production of something that is harmful to humans, their lives and health. In consumption, without which no economy can survive, Muslims do not consume anything that is harmful for them or exaggerate in consumption of the allowed things. In this line, the CEO of Albaraka Banking Group, Mr. Adnan Ahmed Yousif said, that Islamic banks do not rely on bonds or stocks, and are not included either in the buying and selling of debt, unlike most conventional European and US banks. Buying and selling debt is prohibited under Sharia and Islamic law. The Islamic banks are therefore safe from the effects of the global financial crisis (Hadžić, 2009).

The success of Islamic banking will lead to serious consideration of Islamic economy, which continues to implement a number of achievements, as an alternative to the current global economic system. The managing director and board member of the Arab financial houses, Dr. Fouad Nadim Matraji explained that Islamic banks are not significantly affected by the mortgage crisis on the international financial markets and that they are largely immune against such crisis owing to inherent factors within

Islamic banking. The most important of these factors is the ban on trading debt, taking precautions against money laundering, as well as official and technical constraints underpinning the bank's operations. Dr. Matraji explained that Islamic banks have several alternatives to conventional banking products, such as Murabaha and the like, which show that the Islamic banking system can be an alternative to conventional Banking. Matraji added that Islamic banking is characterized by commitment, integrity and distancing from risky projects. He stated "the global financial crisis may affect only the profits of Islamic banks, but not the capital, which is protected by the Islamic banking".

Five years ago, when the economic crisis was the biggest swing, speculated that the world a financial centres change addresses, to a growth economy, east inevitably lead to disorders positions existing centres and establish new ones, and that the necessary economic adjustments at the international level. At the invitation of many financial experts certain corrections were already underway, and in the future they will lead to the structuring of the new financial architecture that will change the next financial ratio of power to bring about changes that will take the world from the process of globalization in the process of regionalization, where we would go from deregulation into a period of high regulation.

All this leads us to the principles of Islamic banking, in which many financial authorities see potential cure for the global crisis. Islamic banking encourages the movement of money through the economy, such as the blood circulates through the body. When the blood stops, there is a clotting and heart attacks and strokes, as well as money when it comes to fit the financial impact.

Today, in addition to Islamic countries, at universities in Australia, Canada and the US studies, Islamic economics, banking and finance. Therefore, one should believe that the development of an ethical approach to economics and Islamic banking act as a stabilizing, but also as a preventive factor in the development of new global financial crisis. In Jakarta was held the "Islamic economic summit meeting". Representatives from 36 countries expressed their support for the expansion of the Islamic financial and banking system globally. Indonesian President Susilo Bambang Yudhoyono has asked even the formation of a kind of financial centre in which to concentrate business "Islamic banks" - as a counterweight to the capitalist New York. As an argument in support of its request to the President of Indonesia, said that Islamic banks are not affected by the current global crisis" because they have not invested the money in risky western financial products". The Islamic banking system is gaining increasing popularity among the population. Michael Saleh Gassner is a renowned expert on Islamic banking system, which raises the question: "Can it be that the financial crisis could be avoided by Islamic banking?" (Hadžić , 2009).

It is certainly to believe that it is possible, if we consider all the rules that apply. One of the most important rules is the prohibition of interest. If for example, you take German or US government debt, these are debts that a year has been rising steadily. The second rule is that it is allowed to take a loan and therefore may require money, that kind of profit. But it must be a business that is based on the real laws of the market economy. That is, it is necessary to analyze in detail the work that is based on the real laws of the market economy.

ISLAMIC BANKING IN BOSNIA AND HERZEGOVINA

In domestic terms, when the entire banking sector is based on the conventional banking system, an alternative way of doing business is a challenge but also a pretty tough job. This particular in aspect of the domestic legal and economic system that does not respects the specifics of the Islamic interest-free business model. The existing legal framework is not a constraint for the establishment and operation of Islamic banks, but it is for their business expansion. The Islamic financial system is not new in Bosnia and Herzegovina. It is not mentioned a few years back since the establishment of BBI (Bosnia International Bank), but dates from the time of processing the current and universal economic issues in the spirit of Islam, and writings from remarkable individuals, which coincides with vesicle contemporary Islamic 70s and early 80s.

Bosnia and Herzegovina is going through a period called transition from social-planned economy to a market, or an open economy. The results of such a transition are already visible in the 'field'. Most of the former state-owned companies were privatized and ownership once social collectives and workers, is now in private hands. This proprietary conversion is many of our fellow citizens or unclear or even abstract, so there is no wonder that many of us cannot cope in the new system. Transformation of social to private ownership is certainly highly desirable in many of its fields because it establishes a system of values that would be in his theory should be based on work, personal commitment, entrepreneurship and in essence inalienable private property system and institutions and the rule of law in charge of the protection of individual and collective rights.

At the same time, the market economy and social order that brings with it many problems because they give unscrupulous individuals the area, and even in some cases, the institutions that are hidden and used the system to achieve purely personal narrow interests at the expense of others. Western institutions of the market economy beat everyday battle to preserve and protect the rights of vulnerable single person. Bosnians used to the social benefits of the former system is sometimes difficult to cope in the new competition. With the post-war destroyed the economy, lost markets, vulnerable social infrastructure i.e. pension, social and other institutions, the transition from a controlled system of "organized chaos", it seems,

favours the minority. Since B&H enjoys a strong tradition of social system which lacked the dimension of market economic principles that foster the practice of meritocracy and the merit of the work, the principle that just based on these two bases seems like a system that is designed around the needs of the Bosnian.

So, open market economy with a strong social dimension and the balance between these two complementary aspects of the very thing on which rests the economic system, and that requires an Islamic economic order. It is a synthesis of the personal and the collective, which is skilfully interwoven in all fields of business and labour, because, after all, talking about Islam as a way of life, that faith in which the individual himself regulator. In such a system, Islamic banking takes a key and vital role as a catalyst of such order. The Islamic bank, like BBI, significantly and substantially different from their conventional competitors, not only in the aspect of the prohibition of the interest, but also the dimension of support and funding projects that have wider benefits and long-term basis, which promotes economic and social stability of society

The Islamic economy and banking is based on the principle of sharing risk and funding projects that have behind only the specific activity (asset -backed finance) and do not allow the abuse of a strong financial position of the bank or any other entity.

Banking business according to the Islamic principles – the example of BBI

BBI was founded on 19thof October 2000, as the first bank in Europe operating on the principles of Islamic banking. Share capital of BBI was 24,29 million EUR, which then constituted the largest paid-in capital, compared to other banks in the country. With this capital, the BBI was ready to support the reconstruction and further development of Bosnia and Herzegovina. The founders (BBI shareholders) are from rich Gulf countries and are among the world's strongest financial institutions. The funds of over 22 billion USD stand behind all of business activities. BBI received in 13 March 2002 a deposit insurance license in November of the same year. The primary task of BBI is to financially support and monitor their clients, legal and natural persons. It also offers a number of services to its clients, and one of the most interesting is the way in which clients can have savings at the respective banks.

Bellow one may find the clarification of different types of savings accounts, which the bank offers, in order to give a better insight into the aspect of their business: (Klepic, 2009):

- *Savings and investment deposits - a vista account*. This is a savings of which the owner has the funds available within the available amount entered in the passbook. This savings is not intended for investment, and therefore is not

intended to generate a profit. However, given that the bank these funds typically used for short-term investment, it has the approval of the Shari'ah Board to reward the owners of these accounts stimulating prize.

- *Annuity "Wakala" savings*. It is a savings account with a defined amount and term period . Calculation and payment of profits is done monthly on a vista account. The client can increase the monthly deposit amount.
- *Open "Wakala" savings*. Open Wakala savings account with a specified minimum period, and the minimum deposit amount. Calculation and payment of the profit is made quarterly on a vista account. The owner is free to invest and raise funds, if not below the stated minimum for this product.
- *Children "Wakala" savings*. It is a savings account with a specified minimum period and a minimum deposit amount. The calculation yields is done monthly, and the payoff at maturity on vista account. The owner may increase the monthly deposit amount.
- *Hajj "Wakala" savings*. Hajj Wakala savings deposit savings deposit with a defined amount and term . The calculation yields is done monthly, and the payoff at maturity *avista* account. The owner may increase the monthly deposit amount

Business insight BBI-financial statements

TABLE 1. BALANCE SHEET

	2011	2010
Assets		
Cash and balances with other banks	122,049	75,388
Cash and balances with other banks in Central bank of B&H	39,984	45,849
Placements with other banks	77,012	121,426
Financial assets available for sale	111,481	111,481
Financial assets available at fair value through gains or losses	770,585	952,475
Finance of clients	394,109	341,526
Payments on account of income tax	80,188	299,237
Other assets	4,958	1269,314
Other assets and equipment	18,762	16,722
Intangible assets	557,403	224,917
Total assets	337,121	308,747
Obligations		
Obligations with other banks	69,016	57,782
Obligations with clients	453,223	437,512
Borrowing	25,957	1572,463
Other obligations	6,458	5,124
Commission on the basis of commitments and other charges	3,888	5,124
Total obligations	10,919	507,115
Equity	97,905	97,905
Equity principal	792,099	792,099
Mandatory reserve	2,101	1,966
Accumulated gains and losses	100,798	96,732
Total obligations and capital	659,341	603,847

Source: Klepic, 2009: 33

In order better to understand the business of the BBI by the principles of Islamic economy and banking, Table 1 presents the financial statements of the business of BBI in 2011. All amounts are expressed in 000 Euro. As one may see from Table 1, the BBI has constant growth and improvement in its operations. Assets of BBI, within one year increased by nearly 30,000 KM, which represents an increase of assets by about 8%. The unstable political and economic conditions, in what is currently in our country, this is a significant achievement. A dramatic increase in the position of "borrowing", which may indicate the need for banks for additional funds during that year. Unlike since 2010, we can notice that in the 2011that BBI bank operated with profit, which represents an excellent financial result, especially when one considers the fact that the Bank operates under Islamic principles.

TABLE 2. INCOME STATEMENT BALANCE

	2011	2010
Murabaha, Wakala Musharaka, Ijara	33,579	30,037
Coststo customers and banks by Wakala	13,391	11,889
Net investment income and investments	20,188	18,148
Net costs and commissions	717,779	9,806
Net income after provisions and costs	19,469	8,341
Income from fees and commissions	9,757	10,413
Costs from fees and commissions	1781,734	1439,469
Net financial income	428,320	289,458
Other operative incomes	314,884	8,353
Staff costs	14,315	12,406
Amortization	1865,833	1646,784
Other operative costs	8,072	11,833
Off receivables and accounts	678,663	756,895
Profit before tax	4,528	829,259
Tax	461,569	13,691
Net profit for the year	4,066	13,691
Earnings per share (EURO)	6,845	1,369

Source: Klepic, 2009: 34

Income Statement BBI best shows progress in business between the two accounting periods. Profits are, in almost every aspect, and enable increased bank managers further progress in the business. The attached income statement, it can be concluded that the bank in 2011 the more carefully placed their investments, as evidenced by a slight increase in profit on the basis of these investments. Due to the expansion of its business and the opening of new branches, increased staff costs. However, one can notice more efficient receivables management banks, since write-offs decreased in the 2011, compared to the same period 2010. Net profit in 2011 was significantly higher compared to 2010, and the best indicator of success and progress in the operations of BBI is to increase earnings per share in the same period of 2010.

CONCLUSION

It can be concluded that today the economy exists primarily thanks to government intervention and incentives in various economic spheres. One can say that artificially trying to keep the apparent stability and prosperity, which means it is only a matter of time before they again come to a complete collapse of all economic institutions.

The issue of Islamic (interest-free) banking provokes attention all the leading experts in the field of economics, but also the media attention because of its unique approach to economic problems. Through this study, one may see that the future of this concept of banking has been extremely positive, and that will surely be followed by further growth and progress throughout the world. While every economic system has its faults, it seems that the economic system that respects the Islamic principles and regulations has the best response to the current developments in the economy. Hence, one may conclude that the Islamic (interest-free) banking is rather new form of banking for most people.

Its development began in mid-1960s of the last century, but we can notice that this development is still in progress. The development and progress of Islamic (interest-free) banking is inevitable, but there are still some obstacles to its spread. The fact that goes in favour of conventional banking is that many people are not ready to make the transition to Islamic (interest-free) banking, and therefore Islamic finance.

This may be due to fear of moving to a completely new system of values, but also because of the loss of certain conditions that they face in today's economy. The interest of the majority of individuals required to generate large profits, regardless of its origin and mode of acquisition and earnings. Therefore, we can conclude that in today's world there is a lack of desire to move towards Islamic banking by the richest and most powerful men. We believe that, because of all the positive characteristics, Islamic banking would bring (to the world, as well as in Bosnia and Herzegovina), a certain amount of stability and prosperity in all economic fields.

The economic experts have yet to determine what the actual positive impact has the Islamic banking, should be accepted as a primary aspect of performing banking operations. It can safely be argued that many of the world economy had a huge improvement, and that economic power would no longer be in the hands of a few individuals. However, Islamic banking has a fairly complex structure of financing and financial instruments. Although, in essence, all models of funding and financial instruments are similar to those of traditional banking, they still represent a specific brake further development of this form of banking.

One of the main advantages of the Islamic (interest-free) banking is concerning its position in the global financial crisis and risk management in the daily operations. As we may notice, the risk management in the Islamic banking industry is very developed, and is a major advantage compared to the conventional type of banking.

Thanks to its methods in risk management, Islamic (interest-free) banking is almost intact emerged from the global financial crisis that hit the world 2008. In addition, one may conclude that the main cause of the global financial crisis, credit risk management in Islamic banking plays a very small role concerning the conditions of doing business. Obviously, this is primarily related to interest in Islamic banking in its distinctive shape, which does not exist.

Besides all the advantages of this form of banking and financial system, it should be noted that there are still some shortcomings that make the Islamic banking and finance extremely vulnerable. This primarily refers to the underdeveloped financial instruments, and the problems of business management. Evidently, these shortcomings must be taken with some reservations, since the Islamic banks and financial institutions still do not have the approximate effect as conventional banks.

Moreover, banks operating under the Islamic principles still do not have the necessary support from the governing bodies in most countries. If these shortcomings are repaired and Islamic banking continues its journey towards continuous improvement, one could witness a completely new economic environment. Such conditions would create environment which will not have the main goal to create huge profits, but to take into account the moral and ethical correctness of all economic decisions.

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OPEN ACCESS ARTICLE

RACIAL DIFFERENCES IN ECONOMIC BEHAVIOR PATTERNS AND MARKET PERFORMANCE IN BUSINESS VENTURES: A COMPARATIVE STUDY OF BLACK-OWNED AND WHITE-OWNED BUSINESS ENTERPRISES

D. Anthony Miles

Our Lady of the Lake University, San Antonio, Texas USA

damiles@lake.ollusa.edu

Abstract

The purpose of this study is to compare entrepreneurial risk and market behavior patterns between BBE and WBE. This study is a continuation of a prior study on SMEs. A majority of the prior research on Black-owned business enterprises (BBE) concluded that they are less successful and have dismal profitability compared to White-owned business enterprises (WBE). Two independent studies are conducted comparing both groups. Both ethnic/SME groups are examined across 11 different industry types. This research examines the market and economic and entrepreneurial risk patterns of BBEs compared to WBEs. A multivariate regression analysis is used to measure ethnicity as a predictor variable. The results indicate that BBEs were not much different or any more risky compared to WBEs. Despite the prior research that states to the contrary, the results indicate that BBEs are equally likely to be as competitive as WBEs in terms of firm dynamics.

Key words

Economic behavior; Market performance; Black-owned business enterprises; Market patterns; Customer turnover.

INTRODUCTION

One of the most interesting aspects of research on black-owned business enterprises (BBE) is their success or failure rates. BBEs have some socioeconomic constraints that interfere with the capability to reach equal with white-owned business enterprises (WBE). Although some of prior research on BBEs compared WBEs has been dismal on their firm behavior and survival rates, this continues to intrigue researchers on black-owned business enterprises and minority-owned business enterprises. Notable researcher has all concurred that BBEs have sociological and economic issues that affect their economic prominence compared to their white-counter parts. The majority of the

prior research on the firm survival of BBEs has been bleak at best. This leaves many researchers to conclude dismal success and failure is a self-fulfilling prophecy concerning BBEs.

Two major key influences in comparing BBEs to WBEs are social and economic constraints. Nevertheless, BBEs have been successful in their own right that may transcend race, socioeconomic factors. Most notable, financing and venture funding has been a challenge (Boden & Headd, 2002; Zajonc, 2003; Handy, 2008; Strang, 2001). However, BBEs can still be competitive in their own marketplaces (Porter, 1995a; Porter, 1995b; Porter, 1995c; Robb, 2002; Renzulli, 2009). Thus, entrepreneurial risk plays a pivotal role in comparing BBEs to WBEs. By examining entrepreneurial risk, we may gain more insights on firm behavior to understand ethnic differences between the two groups.

Most notably, the prior research on BBEs and minority-owned businesses seems to focus on three general areas: (a) psychological studies, (b) sociological and socioeconomic studies; and (c) economic studies. Considering the issues that some BBEs face, there have been some successful firms. Furthermore, a significant amount of the prior research on them has relied on government data or secondary data. Very few of the prior studies used primary data and often yielding generalized results that often supported the conventional wisdom on the vitality and survival of black-owned business enterprises. Furthermore, this leads to an incomplete picture of the underlying factors that influence the success and failure of BBEs.

The purpose of this study is to compare differences between black-owned business enterprises and white-owned business enterprises. This study examines the entrepreneurial and economic behavioral patterns between the two groups. This research has three primary objectives: (a) compare and contrast economic differences between BBEs and WBEs; (b) investigate and explore the firm idiosyncrasies between the two groups; and (c) examine and compare customer turnover analytics between the two groups to estimate profitability levels.

The central contribution of this research is to build on the prior research on black-owned business enterprises and open a new inquiry by examining group differences in terms of entrepreneurial risk behavioral patterns. This study also attempts to challenge the prior studies and the conventional wisdom on black-owned business enterprises. This research attempts to make three contributions to the field. First, provide insight into the firm dynamics of black-owned business enterprises. Second, provide empirical support and foundation for the research. Lastly, extend the research beyond the prior research on black-owned business enterprises.

The paper is structured as follows. First, a review of the literature and prior research relevant to the study was compiled. Next, Section 2 discusses the hypotheses proposed for the study. Section 3 describes the sample, variables and data collection. Section 4 presents the conceptual model of the study. Section 5 presents the results and the statistical analyses of the data. Section 6 presents the discussion of the results, implications, and directions for the future research. Finally, the conclusion and summary are presented.

LITERATURE REVIEW AND PRIOR STUDIES

Prior Research on Black Businesses

A majority of the prior research on comparing black-owned business enterprises to white-owned business enterprises have been varied and mostly focusing on socioeconomic studies. Based on the literature there is a large body of the research has concluded that black-owned business enterprises have not as successful compared to white-owned business enterprises. The major of the prior research on comparing the black businesses with white businesses were three types: (a) psychological studies, that based on research on individual psychological characteristics comparing black businesses with white businesses; (b) sociological studies, that examined sociological factors that impacted successful operations of black businesses compared to white businesses; and (c) economic studies that focused on the economic characteristics of black businesses compared to white businesses (Hornaday & Hunnally, 1987). Also further studies have focused on inner city economic development and black entrepreneurship. Many of the black-owned business enterprises were limited to the inner city (ghetto) communities (Tabb, 1969). Other studies have examined the state of the inner cities and black entrepreneurship (Bates, 1973; Porter, 1995a; Porter, 1995b; Porter, 1995c; Simms & Allen, 1995; Butler, 1996; Boston, 1995; Fairlie & Robb, 2007). Some studies offered possible solutions to developing more black-owned business enterprises in the inner cities (Bates, 1973; Bates, 2006; Bates, 2006; Bates & Bradford, 2009; Bates, 2010).

Some of the research has concluded that many black business owners had fewer years of education and less business experience than their white counterparts. Furthermore, black businesses were also smaller, more labor intensive, located in poorer neighborhoods, less likely to have insurance, visited by fewer customers per day, more likely to rent their shops and to be less profitable than white businesses (Auster, 1988). Christopher (1989) concluded the probability of minority business survival is increased

with the number of years of formal education to some threshold. Furthermore, minority business survival was increased with the utilization of commercial bank financing to enter into business; and there is a slightly higher rate of survival for individuals who use a mix of debt and equity capital in business formation. The following hypothesis was developed from the preceding literature and prior research:

> ***Hypothesis 1:*** There are differences between black-owned business enterprises (BBE) and white-owned business enterprises (WBE) in terms of individual demographics (age, marital status, and education level).

In another study, Bates (1990) concluded that Black enterprises have diversified and grown in size and scope, they have also had added many employees, most of whom have been African Americans, a profound difference from firms that are not owned by minorities. Furthermore, Blacks hire Blacks, while White owners employ a predominantly White workforce. In a follow up study, Bates (1994) reached similar conclusions.

Some of the research examined black-owned business enterprises over a course of time to measure firm survival. In longitudinal study, Boden and Headd (2002) concluded there were differences in firm survival based on race and gender ownership in dissolution rates and factors related to dissolution. Singh, Know and Crump (2008) asserted they found significant differences between the percentage of black and white nascent entrepreneurs, who recognized externally-stimulated versus internally-stimulated opportunities and their projected firm revenues. The following hypothesis was developed from the preceding literature and prior research:

> ***Hypothesis 2:*** There are differences BBEs between WBEs in terms of firm demographics (length of business ownership, entity type, industry type, employee number, and capital investment).

Lastly, black nascent entrepreneurs were more likely to pursue externally-stimulated opportunities with significantly lower expected revenues than their white counterparts. Other studies have examined black businesses and minority economic development were notable research from Bates and Hester (1977), Ekanem (1992), Zajonc (2003), Handy (2008), Strang (2001), and Sonfield (2007).

Racial Barriers to Firm Existence

One of the racial barriers to firm existence has been limited access to capital. Minority-owned businesses and firms with limited access to capital were constrained in their ability to generate sales and production when compared to peer-firms within the same industry. Furthermore, minority-owned businesses face socioeconomic disadvantages

that limited their size and scope (Rodgers, Gent, Palumbo and Wall, 2001). Some of the prior research has also compared firm dynamics and survival chacteristics among subminority groups and genders (Moskowitz, 1983; Miles, 2013; Robb, 2002; Renzulli, 2009). The following hypothesis was developed from the preceding literature and prior research:

> ***Hypothesis 3:*** There are differences BBEs between WBEs in terms of market behavior and entrepreneurial risk factors.

The prior research on economic development and employment segmented by ethnicity has been significant. An interesting fact concerning employment is that most of the nonminority-owned small businesses operating in large urban areas did not employ minorities. Even among the businesses physically located within minority communities, the majority of the workers in the nonminority small firms were white. However, Black-owned business enterprises, in contrast, relied largely on minority workers even when their firms were located outside of minority neighborhoods (Bates, 2006). In another study, Boyd (2006) found that geographical and occupational shifts reflect salient post World War II changes in race relations, most notably the decline of racial segregation in many areas of social life and the increase of opportunities for black entertainers to achieve distinction on a national level.

Another pivotal study on black-owned business enterprises compared to white-owned business enterprises was from Fairlie and Robb (2007). They concluded that based on estimates from the 1992 Characteristics of Business Owners (CBO) Survey indicated that: (a) black-owned firms have lower profits and sales, hire fewer employees, and are more likely to close than white-owned firms; (b) Secondly, black business owners are much less likely than white business owners to have had a self-employed family member owner prior to starting their business and are less likely to have worked in that family member's business; (c) thirdly, black firms and white firms concentrate in different industries; black firms are underrepresented in construction, manufacturing, wholesale trade, agricultural services, finance, insurance, and real estate relative to white firms; and (d) lastly black firms are more concentrated in transportation, communications, public utilities, and personal services than white firms.

These industry differences are associated with worse outcomes among black-owned firms. Interestingly, minority-business startups have some acute proclivities. Black and whites are more likely to own businesses in newer immigration gateways, while Hispanics and Asians are more likely to do so in the more established gateways (Wang, 2010).

Financial and Capital Matters

In terms of financial activity, in terms of lending and venture capital, there differences between black and white businesses with lending policies with the Small Business Administration (SBA). Bates (1973) concluded that in general, for shorter-term loans from the New York SBA average black borrowers generating average levels of cash flow would receive larger loans than whites with identical loan applications. Black borrowers who were weaker than average will, in the absence of especially large cash flow, tended to receive smaller loans than identical firms owned by whites.

Furthermore, due to the fact that loan amount is quite sensitive to the level of a firm's cash flow, extremely weak black firms were considerably penalized and extremely strong. Black borrowers have considerably benefited relative to whites with comparable loan applications. Black business owners were more concerned about growth/expansion and capital as opposed to white business owners (Hornaday & Hunnally, 1987). Many minority-owned businesses and firms with limited access to capital were constrained in their ability to generate sales and production when compared to peer-firms within the same industry. Furthermore, minority firms were stronger in services industries but performed poorly in manufacturing industries such as production function based on measures of efficiency and productivity. This was due to a low level of productivity or possibly access to more fruitful markets and profitable business opportunities (Rodgers, Gent, Palumbo and Wall, 2001). The following hypothesis was developed from the preceding literature and prior research:

> ***Hypothesis 4:*** There are differences BBEs between WBEs in terms of customer turnover analytics and customer behavior.

In a later study, Branchflower et al. (2003) asserted that credit availability for black-owned business enterprises were likely the result of discrimination policies based on race in small business credit markets. As a result, this racial disparity with credit availability was most definitely based on race and discrimination. Coleman (2008) reached similar conclusions. She concluded that black-owned firms were no less likely to have loans than white-owned firms controlling for firm and owner characteristics. Secondly, black-owned firms were still significantly more likely to be turned down for loans and more likely to refrain from applying because they assumed they would be turned down. Lastly, black firm owners who were approved for loans paid significantly higher rates of interest. The problem for black business owners is lack of access of capital that is needed to establish business enterprises successfully (Maudin, 2012). The following hypothesis was developed from the preceding literature and prior research:

Hypothesis 5: There are differences BBEs between WBEs in terms of Entrepreneurial Risk Orientation (ERO) index levels.

Government Involvement and Issues

Government involvement has been a force in developing economic development in the inner cities and black-owned business enterprises. This is was most likely to be at the local, state and federal levels in being an agent in economic development. In most cases, cities with African American mayors were more conducive than other cities to African American economic development with regard to both the numbers and sales activity. Most notably, black mayoral incumbency and significant but not majority black political representation on city councils was most conducive to Black business numbers and level of activity (Hewitt et al. 1987).

Market entry barriers have been an influence on black-owned business enterprises. As an entry barrier, consumer discrimination was found to deter black firm entry in four industrial sectors identified in the Census Bureau's 1992 Survey of Minority-Owned Business Enterprises (SMOBE). The results show that in 1992, consumer discrimination resulted in the lost of $5.6 billion dollars of black producers' surplus (Price, 2005).

Criticisms of the Prior Research

One critical observation that was most apparent is the tendency of the prior research to utilize a significant amount of government agency data or secondary data. What was equally disturbing were some of the prior studies that used data sets that were nearly 10 years old. Thus, the prior research using secondary data seemed to maintain the accepted conventional beliefs about the failure or non-success of black business enterprises. Notably, very few prior studies collected primary data on black business enterprises. Another interesting observation is that some of the prior studies seemed to ignore e-business ventures or internet businesses, which tend to be ethnicity free or color neutral. Another interesting observation is the prior research does not take in consideration on data on black franchise owners. The research methodology for examining on black business-owned businesses and minority owned-businesses needs to be severely updated.

The objective of this study is to conduct comparative research on BBEs and WBEs. The researcher wanted to take an unconventional approach for this study. This study attempts to provide a new inquiry on black-owned business enterprises by focusing on economic models and entrepreneurial risk models. This study did not use any government or secondary data. The researcher attempts to build on the prior research

on black businesses; and thus add to the body of knowledge. Figure 1 illustrates the Literature Review Model:

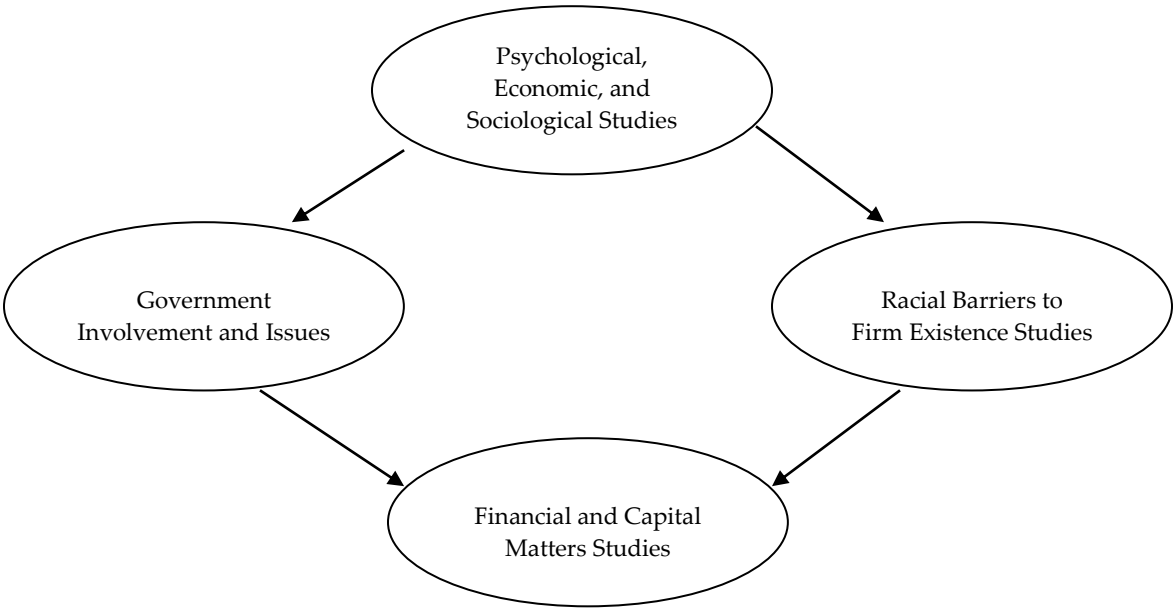

FIG. 1 LITERATURE REVIEW MODEL

THEORETICAL FRAMEWORK AND CONCEPTUAL MODEL

Conceptual Model of the Study(s)

Figure 1 illustrates the conceptual model. The model illustrates that typically risk factors influence small business enterprises (BBEs and WBEs). The conceptual model proposes the entrepreneurial risk factors influence the BBEs and WBEs. Ethnicity is proposed as a moderating influence to the two groups. Lastly, the risk factors are measured, which determine the ERO index levels.

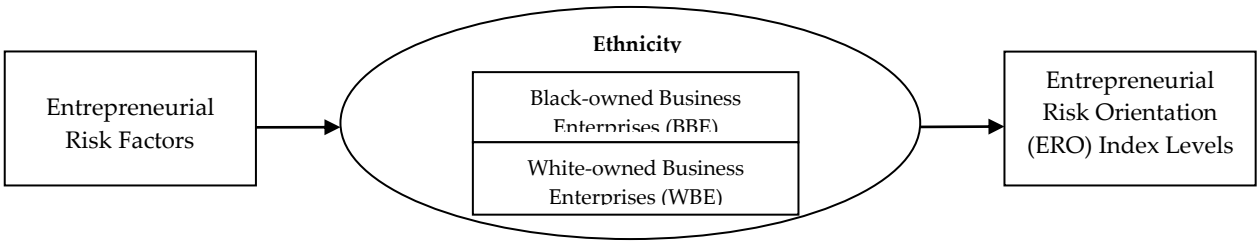

FIG. 2 CONCEPTUAL MODEL FRAMEWORK

Two models were used for both studies. The first model measured eight factors between black business enterprises (BBE) and white-owned business enterprises (WBE) in Study 1. For the Study 2, seven different factors were measured.

Study 1 Model

ERO Index Levels = F1 + F2 + F3 + F4 + F5 + F6+ F7 + F8
Where

F1 = Factor 1: Industry/Economic Forces
F2 = Factor 2: Terrorism/Security Dynamics
F3 = Factor 3: Government/Market
F4 = Factor 4: Market Forces
F5 = Factor 5: Global/Economic Forces
F6 = Factor 6: Internal Forces
F7 = Factor 7: Business Enterprise Intangibles
F8 = Factor 8: Profit and Inflation

Study 2 Model

ERO Index Levels = F1 + F2 + F3 + F4 + F5 + F6+ F7
Where

F1 = Factor 1: Internal Enterprise Operations
F2 = Factor 2: External Enterprise Operations
F3 = Factor 3: Overhead Costs and Operations
F4 = Factor 4: Government and Market
F5 = Factor 5: Profit and Energy Factors
F6 = Factor 6: Globalization and Market
F7 = Factor 7: Economic Forces

METHODOLOGY

The purpose of this study was to conduct a comparative analysis between black-owned business enterprises (BBE) with white-owned business enterprises (WBE). The objective of the study was to measure market behavior and firm behavior patterns based on economic and entrepreneurial risk constructs between the two groups. Based on the prior studies and literature review, the researcher wanted examine if there were differences between BBEs and WBEs. This study was built on a theoretical model developed on measuring economic behavior and market behavior of small business enterprises (SME).

Sampling

This study took place over a three-year period from 2011 - 2014. Both Study 1 and Study 2 were conducted during this period. This study is a continuation of two prior studies on market and economic behavior patterns of SMEs (Miles, 2011); and economic patterns and gender differences with Black-owned business enterprises (Miles, 2013). The sample was drawn from a population of less than 30,000 small-to-medium businesses (SME) in the metropolitan area. The proportionate sample was based on estimated population of SMEs in the area. Participants were recruited from the local Bexar county and San Antonio metropolitan area. A total sample of 248 participants, which included Black-owned business enterprises (n = 112) and White-owned business enterprises (n = 136). For both studies, the researcher estimated that approximately 1,400 participants were solicited, which resulted in a response rate of about 18.0%. Participants selected were identified as black and white business owners from the local area from the surveys. In addition, the study required the respondents to be business owners and be in business at least one year or more. Lastly, the study used control variables such as age, marital status, and education level.

Sampling Frame and Data Collection

The sampling frame consisted of black-owned and white-owned business enterprises. This research utilized systematic random sampling to establish equal distribution from large, medium, SMEs. The researcher used the number of employees in the enterprise (500 or fewer) for qualifying businesses for inclusion in the study.

To test the hypotheses, data was collect through a researcher-developed survey. The study used a random sample from the businesses in the Yellow Pages Directory. Random phone calls to the participants were made from listings for both studies. The data was collected with the assistance of some governmental and non-profit agencies. Those agencies were the following: local Black Chamber of Commerce; Small Business Administration (SBA); local black business directory; Small Business Development Center (SBDC); Service Corps of Retired Executives (SCORE); Greater Chamber of Commerce; and Other local chambers of commerce.

For both studies, data collection strategy consisted of four tactics: (a) telephone cold-calling, through random phone calls to the participants from local chamber listings: (b) personal contacts; (b) web-based/email, administration of the survey instrument via Survey Monkey ®; (c) one-on-one personal survey interviews, administered the survey instrument in-person to the participants; and (d) drop-off administration by leaving the survey with the participants and making arrangements to retrieve it later.

Research Instruments

The Entrepreneurial Risk Survey (ERS). The scale developed by the researcher for the first study. ERS began as a pilot study for collecting data on entrepreneurial risk factors. It consists of a multidimensional scale design. It is a 32-item scale in order to identify and predict market behavior and risk patterns in business enterprises. ERS used a 5-point Likert scale (1 = Low risk to 5 = High risk). Of the 32 items in the survey instrument, 22 items were utilized to compute entrepreneurial risk and ERO index levels. Analyses were made through total scores obtained from the scale. The Entrepreneurial Risk Assessment Scale (ERAS). This scale was also developed by the researcher for the second study. It consists of a 37-item scale that identifies and predicts market behavior and risk patterns in SMEs. After further development of the pilot ERS instrument, three variables were added: (a) line of credit risk, (b) customer credit risk; and (c) economic risk. Analyses were made through total scores obtained from the scale. ERAS used a 5-point Likert Scale ranging from "1" Low risk variable to "5" high risk variable. Of the 37 items in the survey instrument, 25 items were utilized to assess entrepreneurial risk and ERO index levels.

Measures

Dependent Variables

For Study 1, the dependent variables are the factors and variables used for measuring market behavior and risk patterns in the data: Factor 1: Industry/Economic Forces; Factor 2: Terrorism/Security Dynamics; Factor 3: Government/Market Forces; Factor 4: Market Forces; Factor 5: Global/Economic Forces; Factor 6: Internal Forces; Factor 7: Business Enterprise Intangibles; and Factor 8: Profit and Inflation Forces.

For Study 2, the dependent variables are: Factor 1: Internal Enterprise Operations; Factor 2: External Enterprise Operations; Factor 3: Overhead Cost and Operations; Factor 4: Government and Market; Factor 5: Profit and Energy Factor; Factor 6: Globalization and Market and Factor 7: Economic Forces. For of hypotheses testing, these dependent variables were defined as a composite index composed of eight to seven indicators of market behavior and entrepreneurial risk. The combined composite ERO index provides a more robust test of hypotheses for both studies.

Independent Variables

To assess the entrepreneurial risk levels of the small business enterprises (SME) for the study, the ERO levels were examined from the independent variable, ethnicity. Five

independent variables were also used in the study (gender, business entity type, time length of business ownership and industry type, and capital investment amount). However, for the purposes of the study, ethnicity was the primary independent variable used for this comparative study.

Control Variables

Three control variables were used for this study: (a) age, (b) marital status, and (c) education level. To control the dynamics of the study, the black and white business owners were asked to consider all of the survey factors and items that can possibly influence their responses and decisions. The respondents were instructed to complete the survey based on the current state of their business enterprises. First, the control variables were an influence but not the focus in the study. Second, there were no dummy variables used for the study. There were other controlled variables included in the analyses. First, the size of the firm was controlled because firm size is based on the number of employees in the firm. Second, the group represents is controlled for the effect of group membership by ethnicity. Group is a dummy variable, with a "1" indicating membership in an ethnic Group 1: "Black" and "2" indicating membership in Group 2: "White." Last, the researcher controlled for the age of the firm by including the time length of business ownership. The empirical analyses include descriptive statistics; mean and standard deviations comparisons and multivariate regression analysis are illustrated in the forthcoming tables and figures.

RESULTS OF THE STUDY

Data Analysis

The study employed a quantitative methodology. The data of the study were analyzed by means of an independent sample t-test and multivariate regression analysis. In multivariate regression analysis, the hypotheses were tested. The research design employed a two-step process to test the hypotheses. For step one, a descriptive statistical analysis was conducted for both studies. Descriptive statistics were used to measure frequency trends and percentage trends, and compare the scores. This was conducted on personal demographics and firm demographics.

The researcher examined the heterogeneity of such variables such as gender, age, and others. For step two, multivariate analyses were conducted on the data for both studies. These analyses were conducted on market and economic behavioral patterns and firm demographics. Multivariate statistics were used to measure relationships and patterns in the data and make inferences about the samples. The researcher examined the heterogeneity of such variables such as gender, age, and others. Data collected from

both the ERS and ERAS instruments were analyzed using the SPSS ® Version 21.0 software. This was used for establishing central tendencies (mean, median, and mode) and developing the exploratory analysis, and data cleaning.

Descriptive Statistics

The descriptive statistics for demographics of the respondents are presented for both studies with Table 1 and Table 2. For Study 1, Table 1 displays a cross tabulation of the individual demographics with the BBEs and WBEs for Study 1. As indicated, the first column shows the descriptive of the customer turnover variables. The second column shows the two ethnic groups and the frequency and percentage of the respondents. The third column shows the F ratio. The next column shows the t-test ratio. Lastly, the remaining column shows the significance coefficient.

The hypotheses states there are differences between BBEs and WBEs in terms of individual demographics. Table 1 provides a cross-tabulation between ethnicity and the respondents in terms of personal demographics. There were some notable results. First, the results indicate that 63.2% of the BBEs were divorced compared to 36.8% of WBEs. Last, the results indicate that 35.0% of the BBEs had a graduate college degree compared to 65.0% of WBEs.

For Study 2, the results of the cross-tabulation between ethnicity and the respondents are presented in Table 2. There were some notable results for Study 2. First, the results indicate that 34.6% of the BBEs were married compared to 65.8% of WBEs. Conversely, the results indicate that 65.4% of the BBEs were divorced compared to 34.6% of WBEs. Third, 55.6% of the BBEs had a post-graduate degree compared to 44.4% of WBEs. Last, 31.0% of the BBEs were identified as an S or C Corporation had a post-graduate degree compared to 69.0% of WBEs.

TABLE 1. STUDY 1 - COMPARATIVE MEANS AND STANDARD DEVIATIONS OF SMEs BY EHNICITY

	Group 1		Group 2				
	BBEs (n = 54)		WBEs (n = 62)				
Demographic Variables	n	%	n	%	F	t	p
Gender							
Male	19	57.6	14	42.4	8.593	1.503	.004
Female	35	42.2	48	57.8			
Marital Status							
Single (never been married)*	9	81.9	2	18.2	3.093	.098	.081
Married*	28	36.8	48	63.2			
Divorced*	12	63.2	7	36.8			
Widowed	4	57.1	3	42.9			
Separated	1	33.3	2	66.7			
Age							
18 to 24	1	50.0	1	50.0	.140	-1.750	.709
25 to 35*	3	27.3	8	72.7			
36 to 46	15	42.9	20	57.1			
47 to 57	17	60.7	22	55.0			
57 and over	54	46.6	11	39.3			
Education Level							
Did not finish high school	-	-	1	100.0	1.246	-.188	.267
High school diploma	2	20.0	8	80.0			
Some college	20	58.8	14	41.2			
Bachelors	18	48.6	19	51.4			
Graduate degree*	7	35.0	13	65.0			
Post Graduate degree or higher	7	50.0	7	50.0			
Time Length of Business Ownership							
Less than 1 year*	12	37.5	20	62.5	.793	-1.180	.375
1 - 3 years	12	48.0	13	52.0			
4 years or more	30	50.8	29	49.2			
Compensation from Business							
Under $10,000	5	41.7	7	58.3	.005	2.478	.943
$10,001 to $25,000*	13	76.5	4	23.5			
$25,001 to $40,000*	9	60.0	6	40.0			
$40,001 to $60,000	10	43.5	13	56.5			
$60,001 to $100,000	11	44.0	14	56.0			
$100,001 and over*	6	25.0	18	75.0			
Industry Type							
Consumer Monopoly-Type Ind.	14	48.3	15	51.7	.079	-1.34	.779
Consumer Competitive-Type Ind.	8	36.4	14	63.6			
Semi-Commodity Type Ind.	10	58.8	7	41.2			
Commodity Type Ind.	22	45.8	26	54.2			

TABLE 2. STUDY 2 - COMPARATIVE MEANS AND STANDARD DEVIATIONS OF SMEs BY EHNICITY

	Group 1		Group 2				
	BBEs (n = 58)		WBEs (n = 74)				
Demographic Variables	n	%	n	%	F	t	p
Gender							
Male	23	31.1	51	68.9	2.060	-1.425	.154
Female	25	43.1	33	56.9			
Marital Status							
Single (never been married)	11	47.8	12	52.2	.396	1.142	.530
Married*	27	34.2	52	65.8			
Divorced*	9	34.6	17	65.4			
Widowed	1	50.0	1	50.0			
Separated	2	-	2	100.0			
Age							
18 to 24*	2	40.0	3	60.0	.732	-2.003	.394
25 to 35*	4	25.0	12	75.0			
36 to 46*	7	21.9	25	78.1			
47 to 57	17	40.5	25	59.5			
57 and over	18	48.6	19	51.4			
Educational Level							
Did not finish high school	-	-	1	100.0	2.452	-.890	.120
High school diploma	5	41.7	7	58.3			
Some college*	20	35.7	36	64.3			
Bachelors*	11	28.2	28	71.8			
Graduate degree	7	46.7	8	53.3			
Post Graduate degree or higher	5	55.6	4	44.4			
Time Length of Business Ownership							
1 year or less*	18	30.5	41	69.5	6.125	-1.990	.015
2 to 5 years*	9	33.3	18	66.7			
6 to 10 years	7	43.8	9	56.3			
11 to 15 years*	2	18.2	9	81.8			
16 to 20 years*	12	63.2	7	36.8			
Business Entity Type							
Corporation*	13	31.0	29	69.0	.390	-1.418	.533
Limited Liability Corp (LLC/LLP)*	4	26.7	11	73.3			
Partnership*	1	14.3	6	85.7			
Sole Proprietorship	28	45.2	34	54.8			
Other*	2	33.3	4	66.7			

(continues)

TABLE 2. STUDY 2 - COMPARATIVE MEANS AND STANDARD DEVIATIONS OF SMEs BY EHNICITY

	Group 1 BBEs (n = 58)		Group 2 WBEs (n = 74)				
Demographic Variables	n	%	n	%	F	t	p
Industry Type							
Agriculture	1	100.0	-	-	4.689	-.654	.032
Communication*	1	33.3	2	66.7			
Construction*	2	15.4	11	84.6			
Finance	-	-	4	100.0			
Manufacturing*	1	14.3	6	85.7			
Retail*	8	40.0	12	60.0			
Services	24	51.1	23	48.9			
Technology*	3	37.5	5	62.5			
Transportation*	1	16.7	5	83.3			
Wholesale	-	-	6	100.0			
Other Industry	7	41.2	10	58.8			
Number of Employees							
1 to 100*	47	36.2	83	63.8	.376	.298	.541
101 to 200	1	100.0	-	-			
201 to 300	-	-	-	-			
301 to 400	-	-	1	100.0			
Capital Investment Amount							
0 to $50,000*	41	36.9	70	63.1	.099	-.077	.753
$50,001 to $100,000*	1	14.3	6	85.7			
$100,001 to $500,000	6	42.9	8	57.1			
Franchise Ownership							
Yes	7	46.7	8	53.3	3.024	.877	.084
No*	41	35.0	76	65.0			

Comparative Analyses of Means and Standard Deviations: Independent Sample t-Tests

An independent sample t-Test was conducted for both studies to test the hypotheses in terms of market and economic behavioral differences between BBEs and WBEs. Tables 3 and 4 illustrate the results of market behavior and risk factors with BBEs for Study 1. As indicated, the tables illustrate the means and standard deviations, t-values, and degrees of freedom in the data. For Study 1, Table 3 illustrates the results of t-tests, BBE participants displayed similar factor means and standard deviations compared to WBEs. For example, Factor 5: Market Forces revealed similarities in means and standard deviations for BBEs (M = 8.71, SD = 4.895) and WBEs (M = 8.16, SD = 4.829). Overall, the t-tests means and standard deviations of both groups did not reveal any significant differences across the eight factors.

For Study 2, Table 4 illustrates the results of market behavior and risk scores with BBEs. The market behavior patterns and risk patterns of BBEs did not reveal any significant

differences compared to WBEs for Study 2. For example, Factor 2: External Enterprise Operations revealed similarities in means and standard deviations for BBEs (M = 9.36, SD = 5.645) and WBEs (M = 9.98, SD = 5.074). Overall, for both studies, the t-tests means and standard deviations of both groups did not reveal any significant differences across the seven factors. Thus, the hypothesis that BBEs are different from WBEs in terms of the means and standard deviation across seven and eight risk factors was not supported.

TABLE 3. STUDY 1 - COMPARATIVE FACTOR MEANS AND STANDARD DEVIATIONS OF SMEs BY ETHNICITY

Factors and Variables (N = 116)	BBEs (n = 54)		WBEs (n = 62)		
	M	*SD*	*M*	*SD*	*t*-Test
FACTOR 1: *Industry/Eco. Forces*					
• V13-Equipment Risk	2.65	1.246	2.48	1.067	-.765
• V10-Capital Investment Risk	1.37	.831	1.47	1.004	-.757
• V23-Government Reg. Risk	2.56	1.410	2.27	1.381	-1.084
• V24-Social Risk	1.24	.725	1.50	.937	1.649
• V20-Market Entry Risk	3.04	1.479	3.50	1.423	1.716
FACTOR 2: *Terrorism/Sec. Dynamics*					
• V27-Terrorism Risk	2.00	1.360	2.90	1.376	3.546
• V26-Security Risk	1.89	1.176	2.15	1.377	1.069
• V25-Environment Risk	1.80	1.265	2.45	1.445	2.581
FACTOR 3: *Government/Market*					
• V14-Diseconomies of Scale	2.37	1.350	3.23	1.487	3.225
• V29-Globalization Risk	2.19	1.555	3.06	1.991	2.623
FACTOR 4: *Market Forces*					
• V16-Intellectual Capital Risk	3.67	1.614	3.98	1.509	1.093
• V11-Time Intensity Risk	2.24	1.529	3.31	1.655	3.583
• V18-Customer Turnover Risk	3.52	1.587	3.85	1.502	1.172
FACTOR 5: *Global/Economic Forces*					
• V8-Expertise Industry Risk	2.56	1.574	2.60	1.531	.143
• V15-Protection Devices Risk	2.61	1.642	2.69	1.585	.275
• V9-Business Entity Risk	3.54	1.679	2.87	1.713	-2.108
FACTOR 6: *Internal Forces*					
• V17-Velocity of Profit Risk	2.85	1.753	2.81	1.818	-.135
• V28-Inflation Energy Risk	1.67	1.166	1.95	1.151	1.322
FACTOR 7: *Business Enterpr. Int.*					
• V21-Competitive Risk	3.13	1.672	3.02	1.604	-.373
• V19-Market Potential Risk	3.04	1.479	3.50	1.423	-1.303
FACTOR 8: *Profit and Inflation*					
• V22-Business Climate Risk	1.85	.940	2.18	.915	1.888
• V12-Labor Risk	2.78	1.313	3.27	1.528	1.863

**p <.1, **p <.05 and ***p <.01.

TABLE 4. STUDY 2 - COMPARATIVE FACTOR MEANS AND STANDARD DEVIATIONS OF SMEs BY ETHNICITY

Factors and Variables (N = 136)	BBBs (n = 58)		WBEs (n =74)		
	M	*SD*	*M*	*SD*	*t*-Test
FACTOR 1: *Internal Enterp. Operations*					
• V26- Line of Credit Risk	2.75	1.391	2.82	1.291	.297
• V16-Owner Time Dependency Risk	2.94	1.493	2.89	1.576	-.160
• V24-Customer Activity/Turnover	3.56	1.287	3.52	1.207	-.173
• V25-Customer Credit Risk*	2.40	1.317	2.62	1.343	.925
• V21-Experts Team/Advisors Risk	3.02	1.564	3.20	1.429	.678
• V20-Internet/Technology Use Risk	3.48	1.321	3.37	1.269	-.473
FACTOR 2: *External Enterpr. Operations*					
• V34-Security/CrimeVulner. Risk	2.56	1.515	2.56	1.264	-.012
• V35-Terrorism Vulner. Risk	2.63	1.539	2.95	1.307	1.297
• V32-Social Entrepreneurship Risk	1.50	.989	1.83	1.180	1.652
• V33-Environment/Climate Risk	2.67	1.602	2.64	1.323	-.092
FACTOR 3: *Overhead Costs and Oper.*					
• V18-Overhead Costs Risk	2.88	1.196	3.00	1.261	.558
• V17-Labor/Intensity Risk	3.29	1.398	3.37	1.259	.326
• V19-Equipment/Systems Invest. Risk	3.23	1.477	3.18	1.416	.600
FACTOR 4: *Government and Market*					
• V31-Government Regulation Risk	3.54	1.501	3.29	1.358	-1.002
• V28-Barriers to Market Entry/Exit	3.08	1.471	3.01	1.393	-.278
FACTOR 5: *Profit and Energy Factors*					
• V23-Velocity of Profit Risk	4.21	1.110	3.90	1.188	-1.445
• V36-Energy/Dependency Risk	3.67	1.464	3.20	1.369	-1.828
FACTOR 6: *Globalization and Market*					
• V37-Globalization Risk	3.40	1.364	3.81	1.124	1.879
• V29-Competition Intensity Risk	4.04	1.320	4.06	.961	.089
• V27-Market Potential Risk	4.50	1.167	4.25	1.181	-1.175
FACTOR 7: *Economic Forces*					
• V30-Economic Risk	3.83	1.173	3.56	1.079	-1.358
• V22 Intellectual Property Risk*	2.94	1.681	2.74	1.651	-.663

**p <.1, **p <.05 and ***p <.01.

Results of the Multivariate Regression Analysis

To test the third hypothesis, a multivariate regression analysis was conducted to determine the effect of ethnicity on the dependent variables (factors and variables) as a predictor variable. Table 5 summarizes the results of the multivariate regression analysis for Study 1. As shown in the first column of Table 5, the control variables did explain a significant portion of variance in Factors 2, 3, and 4 (adjusted R^2 = .123; F = 5.27; p < .001). The multivariate regression results revealed that ethnicity was significant for Factor 2 (V27-Terrorism, p < .001), Factor 3(V14- Diseconomies of Scale, p < .002), and Factor 4 (V11-Time Intensity risk, p < .001). Ethnicity was not a significant predictor variable for entrepreneurial risk. Table 5 also presents the adjusted and unadjusted group means. The ethnicity of the entrepreneur was not negatively and insignificantly

associated with entrepreneurial risk. For example, Factor 4: Market Forces revealed the following results the variable, Time Intensity ($F = 12.839$, $R^2 = .101$) ($\Delta R^2 = .093$; $p < .001$).

For Study 2, another multivariate regression analysis was conducted to determine the effect of ethnicity on the dependent variables (factors and variables) of market and economic variables. Table 6 summarizes the results of the multivariate regression analysis for Study 2. As shown in the first column of Table 6, the control variables did not explain a significant portion of variance in the Factors and variables (adjusted $R^2 = .123$; $F = 5.27$; $p < .001$). The multivariate regression results revealed that ethnicity was significant for Factors 1 to Factor 7. Ethnicity was not a significant predictor variable for entrepreneurial risk. The table also presents the adjusted and unadjusted group means. The ethnicity of the entrepreneur to the firm was not significantly associated with entrepreneurial risk. For example, Factor 1: Internal Enterprise Operation revealed the following results the variable, Customer Credit Risk ($F = .865$, $R^2 = .004$) ($\Delta R^2 = -.004$; $p < .357$). Therefore, these results do not support the third hypothesis.

TABLE 5. STUDY 1 – MULTIVARIATE REGRESSION USING ETHNICITY AS PREDICTOR VARIABLE

Factors and Variables ($N = 116$)	*SS*	*df*	Mean	*F*	R^2	ΔR^2	*p*
FACTOR 1: *Industry/Economic Forces*							
• V13-Equipment Risk	.779	1	.779	.585	.005	-.004	.446
• V10-Capital Investment Risk	.274	1	.274	.318	.003	-.006	.574
• V23-Government Reg. Risk	2.285	1	2.285	1.175	.010	.002	.281
• V24-Social Risk	1.940	1	1.940	2.718	.023	.015	.102
• V20-Market Entry Risk	6.186	1	6.186	2.945	.025	.017	.089
FACTOR 2: *Terrorism/Security Dynamics*							
• V27-Terrorism Risk	23.546	1	23.546	12.577	.099	.091	.001*
• V26-Security Risk	1.896	1	1.896	1.143	.010	.001	.287
• V25-Environment Risk	12.395	1	12.395	6.661	.055	.047	.011
FACTOR 3: *Government/Market Forces*							
• V14-Diseconomies of Scale	21.120	1	21.120	10.404	.084	.076	.002*
• V29-Globalization Risk	22.317	1	22.317	6.873	.057	.049	.010*
FACTOR 4: *Market Forces*							
• V16-Intellectual Capital Risk	2.904	1	2.904	1.195	.010	.002	.277
• V11-Time Intensity Risk	32.780	1	32.780	12.839	.101	.093	.001*
• V18-Customer Turnover Risk	3.265	1	3.265	1.372	.012	.003	.244
FACTOR 5: *Global/Economic Forces*							
• V8-Expertise Industry Risk	4.904	1	4.904	.020	.000	-.009	.887
• V15-Protection Devices Risk	.196	1	.196	.076	.001	-.008	.784
• V9-Business Entity Risk	12.805	1	12.805	4.445	.038	.029	.037
FACTOR 6: *Internal Forces*							
• V17-Velocity of Profit Risk	5.949	1	5.949	.019	.000	-.009	.892
• V28-Inflation Energy Risk	2.343	1	2.343	1.748	.015	.006	.189
FACTOR 7: *Business Enterpr. Intangibles*							
• V21-Competitive Risk	3.059	1	3.059	3.564	.030	.022	.062
• V20-Market Entry Risk	7.112	1	7.112	3.470	.030	.021	.065
FACTOR 8: *Profit and Inflation Forces*							
• V22-Business Climate Risk	3.059	1	3.059	3.564	.030	.022	.062
• V12-Labor Risk	7.112	1	7.112	3.470	.030	.021	.065

**Note: *p < 0.05, **p > 0.01*

TABLE 6. STUDY 2- MULTIVARIATE REGRESSION USING ETHNICITY AS A PREDICTOR VARIABLE

Factors and Variables (N = 136)	*SS*	*df*	Mean	*F*	R^2	ΔR^2	*p*
FACTOR 1: *Internal Enterprise Operations*							
• V26- Line of Credit Risk	.156	1	.156	.088	.001	-.007	.767
• V16-Owner Time Dependency Risk	6.088	1	6.088	.025	.000	-.007	.873
• V24-Customer Activity/Turnover Risk	4.573	1	4.573	.030	.007	-.001	.863
• V25-Customer Credit Risk*	1.522	1	1.522	.865	.004	-.004	.357
• V21-Expert (Team of Exp./Adv.) Rk	1.007	1	1.007	.460	.002	-.006	.499
• V20-Internet/Technology Use Risk	.370	1	.370	.223	.001	-.001	.637
FACTOR 2: *External Enterprise Operations*							
• V34-Security/CrimeVulner. Risk	2.706	1	2.706	.000	.000	-.008	.990
• V35-Terrorism Vulner. Risk	3.274	1	3.274	1.682	.013	.005	.197
• V32-Social Entrepreneurship Risk	3.394	1	3.394	2.729	.021	.013	.101
• V33-Environment/Climate Risk	1.732	1	1.732	.008	.000	-.000	.927
FACTOR 3: *Overhead Cost and Operations*							
• V18-Overhead Costs Risk	.477	1	.477	.311	.002	-.005	.578
• V17-Labor/Intensity Risk	.183	1	.183	.106	.001	-.007	.745
• V19-Equipment/Systems Invest. Risk	7.819	1	7.819	.038	.000	-.007	.846
FACTOR 4: *Government and Market*							
• V31-Government Regulation Risk	2.001	1	2.001	1.004	.008	.000	.318
• V28-Barriers to Market Entry/Exit Rk	.156	1	.156	.077	.001	-.007	.782
FACTOR 5: *Profit and Energy Factor*							
• V23-Velocity of Profit Risk	2.815	1	2.815	2.089	.016	.008	.151
• V36-Energy/Dependency Risk	6.584	1	6.584	3.341	.025	.018	.070
FACTOR 6: *Globalization and Market*							
• V37-Globalization Risk	5.228	1	5.228	3.532	.026	.019	.062
• V29-Competition Intensity Risk	9.740	1	9.740	.008	.000	-.008	.929
• V27-Market Potential Risk	1.909	1	1.909	1.381	.011	.003	.242
FACTOR 7: *Economic Forces*							
• V30-Economic Risk*	2.290	1	2.290	1.845	.014	.006	.177
• V22 Intellectual Property Risk	1.215	1	1.215	.440	.003	-.004	.508

**Note:* $*p < 0.05$, $**p > 0.01$

Examining Customer Activity in Business Enterprises: Comparing Customer Turnover

Table 7 displays a cross-tabulation of the customer turnover variable with the BBEs and WBEs for Study 1. This metric was used to make estimation on the sales generated for the business enterprises. The profitability of the business enterprises was estimated due the lack of financial data that was available to the researcher. The hypotheses states there are differences between BBEs and WBEs in terms of customer turnover. The results indicate that BBEs (20.4%) had 20 or more customers per day; comparatively WBEs (16.1%) had a similar result. This was also similar with 5 or less customers or less. Thus, in terms of the customer turnover metric, the results of study indicate there were no significant differences between BBEs and WBEs.

TABLE 7. STUDY 1 – COMPARING CUSTOMER TURNOVER METRIC BETWEEN BBEs AND WBEs

	Group 1		Group 2				
	BBEs (n = 54)		WBEs (n = 62)		(N = 116)		
Customer Turnover	n	%	n	%	F	t	p
20 or more customers per day*	11	20.4	10	16.1	.787	1.172	.377
15 customers or less per day*	3	5.6	1	1.6			
Neutral or unknown	11	20.4	11	17.7			
10 or less customers per day	5	9.3	6	9.7			
5 or less customers per day*	24	44.4	34	54.8			
Total	54	100.0	62	100.0			

Results of ERO Index Level Scores for BBEs and WBEs

Table 8 illustrates the results of ERO index scores between the two groups for Study 1. Based on the results, BBEs did display significantly lower ERO index level (M = 54.57, SD = 30.345) compared to WBEs (M = 61.04, SD = 31.422). The results indicate that BBEs have a lower total ERO index level compared to WBEs. Overall, BBEs are slightly less risky than WBEs (or BBEs are slightly higher in risk factor coefficients). However, it is noteworthy that the means in both conditions were quite low given that the scale ranged from 0 to 5. In addition, Table 9 illustrates the results of ERO index scores between the two groups for Study 2. Based on the results, there ERO index levels for the BBEs (M = 66.36, SD = 28.421) compared to WBEs (M = 66.35, SD = 27.609) were even. The results indicate there were not any significant differences between both groups in terms of ERO index levels.

TABLE 8. STUDY 1 – RESULTS OF ERO INDEX LEVEL SCORES FOR ETHNIC GROUPS

Study 1	Group 1		Group 2	
Factor Scores (N = 116)	BBEs (n = 54)		WBEs (n = 62)	
	M	SD	M	SD
Factor 1: Industry/Economic Forces	10.86	5.691	11.22	5.812
Factor 2: Terrorism/Security Dynamics	5.69	3.801	7.5	4.198
Factor 3: Government/Market Forces	4.56	2.905	6.29	3.478
Factor 4: Market Forces	9.43	4.73	11.14	4.666
Factor 5: Global/Economic Forces	8.71	4.895	8.16	4.829
Factor 6: Internal Forces	4.52	2.919	4.76	2.969
Factor 7: Business Enterprise Intangibles	6.17	3.151	6.52	3.027
Factor 8: Profit and Inflation Forces	4.63	2.253	5.45	2.443
*ERO Index Levels (Total)	54.57	30.345	61.04	31.422

TABLE 9. STUDY 2 – RESULTS OF ERO INDEX LEVEL SCORES FOR ETHNIC GROUPS

Study 2	Group 1		Group 2	
Factor Scores (N = 136)	BBBs (n = 58)		WBEs (n =74)	
	M	*SD*	*M*	*SD*
Factor 1: Internal Enterprise Operations	14.39	6.454	15	7.295
Factor 2: External Enterprise Operations	9.36	5.645	9.98	5.074
Factor 3: Overhead Costs and Operations	9.4	4.071	9.55	3.936
Factor 4: Government and Market	6.62	2.972	6.3	2.751
Factor 5: Profit and Energy Factors	7.88	2.574	7.1	2.557
Factor 6: Globalization and Market	11.94	3.851	12.12	3.266
Factor 7: Economic Forces	6.77	2.854	6.3	2.73
*ERO Index Levels (Total)	66.36	28.421	66.35	27.609

DISCUSSION

A comparative analysis of small business enterprises (SME) was conducted to get insights into understanding economic differences between black-owned business enterprises (BBE) and white-owned business enterprises (WBE). This study examines the entrepreneurial and economic behavioral patterns between the two groups. The findings reported in this research suggest that ethnicity and race does not play a major factor in entrepreneurial risk and success. However, the degree of its role in the success or risk factors with black-owned business enterprises is questionable. The majority of the prior research on BBEs has provided some compelling evidence that ethnicity has been a pivotal issue as a basis for their success. However, the majority of the prior research on BBEs has been somewhat negative, dismal and a self-fulfilling prophecy on the likelihood of their success and survival.

According to much of the prior research, it is apparent there are some consistent differences between BBEs and WBEs. The central focus on these differences were along the lines of socio economic issues and most apparent, the issue of race. However, the results of our research reveal that BBEs were not much different from WBEs in terms of firm characteristics. There were minor but not significant differences between the two groups. Furthermore, we also found that BBEs were just as competitive as WBEs. Lastly, we observed the hypothesized relationships between ethnicity and entrepreneurial risk patterns were not significant. We examined these risk factors and patterns in both studies and used ethnicity as construct for the basis of the research. Based on the results of both studies, there were consistent results that indicated that BBEs were not that different compared to WBEs in terms of firm risk factors and market behavior.

A series of hypotheses were tested comparing market behavior and entrepreneurial risk patterns of BBEs and WBEs. The ***first hypothesis*** suggests there are differences between black-owned business enterprises (BBE) and white-owned business enterprises (WBE) in terms of individual demographics. Based on the results of our study, we discovered there were some differences between BBEs and WBEs. In Study 1, the results of the analyses revealed that: (a) black business owners were least likely to be married compared to white business owners; (b) BBEs were twice as likely to be divorced compared to WBEs; and (c) BBEs were equally likely to be as college educated as WBEs. However for Study 2, the results revealed: (a) the statistics on the marital status rates and divorce rates on both groups were consistent with the results of Study 1; and (b) for education, BBEs were least likely to have a bachelors degree compared to WBEs; however, BBEs were equally likely to have a graduate and post graduate degree compared to WBEs. Support for our first hypothesis is in line with Christopher (1989) similarly concluded the probability of minority business survival is increased with the number of years of formal education to some threshold. Based on the results of the study, the hypotheses can be marginally supported.

The ***second hypothesis***, suggests there were differences BBEs between WBEs in terms of firm characteristics. Study 1, the results revealed that: (a) in terms of time length of business ownership, BBEs were equally as likely to own a business one to three years; also BBEs are more likely to own a business four years or more compared to WBEs; lastly, WBEs were more likely to own a business less than one year; (b) in terms of compensation from the business, BBEs were three times likely to earn $10K to $25K compared to WBEs; WBEs were three times more likely to earn $100K compared to BBEs; (c) for industry types, the differences were minimal; WBEs were more likely to own a consumer competitive-type business compared to BBEs. For Study 2, the time length of business ownership results were similar to the Study 1. There were significant differences concerning business entity types. For example, WBEs were more likely to own an S or C corporation, limited-liability Corporation or partnership (LLC/LLP) compared to BBEs. In terms of industry types, BBEs were least likely to be in the industries of communications, construction, manufacturing, technology and transportation. For employee size, WBEs were twice as likely to have 1 to 100 employees in the firm compared to BBEs. In terms of capital investment, WBEs were more likely to invest 0 to $50K compared to BBEs; WBEs invested $50K to $100K compared to BBEs. For franchise ownership, BBEs were equally likely to own a franchise compared to WBEs. Based on the results of the study, the second hypothesis is supported.

The ***third hypothesis*** suggests there were differences BBEs between WBEs in terms of firm characteristics. Multivariate regression analyses were conducted on both studies to determine the relationship between ethnicity and entrepreneurial risk factors. The objective of the multivariate analyses is to identify which entrepreneurial risk factors are significant and then compare them across the two ethnic groups. The results of the Study 1 revealed: (a) the independent sample t-test revealed there were minimal differences between BBEs and WBEs in terms of the eight entrepreneurial risk factors between the two groups; (b) the multivariate regression analyses revealed that were no significant differences between the two groups in terms of the eight entrepreneurial risk factors; and (c) only three factor variables indicated any significant differences between the two groups; those variables were terrorism risk, diseconomies of scale, globalization and time intensity risk. For Study 2, the results of the study were consistent with Study 1. As of a result, the third hypothesis could not be supported.

The ***fourth hypothesis*** suggests there were no differences BBEs between WBEs in terms of customer turnover analytics. The results of Study 1 revealed there were no significant differences between the two groups in terms of customer turnover analytics. For example, BBEs were equally like to have 20 customers or more per day compared to WBEs. There were no significant differences between the two groups. Therefore, the hypothesis could not be supported.

The ***fifth hypothesis*** suggests there were differences between the two groups in terms of ERO index levels that measure entrepreneurial risk. The results of Study 1 and Study 2 revealed there were no significant differences between the two groups in terms of ERO index levels. For Study 1, eight risk factors were examined for the study. The results revealed BBEs had a slightly lower ERO index level (M = 54.57, SD = 30.345) compared to WBEs (M = 61.04, SD = 31.422). For Study 2, seven risk factors were examined. The results revealed BBEs had an equal ERO index level (M = 66.36, SD = 28.421) compared to WBEs (M = 66.35, SD = 27.609). There were no significant differences between the two groups. Therefore, the hypothesis could not be supported. Table 10 displays of summary of the hypotheses tests.

TABLE 10. SUMMARY OF HYPOTHESES TEST

Hypotheses	Measure Used	Supported?
Study 1		
H1: Differences in individual demographics.	t-test/crosstabs	*Yes
H2: Differences in firm demographics.	t-test/crosstabs	Yes
H3: Differences in market behavior/risk factors.	regression analysis	No
H4: Differences in customer turnover analytics.	t-test/crosstabs	No
H5: Differences in ERO Index Levels.	t-test/crosstabs	No
Study 2		
H1: Differences in individual demographics.	t-test/crosstabs	*Yes
H2: Differences in firm demographics.	t-test/crosstabs	Yes
H3: Differences in market behavior/risk factors.	regression analysis	No
H4: Differences in customer turnover analytics.	*None	*N/A
H5: Differences in ERO Index Levels.	t-test/crosstabs	No

*Note: Hypothesis marginally supported; not applicable in study.

CONCLUSIONS AND CRITICAL OBSERVATIONS

The study focused on a comparative study of black-owned business enterprises (BBE) and white-owned business enterprises (WBE). This study examined economic behavior and market behavior between the two groups. This research is based on two studies conducted on both groups that examined seven to eight entrepreneurial risk factors. This study used multivariate regression analyses of the risk factors to conduct comparative analyses of the two groups. The study extends the previous research on BBEs and the influence on entrepreneurial risk factors on firms' vulnerability to business failure.

The study tested five hypotheses related to the individual demographics, firm characteristics, and risk factors linked to the literature. The results of the study reveal there were some important findings. First, there were consistent differences between BBEs and WBEs in terms of individual demographics, such as marital status, education, and divorce rates. Second, there were consistent differences between BBEs and WBEs in terms of firm characteristics such as industry type, franchise ownership, capital investment, employee size and length of business ownership. Most of these firm differences favored BBEs compared to WBEs. Third, most interestingly there were minimal differences between BBEs and WBEs in terms of the seven and eight entrepreneurial risk factors. The data did not reveal any significant differences between the two groups. Fourth, there were minimal differences between BBEs and WBEs in terms of the seven and eight entrepreneurial risk factors. The customer turnover rates

within the firms for both groups were similar. BBEs had equal customer turnover analytics compared to WBEs. Last, there were significant differences between the two groups in terms of ERO index levels that measure entrepreneurial risk.

One clear implication is that BBEs are not that different from WBEs. A second observation is that BBEs were not as bad off as some of the prior research suggests. BBEs are equally likely to have success and profitability compared to WBEs despite the influence of ethnicity and race as an impediment. The results of our study refine and reframe the common perception that BBEs are less profitable and not as successful. Another observation is that BBEs are just as competitive and respond to the same number of ER risk factors compared to WBEs. Therefore, BBEs face similar market forces and ethnicity does not play an integral role as much as the prior research infers. Furthermore, a major flaw with some of the prior research has been the overreliance of government and secondary data. As researchers, maybe we can help solve some of their problems.

In conclusion, the results of our study make a contribution to the field of study. First, this study opens a new inquiry on comparative research on BBEs and SMEs by examining firm dynamics. Second, this study extends the prior research on BBEs by using entrepreneurial risk factors as a basis for examining economic risk patterns and economic behavior. Based on the results of our research, this study will provide a vehicle for examining SMEs and the role of ethnicity and race in the context of economic behavior. This study is one of the few studies in the literature that compares the economic behavior and risk patterns along ethnic and racial lines. This study also makes a comparative analysis along economic and market forces. Another major contribution of this study is that it challenges the conventional wisdom on the success and survival of BBEs. This study provides strong empirical support to challenge some of the prior research on BBEs and their success and economic behavior.

LIMITATIONS

This study had some limitations. First, all the survey data collected for the study was self-reported. As a limitation, this could be subject to some bias. The risk in using self-reported data is always the possibility of respondent bias. There could be challenges because of the data being biased. However, we minimized the issue of bias by the survey designs and questionnaire construction.

Second, both ERS and ERAS surveys were limited because they could not get financial statement data from the respondents. This presented a limitation because there was no way to acquire financial statement data. Thus, the results of the study could only provide general information on the financial activity of the SMEs in the study.

However, we did provide information on capital investment size and customer turnover analytics. Therefore, we could approximate some of limited financial information on both groups.

Last, geographic constraints were a limitation. Because this study used primary data as opposed to secondary data, there were time constraints and geographic limitations. However, the results of this study may support generalizations to populations beyond the scope of this sample or similar demographic characteristic. Despite these limitations, this study represents one of the most comprehensive comparative analyses on black-owned business enterprises (BBE) and white-owned business enterprises (WBE). This study makes an important contribution and thus highlights SMEs' differences and similarities along the ethnic and economic lines.

FUTURE RESEARCH

There are a wealth of opportunities for future research on BBEs in terms of economic pattern analysis, market behavior, and entrepreneurial risk. First, future research should continue to refine the economic factors to examine more firm dynamics on BBEs. For example, one possible inquiry of exploration would be to explain how personal demographics such as marital and divorce rates affect economic behavior and entrepreneurial success for comparing BBEs to WBEs. Furthermore, future research could explore the various ways in which market behavior, economic dynamics, and ethnicity influence business success and survival.

Second, future research could analyze economic patterns in detail and beyond governmental data. For example, future research can be extensive in examining economic patterns such as market entry barriers, market saturation, and competition more extensively on BBEs and WBEs. To exploit this future research opportunity, perhaps examining economic patterns in the capacity of a longitudinal study would be an optimal approach.

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OPEN ACCESS ARTICLE

MODEL FOR GROSS OPERATING SURPLUS AND MIXED INCOME AT CURRENT PRICES IN 25 EU COUNTRIES

Joel C. Nwaubani

University of Macedonia Thessaloniki, Greece

joelino@uom.gr

Abstract

It is remarkable that high profits do not make an economy more resilient. Gross operating surplus is equal to profits, interest and rents before tax plus income of the self-employed. Ireland had the highest rate of the EU, while Germany had one of the lowest. This metric is influenced by the structure of an economy. In this study, we consider and estimate the most accurate association model for the gross operating surplus and mixed income at current prices in 25 EU countries for the period of 1998-2008 (shortly before the rise of economic crises in mid-July). The data used for the study were obtained from the Eurostat. The programme of the Categorical Data Analysis System (CDAS) is used in order to ascertain the results. The Analysis of Association (ANOAS) table is given in order to find the percentage of the data, which is covered by each model. We analyze and estimate the association model with the best fit. Finally, it is concluded that all six association models show an acceptable fit especially the third model (row effects), which gives the best fit by covering about 59% of the data.

Key words

Association models; Log-linear and log-nonlinear models; Gross operating surplus; Mixed income; Current prices; European Union.

INTRODUCTION

In the national accounts, gross operating surplus (GOS) is the portion of income derived from production by incorporated enterprises that is earned by the capital factor, i.e. before account has been taken of the interest, rents or charges paid or received for the use of assets. It is calculated as a balancing item in the generation of income account of the national accounts. It differs from profits shown in company accounts for several reasons. Only a subset of total costs is subtracted from gross output to calculate the GOS. Essentially GOS is gross output *less* the cost of

intermediate goods and services (to give gross value added), and *less* compensation of employees. It is *gross* because it makes no allowance for depreciation of capital according to Fairbanks (2000).

A similar concept for unincorporated enterprises (e.g. small family businesses like farms and retail shops or self-employed taxi drivers, lawyers and health professionals) is gross mixed income. Since in most such cases it is difficult to distinguish between income from labor and income from capital, the balancing item in the generation of income account is "mixed" by including both, the remuneration of the capital and labor (of the family members and self-employed) used in production. In other words, mixed income is the remuneration for the work carried out by the owner (or by members of his family) of an unincorporated enterprise. This is referred to as 'mixed income' since it cannot be distinguished from the entrepreneurial profit of the owner. Gross operating surplus and gross mixed income are used to calculate GDP using the income method (Eurostat /JP, 2008).

TABLE 1. GROSS OPERATING SURPLUS AND MIXED INCOME AT CURRENT PRICES IN EU 25 (% OF GDP)

Geo / Time	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Belgium	37.8	37.3	37.2	37.4	36.4	37	36.1	35.9	36.4	37.3	37.3
Czech Republic	47.6	46.5	47.2	49.8	49.6	49.5	49.5	48.2	47.7	47	47.3
Denmark	34.5	33.9	33.6	31.4	31.3	33.2	31.9	31.4	31.2	31.4	32.3
Germany	36.4	36.7	37.4	37.5	36.8	36.1	36.5	37	37.1	38	38.9
Estonia	33	36.8	37.2	40.1	38.6	43.1	43.9	44.1	42.5	42.4	42.4
Ireland	43.8	44.6	45.9	48.4	48.2	49	49.7	50.8	50.1	48	47.5
Greece	57.1	56.8	55.4	54.8	52.9	54	54.2	54.4	55.4	54.7	54.8
Spain	42.6	42.3	41.3	41.1	40.6	40.5	41.2	41.6	41.6	41.8	42.1
France	34.5	34	34.2	34.6	33.9	34.4	34.6	34.3	34.4	34.4	34
Italy	48.2	48.3	47.4	46.4	46.5	47.2	47.4	47.1	47	47.1	46
Cyprus	46	46	45.7	46.9	47.3	47	46.7	44.3	40.2	39.7	39.1
Latvia	43.1	41.7	43	42.3	44	47.3	49.2	51	49.1	49.5	46.7
Lithuania	50	50.4	48	45.4	44.2	48.7	50.5	49.8	49.9	49.8	50.2
Luxembourg-GrandDuché	42.8	43.1	41.2	41	42.5	41.4	38.9	39.4	40.8	39.3	40.4
Hungary	37.3	39.1	40.8	41	41.9	42.4	41.5	41.5	40.1	39.8	40
Malta	45.4	44.8	44.8	45.4	44.3	45	41.7	42.3	41.9	39.9	40.8
Netherlands	38.8	39	39.4	38.7	38	38.6	38	37.8	37.5	37.7	38.5
Austria	34.9	35.7	35.6	36.1	36	37.2	37.8	37.9	38.5	39.5	40
Poland	47	45.6	45.2	45.6	45.5	47.6	46.9	48	48.9	51.9	51.1
Portugal	37.8	37.6	37.4	37.2	38.4	37.6	38	37.4	37.2	37.1	37.5
Slovenia	29.4	30.3	32.5	32.9	33.8	32.3	32	32.2	33.3	33.6	33.4
Slovakia	47.7	47.9	48	46.2	48.1	48.5	50.2	49.3	50.2	52	52
Finland	39.5	38.4	39.1	39.8	39.8	41	41	40.7	39.4	39.8	38.6
Sweden	35.5	32.5	32.2	31	30.7	30	27.9	27.8	27.9	28.8	29.1
United Kingdom	33.4	34.5	34.1	32.9	31.9	30.7	30.3	31.1	31.7	32.2	31.6

Source: Eurostat/JP: Economic and Social Research Institute

METHODOLOGY

Association models

We consider six of the most commonly used Association Model of the Categorical Data Analysis. These are:

1. The Null Association or Independence Model which holds that there is no relationship between the variables and it is also symbolized with (O). The log-linear model is: Log $(F_{ij}) = \lambda+\lambda_{A(i)}+\lambda_{B(j)}$, where log denotes to the natural logarithm, F_{ij} are the expected frequencies under the Independence Model, $\lambda_{A(i)}$ are the rows main effects and $\lambda_{B(j)}$ are the columns main effects (Goodman, 1979a).

2. The Uniform Association Model, which is symbolized with (U) in log-linear form is $\log(F_{ij})=\lambda+\lambda_{A(i)}+ \lambda_{B(j)}+\phi\chi_i y_j$, where ϕ ιs a single parameter for interaction and χ_i ,y_j are the scores for the row and column variables (i =1,…,I, j =1,…,J) respectively.

3. The Row-Effects Association Model (R) where linear interaction holds: log $(F_{ij}) =\lambda+ \lambda_{A(i)}+ \lambda_{B(j)}+ \phi\mu_I y_j$, where y_j are fixed scores for the column variable (j = 1,…, J) and μ_I are unknown scores for the row variable (I=1,…,I).

4. The Column-Effects Association Model (C) is the same as the Row-Effects Association Model with a change in subscripts: $\text{Log}(F_{ij}) = \lambda+\lambda_{A(i)}+\lambda_{B(j)}+\phi\nu_j x_I$, where x_I are fixed scores for the row variable (i =1,…,I) and ν_j are unknown scores for the column variable (j =1,…,J).

5. The model whereby we have both row and column effects in additive form is called the Row + Column Effects Association Model (R+C) or Model 1, (Goodman, 1981a). The log-frequency version of the above model is: $\log(F_{ij}) = \lambda+\lambda_{A(i)}+ \lambda_{B(j)}+ \sum_{\kappa=1}^{I-1}\beta_\kappa y_j Z_{A(\kappa)} + \sum_{\kappa=1}^{J-1}\gamma_\kappa \chi_i Z_{B(\kappa)}$, where χ_i ,y_j are the scores as defined earlier, and $Z_{A(i)}$, $Z_{B(j)}$ denotes to indicators of variable indices (or dummy variables) for the levels of row and column effects respectively.

6. The model, instead of additive row and column effects on the local odds ratios has multiplicative effects called the Row Column Effects Association Model (RC) or Model II, (Goodman, 1981b). The log-multiplicative model is: log $(F_{ij}) = \lambda+\lambda_{A(i)}+\lambda_{B(j)}+\phi\mu_I\nu_j$, where the row score parameters μ_I and column score parameters ν_j are not known, but those estimated from the data.

We aim at finding the model (out of the six) that best fit from the other models which we are examining, i.e., the Gross operating surplus and mixed income at current prices in 25 EU countries for the period of 1998-2008. For this reason, we are going to examine first the Index of Dissimilarity (L2), which shows that, the lesser the number, the more our model will give the best fit to match the Gross operating surplus and

mixed income at current prices in each country of the 25 EU countries compared with other models under consideration.

TABLE 2. MODELS ANALYSIS

Models	Likelihood X^2	(Likelihood) G^2	Degrees of Freedom	Index of Dissimilarity	Final Iteration	Maximum Deviation
O	18.90549	19.00388	240	0.01529	3	0.00000000
U	18.84812	18.94400	239	0.01533	3	0.00002467
R	7.86083	7.87497	216	0.01020	4	0.00001106
C	18.46532	18.56803	230	0.01541	3	0.00010623
R+C	7.49085	7.50546	207	0.01006	4	0.00001253
RC	7.03765	7.04663	207	0.00958	420	0.00099770

MODELS ANALYSIS

We analyze the six association models used in the data described in Table 1, with the help of the statistics package of the Categorical Data Analysis in accordance with Scott and Clogg (1990). We used the Pearson chi-squared (X^2) statistic, the likelihood-ratio chi-square (G^2) statistic, and the index of dissimilarity $D = \sum_{ij} \left| f_{ij}/n - F_{ij}/n \right| / 2$ (where f_{ij} the observed frequencies and F_{ij} the expected frequencies (under the model) and we have the following results below:

TABLE 3. INDEX OF DISSIMILARITY

1. Null Association-Independence Model (O)	0.01529
2. Uniform Association Model (U)	0.01533
3. Row-Effects Association Model (R)	0.01020
4. Column-Effects Association Model (C)	0.01541
5. Row+Columns Effects Association Model (R+C)	0.01006
6. Row Column Effects Association Model (RC)	0.00958

At first sight it seems that the row-column model (RC) adjusted better to the gross operating surplus and mixed income in the years under study, as it is the one that has the lowest index of dissimilarity with D = 0.00958.

Diewert, (1995 and 1996) further stated that we can prove this in another way through the calculation of Indicator BIC (Bayes Information Criterion). The formula for this calculation is:

$BIC = G^2 – (D.F.) \text{ Log}(n)$

Symbols:
n = the size of the sample
d.f. = degrees of freedom of the models
G^2 = the likelihood-ratio chi-square statistics

When comparing a number of models, the model with the smallest value of BIC is regarded as the best. So, we choose the models whereby the INDEX OF DISSIMILARITY are similar and the lowest out of the six models. However, since we have models with similar lower ratio, to justify which model give the best fit to match the both Countries and Years, the calculation of the Index BIC (Bayes information criterion) gives the solution. More precisely, the 3rd, 5th and 6th model. Therefore, we see:

For n = 11321.3000 and

Log (n) = Log (11321.3000) = 9.3344

In continuation, we calculate the index for:

3rd Model: BIC = G^2 – (D.F.) Log (n) = 7.87497 – 216*9.3 = -2008.35543

5th Model: BIC = G^2 – (D.F) Log (n) = 7.50546 – 207*9.3 = -1924.71534

6th Model: BIC = G^2 – (D.F.) Log (n) = 7.04663 – 207*9.3 = -1925.17447

From these calculations, we could see that the best model is the 3rd, in other words the row effects model (R).

ANALYSIS OF THE ASSOCIATION MODEL

Afterwards, we check the models to see whether any of them is acceptable. Checking is being done through the likelihood-ratio chi-square statistic G^2 and with the use of X^2 distribution. In the case of X^2 distribution Statgraph program will be of good help.

Firstly, the likelihood-ratio chi-square statistic for the Independence model (O) is G^2 = 19.00388 with 240 degrees of freedom (d.f.). (The 95th percentile of the reference chi-square distribution is 277.528). So, the model of independence (O) is accepted because it has a good fit since the X^2 distribution is much bigger than the likelihood-ratio chi-square statistic G^2.

In continuation the Uniform association model is G^2 = 18.94400 with 239 degrees of freedom (d.f.). The 95th percentile of the reference chi-square distribution is 276.449. As it could be noticed this statistics is accepted and has a satisfactory fit (adaptation) since the X^2 distribution is bigger than the likelihood-ratio chi-square statistic G^2.

The likelihood-ratio chi-square statistic G^2 for the R model is reduced dramatically and is = 7.87497 with 216 degrees of freedom (d.f.). The 95th percentile of the reference chi-square distribution is 251.584. In addition, we observe that the model has a very good fit because the X^2 distribution is much bigger than the likelihood-ratio chi-square statistic G^2.

The C model (years) has $G^2 = 18.56803$ with 230 degrees of freedom (d.f.). The 95th percentile of the reference chi-square distribution is 266.728. We therefore conclude also that this model show even a better fit since the X^2 distribution is very much bigger than the likelihood-ratio chi-square statistic G^2.

Moreover, the statistics of the model R+C, that takes into account the effects for both the gross operating surplus and the years in additive form is $G^2 = 7.50546$ with 207 degrees of freedom (d.f.). The 95th percentile of the chi-square distribution is 241.982. Similarly, this model has a better fit, because the X^2 distribution is very much bigger than the likelihood-ratio chi-square statistic G^2.

Finally the model of row-column effects in multiplicative form (RC), has $G^2 = 7.04663$ with 207 degrees of freedom (d.f.). The 95th percentile of the reference chi-square distribution is 241.982. Again the Statistics has a better fit just as the previous model because they have the same d.f, which shows to have an acceptable fit since the X^2 distribution is very much bigger than the likelihood-ratio chi-square statistic G^2.

We observe also that the row model (R) covers {(19.00388 – 7.87497)/19.00388} of = 59% of the total data. This means that roughly 60% of the total data were determined by each country's gross operating surplus and mixed income at current prices while 40% on unidentified factors.

However, we have to realise and in which degree of influence it has on each model. In order to verify this we will have to construct the table of Analysis of association (ANOAS).

ANALYSIS OF ASSOCIATION TABLE (ANOAS)

The ANOAS Table 4, was given by Goodman (1979b). In this table, the chi-squared are the partitioned as sums of square in a two-factor analysis of variance using the likelihood. The ANOAS table partitions the effects on association show the percent of the likelihood-ratio chi-square statistic $G^2(O)$ for basic (null) model of independence that measures the total deviation of the variables. In other words, we can find the percentage of baseline chi-squared X^2 distribution, which influences each of our model's phenomenon under study.

TABLE 4. THE ANOAS TABLE

Effects	Model used	G^2	D.F	Percentage
1. General	O-U	0.05988	1	0.31%
2. Rows	U-R	11.06603	23	58.24%
3. Columns	R-RC	0.82834	9	4.35%
4. Residual	RC	7.04663	207	37.08%
Total	O	19.00388	240	≈ 100.00%

The analysis of association table has the following differences of our models: O-U is the total effects model, U-R are the column effects model, R-RC are the column effects model that gives the effect of columns and RC are the residuals of the models.

As shown from the ANOAS table we created, the uniform effects are weak because the U model accounts for 31% of the baseline chi-squared value. The row effects are strong because the R model accounts for 58.24% of the baseline chi-squared X^2 distribution value. Moreover, the column effects are very weak because the C model accounts for only 4.35% of the baseline chi-squared value. Finally, the residual model RC accounts for 37.08%.

TABLE 5. MODEL ESTIMATION

ROW (COUNTRIES)	COLUMN (YEARS)	DATA OBSERVED f_{ij}	Expected freq. model (0) f_{ij}	Expected frequency of model (R) Fij
1	1	37.8000	36.7349	37.2923
2	1	47.6000	47.9336	48.2315
3	1	34.5000	32.2120	33.6437
4	1	36.4000	36.9430	36.4253
5	1	33.0000	40.1723	36.0305
6	2	44.6000	47.5669	45.9284
7	2	56.8000	54.6657	55.6073
8	1	42.6000	41.3121	41.6090
9	1	34.5000	34.1297	34.3088
10	1	48.2000	46.9114	47.8172
11	1	46.0000	44.2948	48.2737
12	1	43.1000	45.8531	42.0874
13	1	50.0000	48.5668	47.9302
14	1	42.8000	40.7784	42.6030
15	1	37.3000	40.2899	39.8201
16	1	45.4000	43.0851	46.0882
17	1	38.8000	38.1732	39.0131
18	1	34.9000	37.0153	34.7544
19	1	47.0000	47.3366	44.7555
20	1	37.8000	37.3772	37.7503
21	1	29.4000	32.1758	30.8810
22	1	47.7000	48.8563	46.7308
23	1	39.5000	39.5391	39.5088
24	1	35.5000	30.1586	33.5447
25	1	33.4000	32.0582	33.6293

As seen from Table 5, the values of the row effects model (R) show how they fit better in the data.

SUMMARY

All the six association models show accepted fit. The values of the row effects model (R) gives the best fit as shown in the data. The estimated effects (percentage of GDP) for the Gross operating surplus and mixed income at current prices in 25 EU countries for the period of 1998-2008 are:

Belgium: $\hat{\tau}_1$ = Log (0.99679) = -0.0032 Lithuania: $\hat{\tau}_{13}$ = Log (1.00243) = 0.0024

Chech Republic: $\hat{\tau}_2$ =Log(0.99856)=-0.0014 Luxemburg: $\hat{\tau}_{14}$ =Log(0.99103)= -0.0090

Denmark: $\hat{\tau}_3$ =Log(0.99109) = -0.0089 Hungary: $\hat{\tau}_{15}$ = Log ( ) = (1.00214) = 0.0021

Germany: $\hat{\tau}_4$ = Log (1.00261) = 0.0026 Malta: $\hat{\tau}_{16}$ = Log (0.98626) = -0.0138

Estonia: $\hat{\tau}_5$ = Log (1.02129)= 0.0210 Netherlands: $\hat{\tau}_{17}$ = log (0.99545) = -0.0045

Ireland: $\hat{\tau}_6$ = Log (1.00856) = 0.0085 Austria: $\hat{\tau}_{18}$ = Log (1.01230) = 0.0122

Greece: $\hat{\tau}_7$ = Log (0.99560) = -0.0044 Poland: $\hat{\tau}_{19}$ = Log (1.01093) = 0.0108

Spain: $\hat{\tau}_8$ = Log (0.99837) = -0.0016 Portugal: $\hat{\tau}_{20}$ = Log (0.99782) = -0.0021

France: $\hat{\tau}_9$ = Log (0.99876)= -0.0012 Slovenia: $\hat{\tau}_{21}$ = Log (1.00797) = 0.0079

Italy: $\hat{\tau}_{10}$ = Log (0.99598)= -0.0040 Slovakia: $\hat{\tau}_{22}$ = Log (1.00864) = 0.0086

Cyprus: $\hat{\tau}_{11}$ = Log (0.98216)= - 0.0180 Finland: $\hat{\tau}_{23}$ = Log (0.99996) = -0.0004

Latvia: $\hat{\tau}_{12}$ = Log (1.01676) = 0.0166 Sweden: $\hat{\tau}_{24}$ = Log (0.97833) = -0.0219

United Kingdom: $\hat{\tau}_{25}$ = Log (0.99021) = -0.0098

We now compare some of the 25 EU countries with each other in relation to the percentage of GDP for the gross operating surplus and mixed income at current prices. According to Haritou & Nwaubani (2009), the difference to the percentage of GDP for the gross operating surplus and mixed income at current prices between Germany and the United Kingdom, we have: $\hat{\tau}_4 - \hat{\tau}_{25}$ = 0.01 and exp (0.01) = 1.01, it means that Germany had 1% of GDP greater than the United Kingdom.

In the case of Mediterranean countries like Greece and Spain, we have: $\hat{\tau}_7 - \hat{\tau}_8$ = 0.00, and exp(0.00) = 1, we find out that Greece had 1% of GDP greater than Spain.

The difference to the percentage of GDP for the gross operating surplus and mixed income at current prices between Italy and Greece, is: $\hat{\tau}_{10} - \hat{\tau}_{7} = 0.00$, exp(0.00) = 1, thus, Italy had 1 % of GDP higher than Greece.

Comparing Greece and Ireland, we have: $\hat{\tau}_{7} - \hat{\tau}_{6} = -0.01$, and exp(-0.01) = 0.99, this means that Greece had 0.99% of GDP slightly lesser than that of Ireland in relation to the gross operating surplus and mixed income at current prices.

Even among the advanced countries of Europe, the difference is not much in number. Specifically between Germany and France, we have: $\hat{\tau}_{4} - \hat{\tau}_{9} = 0.00$, and exp(0.00) = 1, we find out that Germany had 1% of GDP higher than France as regards to the gross operating surplus and mixed income at current prices.

In the case of Central European countries like, Czech Republic and Slovakia, we have: $\hat{\tau}_{2} - \hat{\tau}_{22} = -0.01$, and exp(-0.01) = 0.99, it means that Czech Republic had 0.99% of GDP slightly lower than that of Slovakia in relation to the gross operating surplus and mixed income at current prices.

Finally, comparing the Scandinavian countries like Finland and Sweden, we see that: $\hat{\tau}_{23} - \hat{\tau}_{24} = 0.02$, exp(0.02) = 1.02. In otherwords, Finland had almost 1% of GDP than Sweden as regards to the gross operating surplus and mixed income at current prices.

Finally, in order to realise the degree of association (correlation), which exists between the countries and years (row and column models), we use θ (Theta) of the second model, the (uniform association U) to calculate the indicator of innate association – i.e. ϕ (phi).

THETA (FOR THE MODEL II) = 0.99

We observe that the price of θ (Theta) is found within the frequency of 1%, which means that the variables are independable among themselves.

The odds ratio is θ (Theta) = 0.99. The parameter of interaction is ϕ (phi) = ϕLogθ

Log (0.99990) = -0.0001. The ϕ (phi) ½ = √0.0001= 0.01, thus the ϕ (phi) ½ of -√0.0001= -0.01

CONCLUSION

Generally, we find out that the row effects model (R) gives the best fit among all. However, to be more precise, the percentage of GDP for the gross operating surplus and mixed income were influenced by several factors. This may be due to:

- Standard of living of each country;
- Differences in the distribution of income;
- Differences in hours worked;
- Hidden economies;
- Educational level of workers in each country;
- Difficulty of assessing true values;
- Level of the economy of each country (e.g. a country that depends on loan for survival); and
- Other factors that is difficult to be identified or determined.

Moreover, we could easily see from the comparisons that the 25 EU countries' percentage of GDP for the Gross operating surplus and mixed income at current prices were slightly the same. Based on the results of the research, we can see that the relationship between the 25 EU countries and the years are slightly negative as regards to the gross operating surplus and mixed income at current prices. In other words, there is no change in the association. The degree of association (correlation) is zero independence.

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FUNDING ECOTOURISM CERTIFICATION PROGRAMS

Biljana Petrevska[1*], Stefanija Deleva[2]

[1]Faculty of Tourism and Business Logistics, Goce Delcev University - Stip, Macedonia

[2]Msc. Candidate at Faculty of Tourism and Business Logistics, Goce Delcev University - Stip, Macedonia

*biljana.petrevska@ugd.edu.mk

Abstract

By becoming more familiarized with the importance of sustaining the ecosystem, one may find the necessity of introducing the ecotourism to the world's industry. Despite numerous attempts to draw unique definition, one may say that it deals with the fact that urges responsibility while traveling to natural areas and conserves the environment, as well as improves the well-being of local inhabitants. The paper gives a snapshot on the ecotourism essentials and presents the importance of applying ecotourism certification programs. Moreover, the paper poses the general and specific objectives stated in the specific ecotourism accreditation programs. The basic financial obstacles, with which tourism enterprises are faced, are noted in addition. In this line, the types and mechanisms for funding, as well as the major financial "players" are elaborated. Finally, the paper concludes that tourism businesses, which have identified the necessity of certifying ecotourism programs, needs unconditionally to follow the ecotourism principles.

Key words

Ecotourism; Certification Program; Financing.

INTRODUCTION

Ecotourism is a subcomponent of sustainable tourism and sustainable version of the primary tourism based on nature, including various different elements of rural and cultural tourism in all its forms. The main intention is to achieve results and effects in terms of sustainable development. However, it is important to clarify that all tourism activities, regardless their association to leisure, business, events, health, adventure, and so forth, the effects on eco-tourism should aim at sustainability. This means that planning and development of tourism infrastructure, further actions and its marketing

operations, should concentrate on preserving the environment, and all the social, cultural and economic sustainability criteria, which correspond to the nature.

Lately stronger orientation towards ecotourism means evolution of a number of principles, guidelines and their certification. They are all based on the standards of sustainability with which the term ecotourism finds some unusual place in the big "pool" named tourism. Even though the great vocabulary for "tourism terms" is very unclear in terms what is a "pulling factor", to the fact that ecotourism is a very simple marketing trick, one may say that generally ecotourism is still only point of view in the behavior to tourists known as eco tourists. Looking globally, this is a type of tourism that includes persons or groups with very clear ecological mind. Furthermore, they participate in all activities and other possibilities settled in the environment. By applying this form of tourism, the main intention is to decrease the negative effects made by mass tourism. So, according to established correlations, ecotourism cannot be classified like a term, which can be used for many regions. On the contrary, it is a form of tourism that attracts attention from those tourists who like the nature, which is still not destroyed. However, the increasing number of these eco tourists, arises the issue of increasing the infrastructural activities, which are often not sufficient. Some basic characteristics, which are mentioned at the concept of ecotourism and accommodation for which these eco tourists are interesting are: (i) Well preserved areas; (ii) Using simple types of accommodation and (iii) Strict adherence to environmental protection, including a limited number of visitors. Guests who use features fully or partially transform the environment and collect experience from the nature. Consequently, ecotourism is often associated with other types of tourism, such as natural tourism, rural tourism, agro tourism, green tourism and even Robinson tourism.

Over the years, various approaches have led to a general consensus on the components of ecotourism, meaning:

- Contribution to biodiversity conservation;
- Maintaining the character of local population;
- Including a relationship, experience - interpretation - learning;
- Doing responsible action of foreign tourists within tourism economy;
- Focusing primarily on small groups and small businesses;
- Requiring the lowest possible consumption of non-renewable resources; and
- Emphasising the local participation, ownership and entrepreneurial opportunities, particularly for rural population.

In the past decades, these efforts to validate the effects and success of ecotourism are still at an early stage. Given the fact that ecotourism is further defined by its participants and markets, many questions remain unanswered about how the success story of eco-tourism can be verified.

ECOTOURISM CERTIFICATION PROGRAMS

Many tourism companies have been introduced in developing countries, where surveillance services, and even communication systems may be inaccessible. The enterprises that are geared towards ecotourism work in small-scale, and their results can best be evaluated using the criteria specified for that working style. Yet, the global certification programs are designed specifically for ecotourism or sustainable tourism in general, and have an urgent need to build international guidelines to address the task of how to develop and manage certification programs. It is a way of ensuring that an activity or a product meets certain standards (Bien, 2006: 7). Moreover, certification is defined as "a voluntary procedure that assesses, audits and gives written assurance that a facility, product, process or service meets specific standards. It awards a marketable logo to those that meet or exceed baseline standards" (Honey & Rome, 2001). According to de Vicente (2004: 15), certification has a much larger impact on supply side of the ecotourism market, than on the demand side.

TABLE 1. BENEFITS OF THE CERTIFICATION

Benefits for certified businesses	- Helps businesses to improve themselves; - Tends to reduce operating costs; - Enables easier access to technical assistance and financing for businesses to implement new technology; - Ensures marketing advantage to certified businesses, as consumers learn to recognize credible certification brands.
Benefits for consumers	- Provides tourists with environmentally and socially responsible choices; - Increases public awareness of responsible business practices; - Alerts tourists to the environmental and social issues in an area, allowing them to act more respectfully or contribute to solutions; - Offers better quality service.
Benefits for governments	- Helps governments o protect their market niches as ecotourism or sustainable tourism destinations; - Raises industry standards in health, safety, environment, and social stability; - Lowers the regulatory costs of environmental protection; - By requiring economic benefits to communities, it can help reduce poverty, especially in rural areas.
Benefits for the environment and local communities	- Requires businesses to protect the environment and do little damage to it; - It requires businesses to respect local culture and provide real economic and social benefits for it; - It is likely to continue offering benefits for the long term.

Source: Adjusted according to Bien (2006: 10-12).

Table 1 gives a glance on the importance of the certification process. Several reasons are noted in the line of justifying the necessity of entering tourism businesses into certification process (Russillo et al, 2007: 4)

- Improving quality and performance of their business and staff;
- "Doing the right things" to protect the environment and local community;
- Cutting costs;
- Gaining marketing advantage; and
- Avoiding being lumped with "greenwashed" businesses that are not sustainable, yet try to claim to be.

In this line, one may underline the necessity of introducing the certification schemes, which highlight the sustainable tourism products. These schemes have dual role of increasing industry performance by providing guidelines on how to be more sustainable, directing applicants towards sources of help and in some cases providing advice directly, and at the same time providing marketing benefits (Font & Carey, 2005: 19). Speaking of schemes, Klintman and Boström (2004) mention internationally harmonized eco standards known as ecological standardization schemes. Some schemes are even more legitimate for the so called "green political consumers" (Crane, 2005), or give the priority to the certain criteria (Blamey, 2001; Fennell, 2008; Klintman, 2012).

Due to fact that certification sets standards and assists in establishing ecotourism and sustainable tourism business opposite to other businesses that do not make such effects, it may be concluded that it is not a self-sufficient process, but rather a complex one consisted of various tools. The first step in that made Australia as a leading country in this program. In this line, in 1994 Australia established the National Tourism Organization (NTO) Program for research, initiating and financing the federal level initiatives for certification. Additionally, in 1996 Australia established the one and only special ecotourism certification program that is accepted in the world. This program presents an economic initiative of the Australian association for ecotourism development funded by the NTO. The program so far has been revised in March 2000 with a new subprogram for tourism based strictly on nature. As accreditation program based on practical, the Australian National Program requires program participants to achieve specific objectives are classified into different categories such as:

- Focus on Nature;
- Interpretation;
- Environmental sustainability;
- Offering protection;

- Working with local communities;
- Customer satisfaction; and
- Responsible Marketing.

In order to achieve a level of accreditation in ecotourism product must meet all essential criteria in each category. Achieving the status of full certification for ecotourism means meeting the 80% special criteria of each category. In this line, the tour operator or other tourism enterprise must complete a comprehensive questionnaire concerning each of the above noted criteria. In its first phase, the program was entirely dependent on the honesty of those who submitted applications. Later on, in March 2000, a new program was introduced and developed various mechanisms to control the ecotourism product together with all its character features.

However, there a still many open issues to be discussed. Namely, the biggest limitation of the program is its poor recognition and its indicators by consumers. On the other hand, this certification program can be applied only to ecotourism products, and is not applicable to the tourism businesses that are affected by indirect factors. Table 2 presents the key phases in certification program development, which are essential for establishing, developing and maintaining reliable certification program.

TABLE 2. PHASES FOR CERTIFICATION PROGRAMS

Phase	Description (steps)
I. Start Up Phase	- Involve a multi-stakeholder body, consisting of representatives from government, tourism industry, academia, and non-profit organizations - Conduct a feasibility study assessing market needs and readiness, funding sources, models of program structure and finance, etc. - Develop a business plan - Develop draft standards and procedures - Finalize standards and procedures - Establish audit and assessment protocol process - Develop marketing materials and conduct promotion of program to potential users - Develop a monitoring and evaluation (M&E) protocol - Secure buy-in (and funding) from key interest groups
II. Operational Phase	- Begin the process of assessing, auditing, and awarding businesses with certification label or logo - Implement training and education programs - Market program and certified businesses to tourism intermediaries - Begin monitoring and evaluation
III. Consolidation Phase	- Develop funding and promotional partnerships to market program more effectively to consumers - Monitor and evaluate status of program and disseminate results widely - Renew and revise standards and procedures as needed.

Source: Adjusted according to Rome et al. (2003: 6).

FINANCIAL OBSTACLES

The ecotourism business cannot be successfully run without investing in a ecotourism certification program. Based on previous experience, it is obvious that without appropriate funding only a segment may be properly addressed. In this line, one may mention the most profound financial obstacles. So, the tourism enterprises dealing in the field of ecotourism have serious barricades and serious financial difficulties. The certification program, assists in:

- Surviving in the competitive market;
- Raising company's image;
- Improving company's performance; and
- Raising the confidence of the company.

Yet, in order to obtain ecotourism certification, certain costs arise. These costs are not limited to short-term or nominated as direct costs, and they can be grouped (Figure 1).

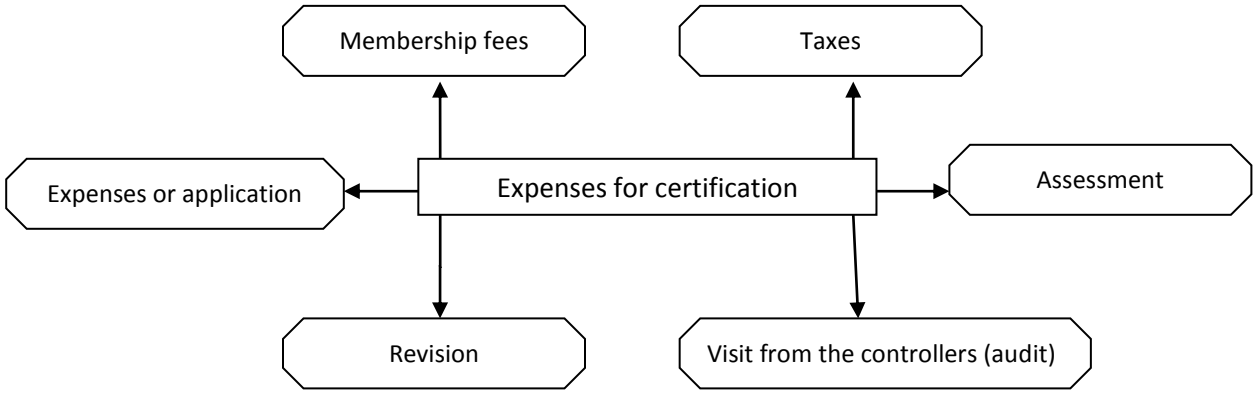

FIG. 1 COSTS RELATED TO THE CERTIFICATION OF ECOTOURISM (CESD, 2003c)

The entire set costs include costs for certain changes and financial needs in terms of equipment and infrastructure, necessary to meet the requirements of the certification program. Especially in times of major activities, one have to consider major investing, like installation of solar panels. Many times these costs are correlated with the introduction of very sophisticated technology. However, the improvements within the company during the period of certification, leads to the conclusion that these costs will bring benefits in much bigger internal efficiency.

On the other hand, small ecotourism enterprises need to have smaller investments since they act in limited environment and apply small range of technology. But tight budgets, as well as the long-term financing costs represent big charges for the most of small

ecotourism enterprises. They are at "pole position" not only in access to finance, but also in the implementation of any new system and technology that have or are required to introduce.

Therefore, the small ecotourism enterprises do not have just lack of funds, but lack of sufficient information and technical capacity and capabilities, benefits and effects of ecotourism. Moreover, they: (a) Do not know where to look for funding for their projects; (b) Are not ready to take the debt without clear cost-benefit analyses; or (c) Do not know how and where to seek for a technical assistance in order to find funding sources.

One approach to assist the ecotourism entities is the forming of a private and public partnership with other stakeholders for sustainable tourism, and thus ecotourism. These stakeholders (Government, NGOs, industry, donators etc) generally have common some interests in providing the highest standards. Hence, most of them are eager to meet the requirements of the certification program. Furthermore, they can play an important role in the overall means of providing technical and financial resources. The government, for example, through supplying benefits in social and economic conditions and sustainable environmental development in meeting the certification program, can assist in great manner in sustainability of ecotourism. Generally, this can be made by:

- Appropriate cover of the ecotourism legislation;
- Providing technical assistance;
- Education of ecotourism businesses on the ecotourism programs and tools that will in turn help them of some NGOs to fulfill mission of social equality;
- Poverty reduction;
- Conservation of monuments and tourist values; etc.

Additionally, donors, green funds and other organizations can provide resources to fulfill certification program through grants, loans and technical assistance.

WHAT TYPE OF FUNDING IS NEEDED?

There are different kinds of necessary funds which have an influence on the financing mechanism. Table 3 presents the sample costs of sustainable tourism certification. Furthermore, one may note the main types of costs, which generally are divided into two groups:

I. Direct costs. These costs are directly related to the certification process and are known as temporary or short-term costs. They can be distinguished from each other, so some different certification programs may include the costs before and after the certification program. This group includes: (i) Application of taxes; (ii) Acquisition of

technical documentation; and (iii) Visiting from some agencies or consultants to implement the certification. Many tourism certification programs offer an inspection visits (audits) and those costs are covered by the certification program.

II. Indirect costs. These costs are long-term, fixed and variable costs. They are more difficult to be evaluated and have an influence on the final results. This type of costs generally address: (i) Using the best available techniques; (ii) Education and training; (iii) Technical assistance; and (iv) Investments in infrastructural projects. The indirect costs are necessary for the running the tourism business and is important that the ecotourism enterprises fulfill the certification criteria. Moreover, by covering these costs one may argue the fulfillment of the requests received from tourism market in order to acquire or improve the quality of tourist services. Therefore a tourism business must provide: (i) Budget for fixed costs (particularly the costs for equipment and infrastructure); (ii) Budget for variable costs; and (iii) Budget to meet the standards for certification.

TABLE 3. SAMPLE COSTS OF SUSTAINABLE TOURISM CERTIFICATION

DIRECT COSTS
Fees such as application and manual Audit/Assessment costs: (range from $150 to thousands of dollars) • Travel, food and lodging for auditors • Daily rates for specialists or internationally accredited auditors • Multiple visits: pre-assessment, diagnostics, audit, and verification inspections Logo and licensing fees – annual fees ranging from free to several thousand dollars
INDIRECT COSTS
Costs of meeting certification requirements: • new management systems and technologies • investment in infrastructure • creating and maintaining management systems • staff training on implementing certification criteria • creating and maintaining social programs • creating and maintaining environmental programs • meeting and maintaining quality and service standards

Source: Russillo et al. (2003: 7).

MECHANISM FOR FUNDING

Financial instruments. There are numerous financial instruments for providing funds for certification of the ecotourism business, such as: financial aid, subventions, grants, loans and payments for services which are performed in the environment, and so forth.

The financial subsidies from the government and banks may also be available to meet the requirements of certification programs.

Financial support. Subsidies are costs that can be absorbed or paid by someone else. They can be direct or indirect subsidies such as cost reduction or other forms of financial support. It includes: (i) Informal taxes (membership, application, review, training, income, etc.); (ii) Reduced costs or loans from the government for small businesses to implement specific sustainable practices and are used to fulfill the requirements of the certification program; and (iii) All types of support, including technical assistance to offset the investment needs and direct payment of subsidies from NGOs, donors and governments.

Grants. Traditionally, the grants are used to cover the program costs for providing technical assistance and training programs, but cannot be used to cover the costs of audits. The grants are not repaid, but there may be specific reporting requirements for monitoring and evaluation. The grants may be used to cover direct and indirect costs.

Loans and Loans guarantee. Credits loans are used to assist the ecotourism enterprises to obtain the certification in an easier manner. Loans are repaid by banks and companies have to negotiate favorable terms of guarantees, such as: (a) Grace period before payment; (b) There are no guarantees with personal assets; (c) Longer repayment periods; and (d) Reduce the amount of the credit for early payment. The credits for certification of sustainable eco-tourism can have guarantees of humanitarian agencies and private business to reduce risk and interest rates.

Other types of support. Many organizations can offer non-cash assets or other forms of support such as technical assistance, marketing assistance or through business administration. The programs can help to recover the cash advances to the small businesses and offered the free services.

Finance for conservation. This is a relatively new field for financing the certification program in the ecotourism. So, the tourism enterprises which primary focus is on conservation of natural monuments, may apply this source of financing. The intention is to receive funds so the eco tourists will add a value to the sustainable tourism and environmental protection. Some financial plans for conservation are met entirely by the private sector, while others are initiated by the public sector.

Payments for the eco environmental services. Preventing the eco-system creates multiple benefits. Many eco activities that are implemented provoke advantage for the sustainable tourism businesses, not only in terms of tourism, but also for the socio-economic life in general. Eco activities related to cleaning the lakes and rivers contribute to enhancing the control and protecting the eco-systems. Yet, many institutions discover

a potential in providing alternative flows in order to obtain funding for sustainable ecotourism business. The sustainable business in ecotourism generates various effects to the community, in the first line economic, social and environmental.

Other considerations. The financing in ecotourism for the fulfillment of the certification program is of paramount importance, but this is only a small part of the great mystery seeing that in tourism growing pool of money, does not always mean answering the criteria questions. Nevertheless, these issues are strictly related to meeting the certification program of ecotourism since their fulfillment may lead to improving the responsibility for the next levels of change as a result of certification. Bigger and more successful tourism businesses can have an easier access to finance. Due to this fact, it is very important that all ecotourism companies colaborate with the private and public sectors, community organizations and donorsin order to perform the certification program with all its tasks arising from it.

FINANCIAL "PLAYERS"

The various sources of funding to fulfill the certification program for ecotourism has many variations resulting with different combinations. Some tourism enterprises conduct the certification program in partnership with the NGOs, private foundations, supporting agencies or governmental bodies, in order to identify funds for covering the costs associated with certification. They may get the support in the form of technical assistance and subsidies from big companies that have been certified or are in the process of certification. In this line, all involved institutions should be prepared to provide integrated packages of financial, technical and marketing assistance to tourism businesses (Sanders, 2004).

The majority of certification programs are on national level. This is particularly the case with the tourism-oriented countries. Hence, the sources of financing can often be found among the authorities as the only funding source. Towards certification of the ecotourism businesses, one may note the need of wise approach following the "step by step" procedure. In fact, it is not required to meet any standards at once, but rather to allow the ecotourism business to fulfill the individual regulatory requirements over the time, thus to extend the indirect costs over several years.

There are many "players" on different levels who may have important role in posing a strategy for undertaking activities for sustainable ecotourism, which consequently will lead to the process of obtaining ecotourism certification. In case of not having sufficient funds, the leading "players" may have successful approach to donors and grants for

programs and projects that include sustainable practices. The main aim is to lobby the highest officials to create politics that support sustainable practices and develop innovative tools that enable funding of ecotourism enterprises. In this line, the supporting agencies may also invest in local and regional infrastructure networks. Generally, they are dealing with public funds and promote specific certification programs. However, these certification programs are instruments of public-private partnership with consulting companies where funds are allocated for creation of potential resources for sustainable ecotourism businesses.

CONCLUSION

The paper gives a glance on financing ecotourism certification programs. It underlines the necessity of developing certified programs that measure different aspects of ecotourism. In this line, the certified programs ensure that ecotourism: (i) empowers local communities around the world to fight against poverty and to achieve sustainable development; (ii) provides effective economic incentives for conserving and enhancing bio-cultural diversity and helps protect the natural and cultural heritage; and (iii) promotes greater understanding and appreciation for nature, local society, and culture.

Moreover, the paper poses the general and specific objectives stated in the specific ecotourism accreditation program. So, in order to achieve accreditation in ecotourism, 80% of the specific criteria must be fulfilled. That means that more than 2/3 of each category (nature; interpretation; environmental sustainability; protection; working with local community; cultural component; customer satisfaction; and responsible marketing) must be met.

In addition, the research underlines the basic financial obstacles, with which tourism enterprises are faced. Although the first impression is that small ecotourism enterprises have lack of funds, the practice shows that they are often faced with lack of appropriate information, technical capacity and capabilities to search for funding. More precisely, they are not sufficiently informed about the sources of financing ecotourism programs, and are not ready to take the debt without clear cost-benefit analysis. In this regard, one may assist them by creation of a public-private partnership in the field of ecotourism.

Referring the types and mechanisms for funding, the paper recalls the numerous financial instruments for providing funds for certification of ecotourism businesses. So, subsidies, grants, guarantees, credit loans, non-cash assets and other funding sources are elaborated. Furthermore, the major financial "players" in terms of local, national and international NGOs, agencies, institutions and bodies are mentioned. Finally, one may conclude that ecotourism is very important and includes everything that supports conservation, communities, and sustainable travel. So, each tourism entity that has

identified the necessity of certifying its ecotourism programs needs to unconditionally follow the ecotourism principles. They address: minimizing the impacts; building environmental and cultural awareness; providing positive experiences for visitors and hosts; provide direct financial benefits for conservation and empowerment for local people; and raising sensitivity to host countries' political, environmental, and social climate.

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OPEN ACCESS ARTICLE

RELATIONSHIP BETWEEN BANKS AND CUSTOMERS: A QUANTITATIVE RESEARCH APPROACH

Joel C. Nwaubani[1*], Evangelia Vussa[2]

[1] Department of Applied Informatics, University of Macedonia, Thessaloniki, Greece

[2] Group Cater Agency, Subsidiary Group of Groupoma

* joelino@uom.gr

Abstract

The relationship between banks and customers cannot be overemphasized. A banker and a customer's relationship depend on the type of transaction, products or services offered by bank to its customers. The legal relationship between a bank and its customer differs in several important respects from the relationships between most other service providers. This relationship could be referred to that of a Pledger and a Pledgee. This happens when customer pledges (promises) certain assets or security with the bank in order to get a loan. In this case, the customer becomes the Pledger, and the bank becomes the Pledgee. Under this agreement, the assets or security will remain with the bank until a customer repays the loan. In this paper, a quantitative research was carried out with questionnaire on the relationship between banks and customers in Greece. The aim of our research is to find out: (i) which banks in Greece are most popular and why; (ii) their outstanding services; and (iii) what type of relationship do customers have with these banks. In conclusion, we find out that in one hand, the relationship between banks and customers is good and all interviewers visit a bank branch at least once a month. On the other hand, not all customers are satisfied with the bank rates, hence, they ask for better services such as continuous update of information, transaction of their accounts, interest rates, loans and various e-banking products.

Key words

Major Banks in Greece; Quantitative research; Customers; Gender; Formal and informal research.

INTRODUCTION

Once upon a time banks, retailers, insurance companies and car dealers had a close relationship with their customers. They often knew them individually, understood what they wanted, and satisfied their needs through personal customized service. As

a result, they earned loyalty and a large share of their customers' business. This, however, was a costly and inefficient system and customers effectively subsidized this relationship by paying higher prices. Over the years, through mass marketing and increased consumerism customers traded relationships for anonymity, reduced variety and lower prices. Today, through the effective use of information and communications technology, such a tradeoff is not necessary; organizations can now offer their customers variety, lower prices and personalized service and all at the same time. An airline gate attendant whom you have never set eyes on knows you are a valuable customer and upgrades your seat to first class in preference to a once-a-year holiday traveler. Your garage reminds you that your car is due for service. Your bank informs you that you have excess funds in a non-interest bearing account. These companies are practicing elements of an approach to marketing that uses continuously refined information about current and potential customers to anticipate and respond to their needs.

Larson, (2000) stressed that the relationship between a banker and a customer depends on the activities, products or services provided by bank to its customers or availed by the customer. Bank's business depends much on the strong bondage with the customer. "Trust" plays an important role in building healthy relationship between a banker and customer.

QUANTITATIVE RESEARCH

In this paper, we intend to conduct a quantitative research with the questionnaire method. According to Blaxter et al, (1996), quantitative research methods are chosen because quantitative strategies are seen as more scientific and objective compared to other strategies. In addition, the key feature of quantitative research is that it is or aims to be a planned, careful, systematic and reliable way of finding a deep understanding.

PURPOSE OF RESEARCH

The aim of our research is to find out:

- Which banks are most popular and why?
- Which services of the banks are outstanding?
- What relationship do banks have with customers?
- Are customers satisfied with the banks they transact with?

The information generated, can be used by the management of the banks to modernize and improve their services, developing new and generally to draw conclusions that will help to better organize and develop the hardware, infrastructure and services of the banks and lead to better allocation of staff and work with the aim of increasing their customers. In order to arrive at a concrete conclusion, we addressed customers from four banks through questionnaires and interviews to the managers of these banks that we considered to have the most

important positions in the Greek banking market. The four banks are namely: National Bank of Greece, Alpha Bank, Commercial Bank and Piraeus Bank.

The significance of our research lies within the strong competition prevailing in the banking environment, which, new and old, is trying through various ways and incentives to consolidate their position in the banking market.

METHODOLOGY

In this research, we wanted to go deeper and to learn more about the banks and their services. Hence, the managers of the sampled banks were addressed and a short interview was taken by putting the following questions:

1. When did your bank start operation?
2. What was the evolution till date?
3. Do you think that your bank can successfully cope with the prevailing competition in the market?

NATIONAL BANK OF GREECE

The Manager of the National Bank branch at 160 Egnatia Street in Thessaloniki, Mr. Stylianos Kakaris commented that: The National Bank of Greece (NBG); Greek: *Εθνική Τράπεζα της Ελλάδος*) is the oldest and largest commercial banking group in Greece. The group has a particularly strong presence in Southeastern Europe and the Eastern Mediterranean. It owns subsidiaries in over 18 countries, including Bulgaria, Cyprus, Egypt, Former Yugoslavia Republic of Macedonia (FYROM), Netherlands, Romania, Russia, Serbia, South Africa, Switzerland, and Turkey. Founded in 1841 as a commercial bank, NBG enjoyed the right to issue banknotes until the establishment of the Bank of Greece in 1928. It has been listed on the Athens Stock Exchange since the Exchange's foundation in 1880. The NBG Group is involved in the investment banking services, brokerage, insurance, asset management, leasing and factoring markets. The Bank's branch and ATM network, the largest in Greece (568 domestic banking units and 1485 ATMs), effectively covers the entire country. It is developing and expanding alternative distribution channels for its products, such as mobile and internet banking. Today, after recent acquisitions in South Eastern Europe the Group's network overseas consists of 868 units. Over 9 million deposit accounts and more than 1.5 million lending accounts are held with NBG.

ALPHA BANK

The Manager of the Alpha Bank branch at 32 Ionos Dragoumi Street, Thessaloniki, Mr. Anastasios Zagas said that: It is the second largest bank in Greece with 450 branches throughout the country. It also has a subsidiary and branch in London, and

branches and subsidiaries throughout the Balkans. Founded in 1879, it has been controlled by the Costopoulos family since the very beginning. Currently the bank is chaired by Ioannis Costopoulos.

- In 1879 John F. Costopoulos established a small commercial firm in the city of Kalamata.
- In 1918 the banking department of the "J.F. Costopoulos" firm changed its name to Bank of Kalamata.
- In 1924 the bank moved its headquarters to Athens and changed its name to Banque de Credit Com Hellenique.
- In 1947 the bank changed its name to the Commercial Credit Bank (CCB).
- In 1972 the CCB changed its name to Credit Bank (Trapeza Pisteos).
- In 1994 Credit Bank changed its name to Alpha Credit Bank (ACB).
- In 1999 ACB acquired 51% of the shares of the Ionian Popular Bank.
- In 2002 (February) Alpha Bank's attempted merger with National Bank of Greece fell through.
- In 2011 (August) Alpha Bank merged with Eurobank EFG.

The new bank is the biggest bank in southeastern Europe, with assets of 146 bn euros ($ 212 bn; £ 129 bn) and 1.300 branches.

EMPORIKI BANK

The Manager of the of Emporiki Bank branch at 21 Ionos Dragoumi Street, Thessaloniki, Mr. Athanasios Prusalis pointed out that: The Emporiki Bank (Greek: Εμπορική Τράπεζα) is a Greek bank. The Commercial Bank of Greece (CBG) was established in 1907. The bank has 370 branches across Greece. After World War I, in 1922, CBG established and took a major position in Commercial Bank of the Near East (CBNE) in London with CBG as a major shareholder. CBG expanded its international operations further by opening a branch in Alexandria in 1925, and another one in Cairo later. The bank has most of its subsidiaries in Cyprus. It also has subsidiaries in Albania, Romania and Bulgaria, and a branch in London that also manages a financing subsidiary. The bank is one of the 500 largest banks in the world. In August, 2006, the French bank Crédit Agricole, acquired 67% of its capital and now controls Emporiki.

PIRAEUS BANK GROUP

The Assistant Manager of Piraeus Bank branch in 132 Tsimiski Street in the city of Thessaloniki, Mrs. Papanikoli Chrysanthi made the following statement: Piraeus Bank Group is one of the most dynamic and active financial organisations in Greece today. Founded in 1916, Piraeus Bank went through a period of state-ownership and management (1975-1991) before it was privatised in December 1991. Since then, it has continuously grown in size and activities. Along with its organic growth and strong presence in the domestic market, Piraeus Bank absorbed the activities of Chase Manhattan in Greece in 1998, took over controlling interest in Macedonia-

Thrace Bank and acquired the specialised bank Credit Lyonnais Hellas. At the beginning of 1999, the Bank acquired Xiosbank and absorbed the activities of National Westminster Bank Plc in Greece.

The Piraeus Bank group of companies engages in financial and banking activities not only in Greece but also in Frankfurt, London and New York through a branch network of 960 stores, as well as the financial centers of Southeastern Europe and the Eastern Mediterranean. Piraeus Bank Group engages in retail banking, the financing of small and medium-sized enterprises (SMEs), capital markets, investment banking, leasing, real estate and financing of the shipping sector.

Piraeus Bank Group has a constantly expanding network with more than 300 branches in Greece, 14 branches in New York, 1 in the UK, 180 branches in Romania, 72 in Bulgaria, 38 in Albania, 38 in Serbia and 40 in Egypt. Piraeus Bank Group acquired a Ukrainian bank, International Commercial Bank, in 2007. In addition, Piraeus Bank operates a representative office in Moscow.

FORMAL RESEARCH

The population under our research lies within the following groups: Undergraduates, Postgraduates & Ph.D candidates of the University of Macedonia; Members of the Academic and Research staff of the University of Macedonia; Members of the Administrative Staff of University of Macedonia; External visitors to the University of Macedonia and various customers at the branches of the banks.

SAMPLES

In data analysis, data less than 60 could not be analyzed further because they do not have the minimum statistical reliability while data approximately 1.000 and above are considered to be indicatively analyzed (ICAP A. E., 1997).

The sample of our respondents is a representation of the population under investigation. The population and the sample obtained are as follows:

- Undergraduates, Postgraduates & Ph.D, University of Macedonia …..... 570
- Academic and Research staff members, University of Macedonia …….. 55
- Administrative staff members, University of Macedonia ……. 20
- External visitors UOM & various customers at bank branches …….. 555
- ***Total ….*** ……. ***1,200***

QUESTIONAIRE

The questionnaire designed consists of 20 questions and includes issues related to the purpose of the research. It was conducted at the University of Macedonia and at various branches of the banks in the city of Thessaloniki from 13-17 June, 2013 (shortly before Piraeus Bank's acquisitions of the "good" ATEbank, Geniki Bank,

Bank of Cyprus, Cyprus Popular Bank, Hellenic Bank and the Millennium Bank of Greece in September 2013).

DATA PROCESSING

Upon completion, the questionnaires are being coded and the responses processed at the statistical software package (SPSS) and with the help of Microsoft Excel program used for all logical checks of the imputed data and the extraction of the results in graphs that have the form of pie.

RESEARCH FINDINGS

1. Question: "Gender". Out of the total respondents (1,200 persons), it was found that 54% were males and 46% female (Fig. 1).

2. Question: "Age". Out of the total respondents (1,200 persons), it was found that 66% were from 18 - 34 years, 31% were from 35 - 54 years, while 3% were from 55 years old and above (Fig. 2).

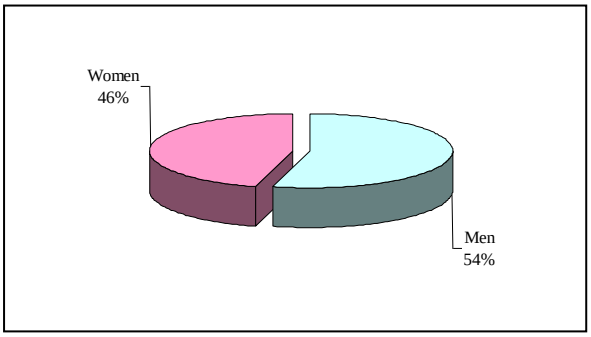

FIG 1. GENDER

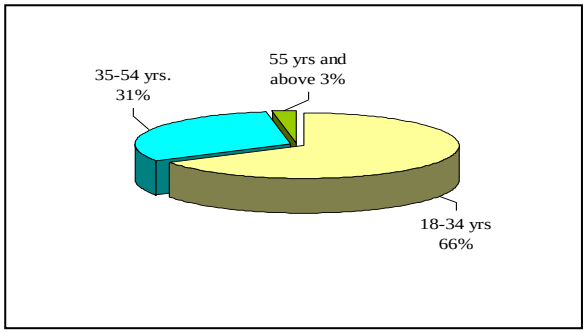

FIG 2. AGE

3. Question: "Marital Status". From the total respondents (1,200 persons), it showed that 56% were single, 41% were married and 3% divorced (Fig. 3).

4. Question: "Skills/Knowledge". From the total respondents (1,200 persons), the result showed that 53% were at the level of Universities / Technological Institutions, 21% were in Secondary Education, 19% in Postgraduate and 7% were PhD. Illiterates and primary education was not found (Fig. 4).

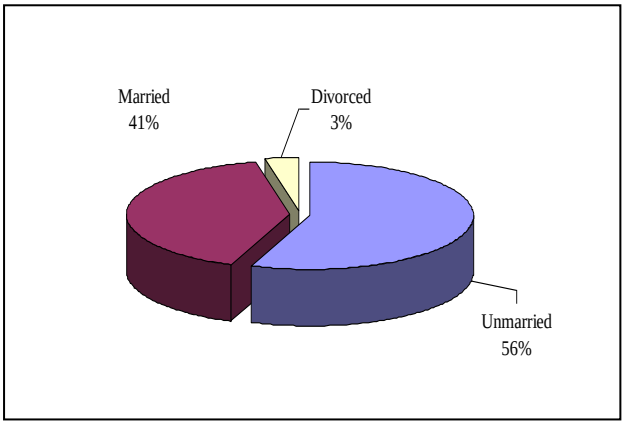

FIG 3. STATUS

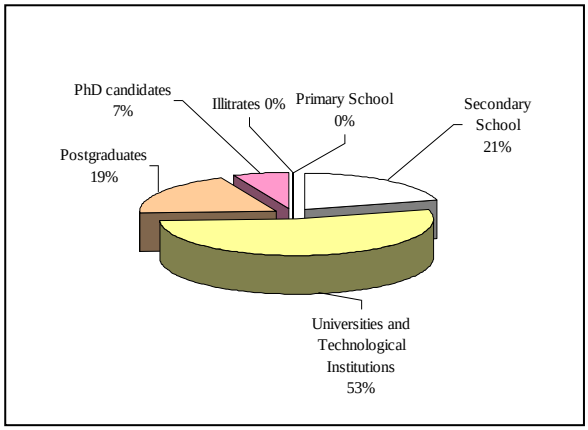

FIG 4. SKILLS/KNOWLEDGE

5. Question: "Status". Out of the total respondents (1,200 persons), it was found that 52% were students of the University of Macedonia, 2% were Administrative Staff of the University of Macedonia, 6% were members of the Academic / Research staff of the University of Macedonia, and 40% were External visitors to the University of Macedonia and customers from four banks visited (Fig. 5).

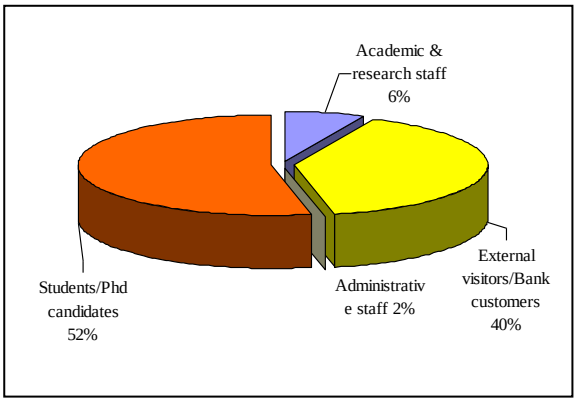

FIG 5. STATUS

6. Question: "In which bank do you have more transactions?". From the total respondents (1,200 persons), the result showed that 42% have more transactions with the National Bank of Greece, 13% with the Agricultural Bank, 12% with Piraeus Bank, 11% with EuroBank, 10% with the Alpha Bank, 9% with the Emporiki Bank, 2% with Egnatia Bank and 1% with Bank of Cyprus (Fig. 6).

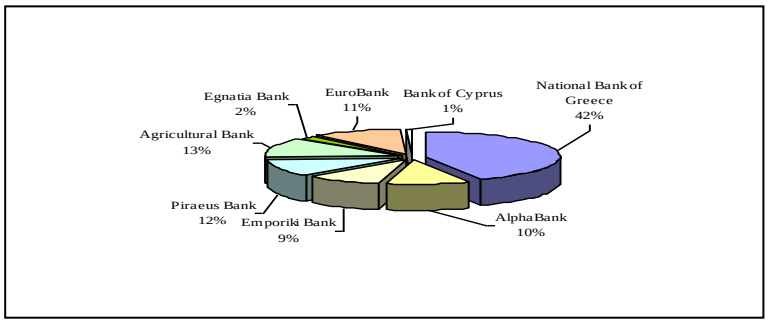

FIG 6. GENDER

7. Question: "How often do you transact with this Bank?". Out of the total respondents (1,200 persons), the result showed that 61% have transactions with the Bank of their choice once a month and 39% more than once a month (Fig. 7).

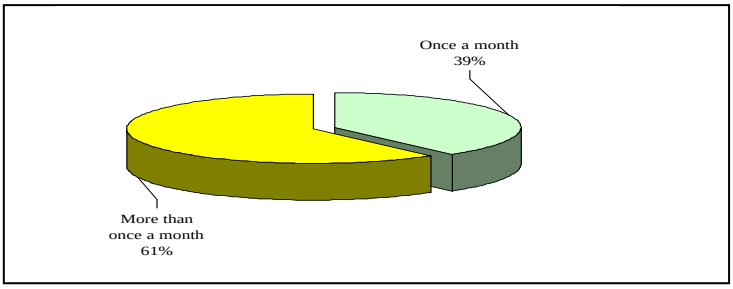

FIG 7. TRANSACTION WITH BANK

8. Question: "Why did you choose this Bank?" (Fig. 8)

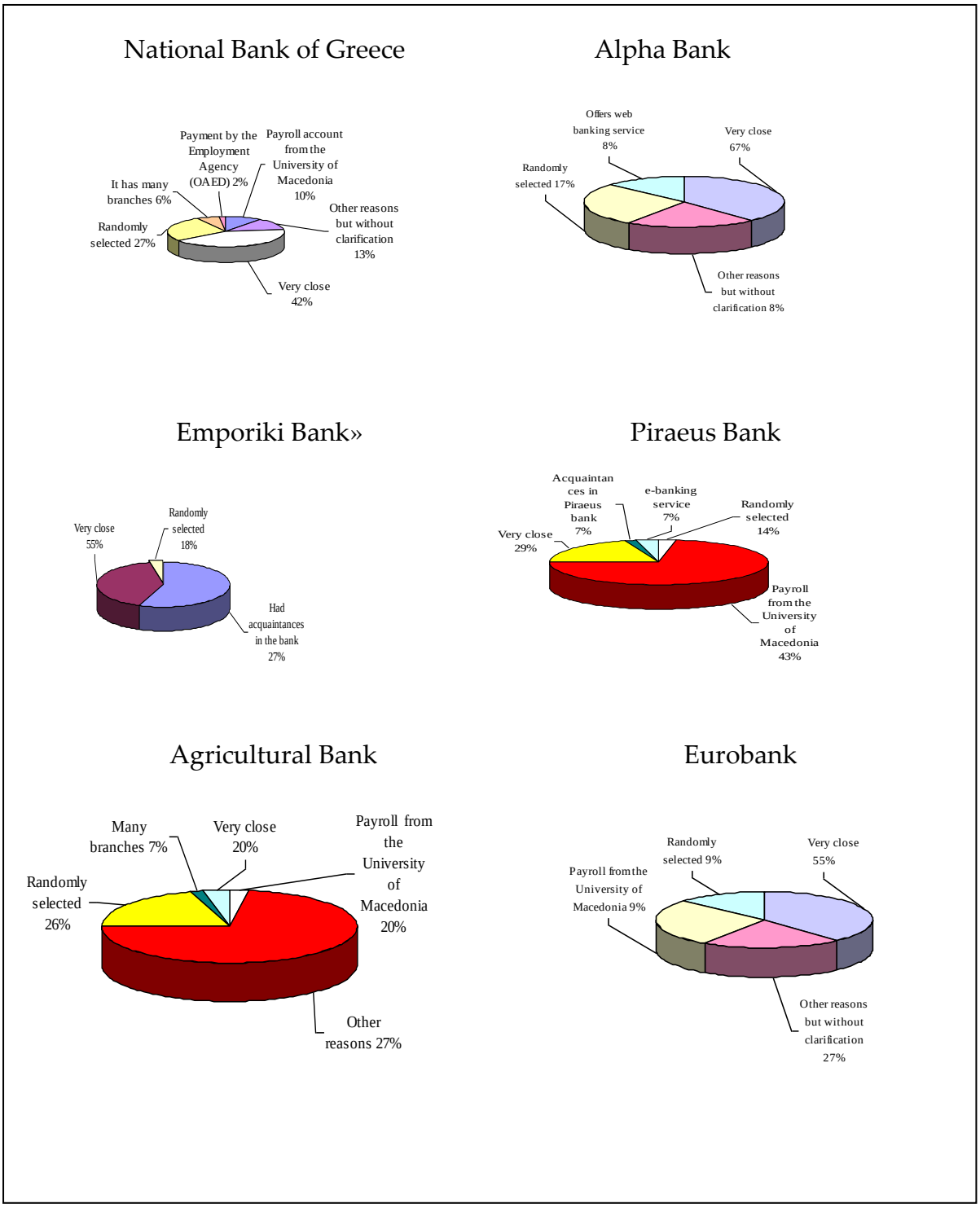

FIG 8. BANK CHOICE

9. Question: "Were you influenced by the name?" (Fig. 9)

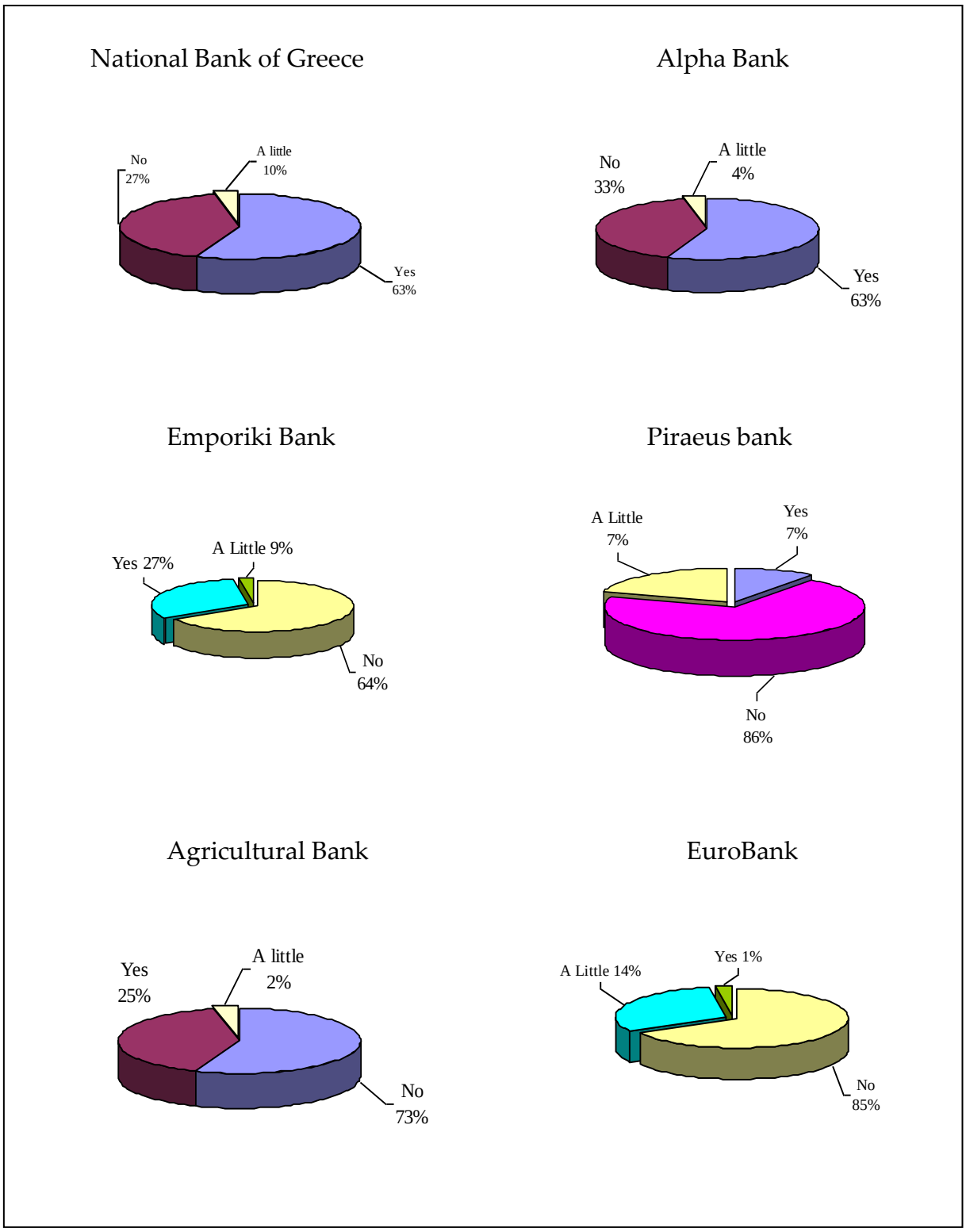

FIG 9. BANK INFFLUENCE

10. Question: "What do you like most in this Bank?" (Fig. 10)

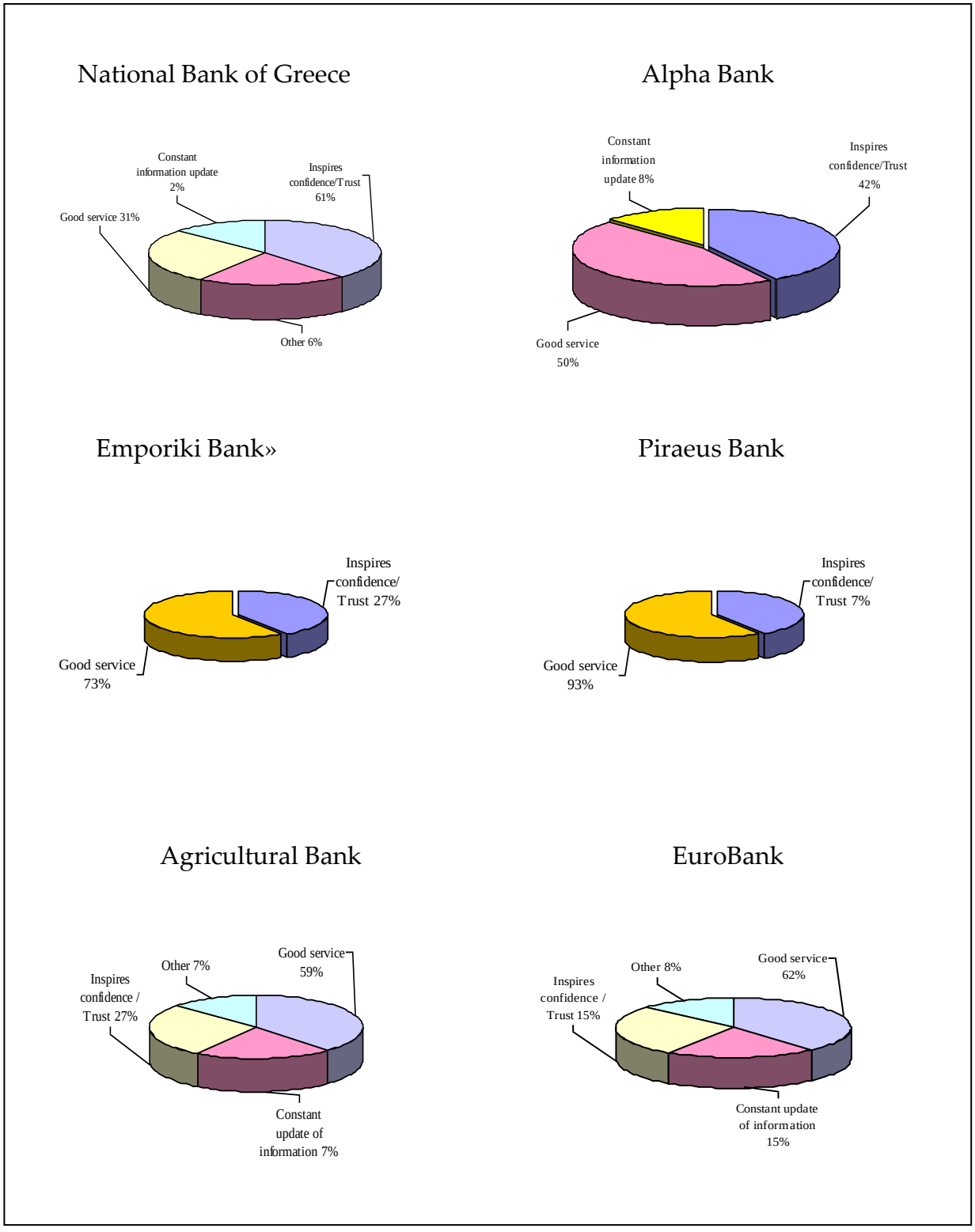

FIG 10. BANK PREFERENCE

11. Question: "What are the things you dislike in this bank and would like them to be changed?" (Fig. 11)

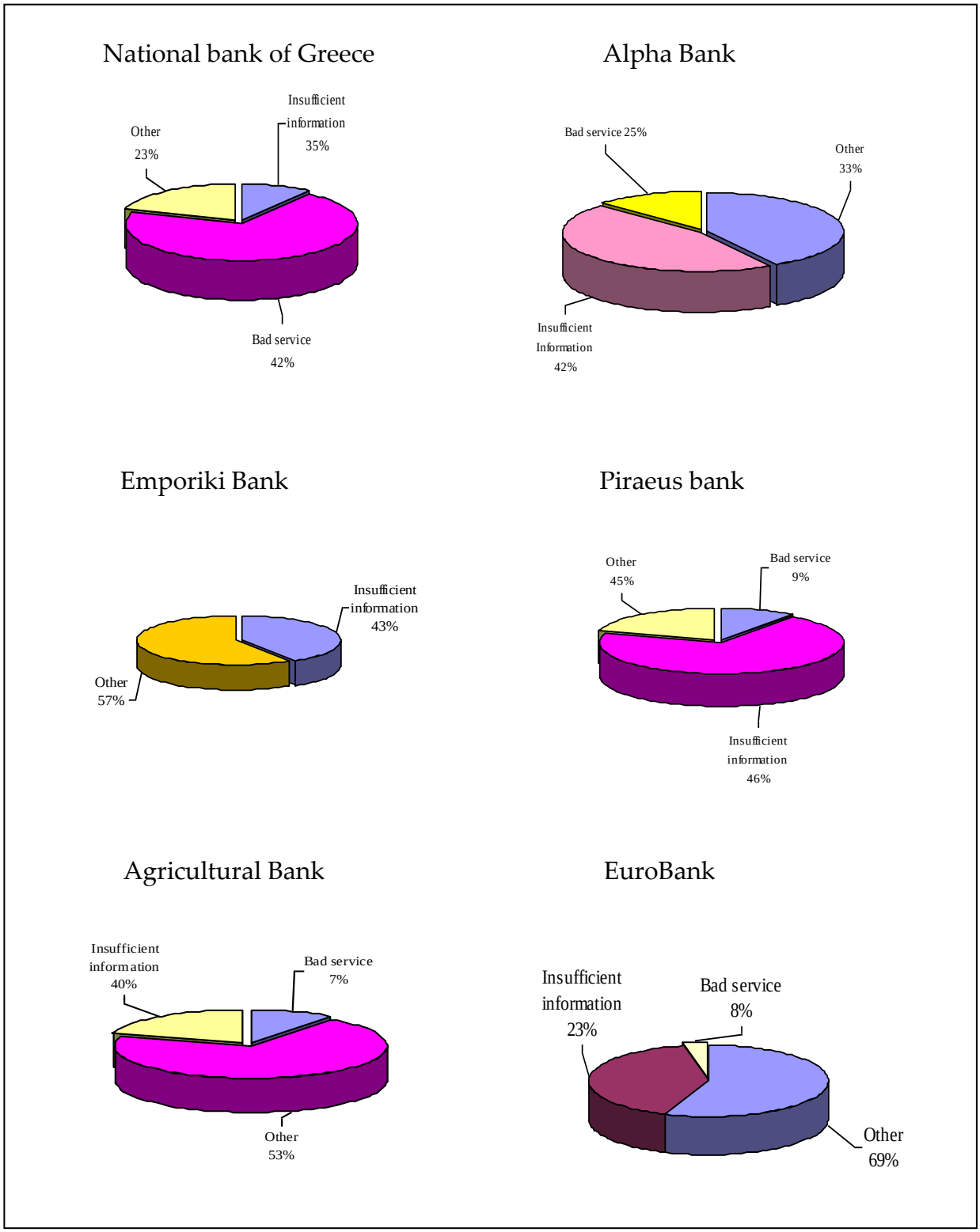

FIG 11. PROPOSAL FOR CHANGES IN THE BANK

12. Question: "Do you make use of this bank only?". Out of the total respondents (1,200 persons), the result showed that 69% use more than one bank and 31% use only one bank for his personal transactions (Fig. 12).

13. Question: "Do you make use of plastic card and ATM machines?". From the total respondents (1,200 persons), the result showed that 91% have a plastic card and uses the ATM machines while 9% do not (Fig. 13).

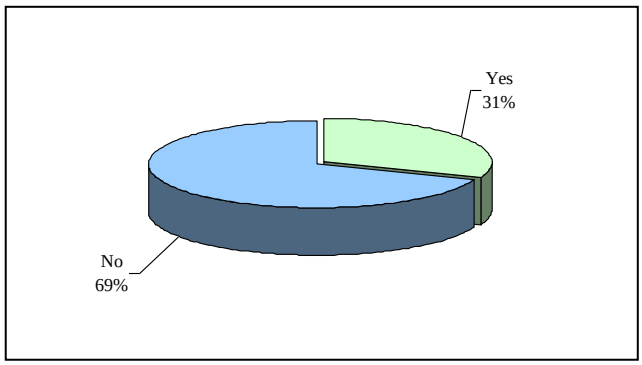

FIG 12. USAGE OF BANK

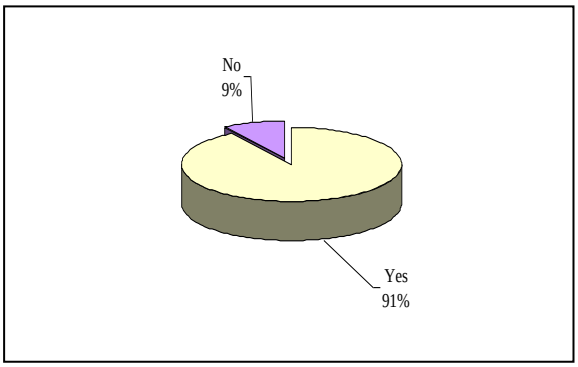

FIG 13. USAGE OF PLASTIC CARD AND ATM MACHINE

14. Question: "If yes, how often do you make use of the plastic card?". From the total respondents (1,200 persons), the result showed that 91% have plastic cards and uses the ATM machines. Out of these respondents, 46% uses the plastic card quite often, 41% very often and 13% rarely (Fig. 14).

15. Question: "Do you pay bills through any bank with plastic card (e.g. telephone, electricity, water, etc)?". Out of total respondents (1,200 persons), 89% do not pay their telephone, electricity and w,ater bills through any bank while 11% do (Fig. 15).

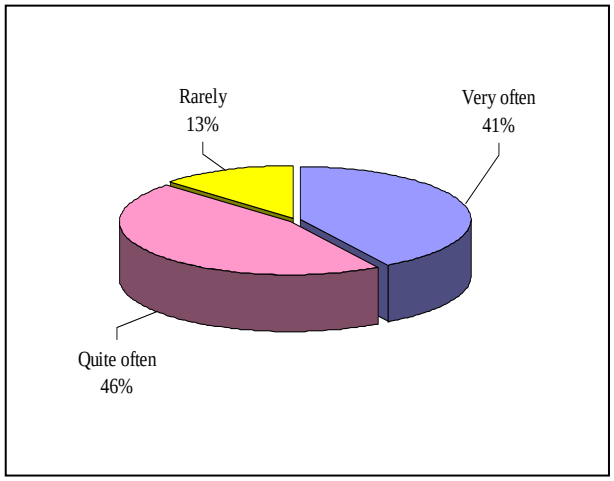

FIG 14. INTERVAL USE OF THE PLASTIC CARD

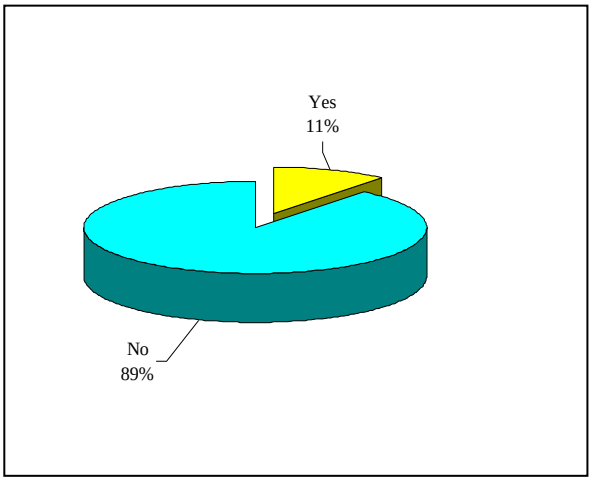

FIG 15. PAYMENT OF BILLS

16. Question: "Do you have a credit card in your name in a particular bank, if yes, how many credit cards do you have?". From 1, 200 respondents, 59% do not have credit card in their name in a particular bank, while 41% have (Fig. 16).

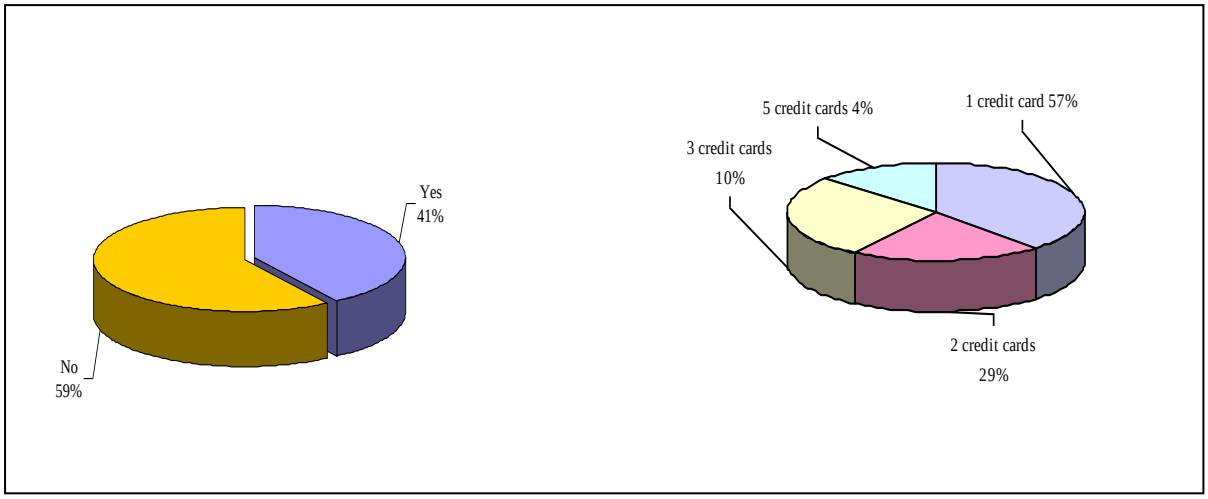

FIG 16. NUMBER OF OWNERSHIP OF CREDIT CARD

17. Question: "Have you taken a consumer loan from a particular bank, if yes, from which bank was it taken?". From 1,200 persons, 84% have not taken a consumer loan from a particular bank, while 16% have taken (Fig. 17).

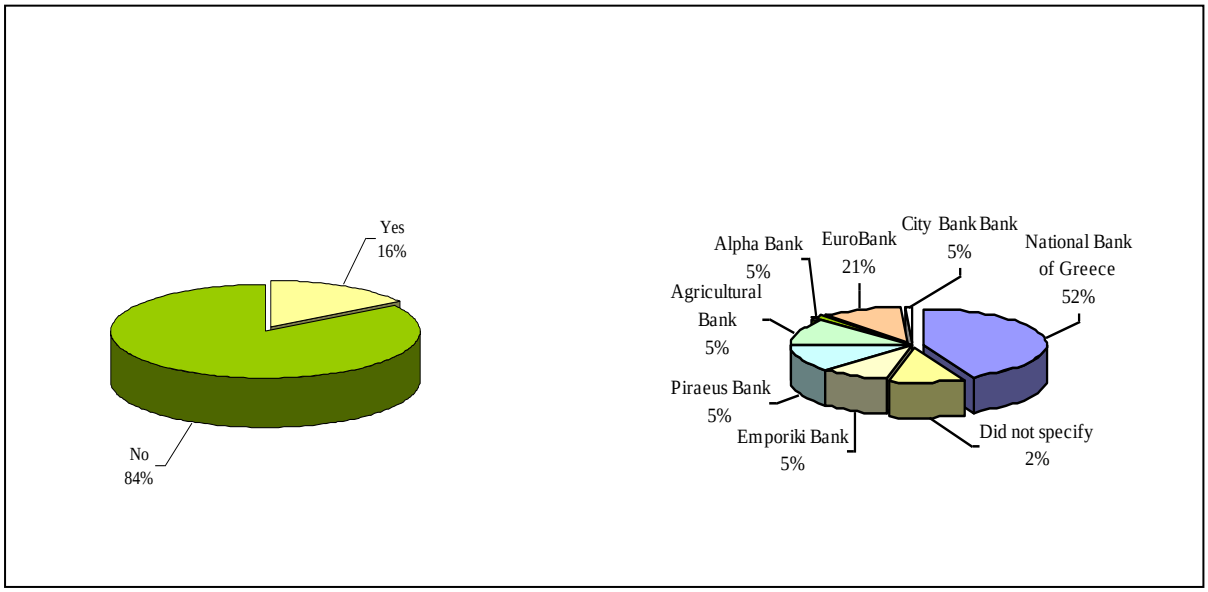

FIG 17. CONSUMER LOAN

18. Question: "Have you taken a mortgage loan from a particular bank, If yes, which bank was it taken?". From 1,200 respondents, 86% have not taken a mortgage loan from a particular bank, while 14% have taken (Fig. 18).

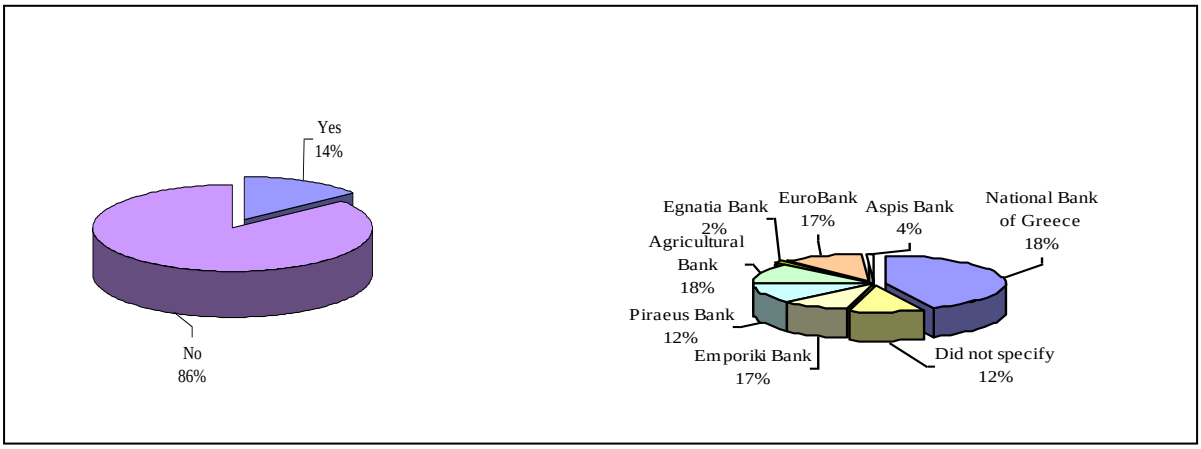

FIG 18. USAGE OF MORTGAGE LOAN

19. Question: "Are you satisfied with the interest rates on your deposits?". From the total respondents (1,200 persons), 70% are not satisfied with the interest rates on their deposits, 20% are a bit satisfied, while 10% are satisfied (Fig. 19).

20. Question: "What is your opinion about the questionnaire you just filled?". Out of the total respondents (1,200 persons), 72% said they found the questionnaire good, 20% excellent, 3% did not like it, 3% did not answer and 2% said that it could be improved (Fig. 20).

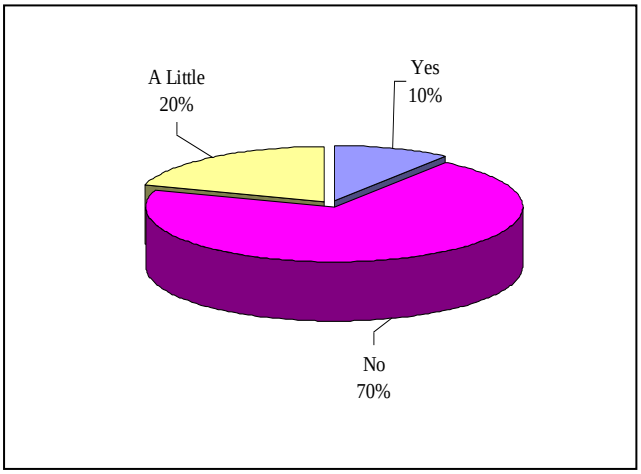

FIG 19. INTEREST RATES

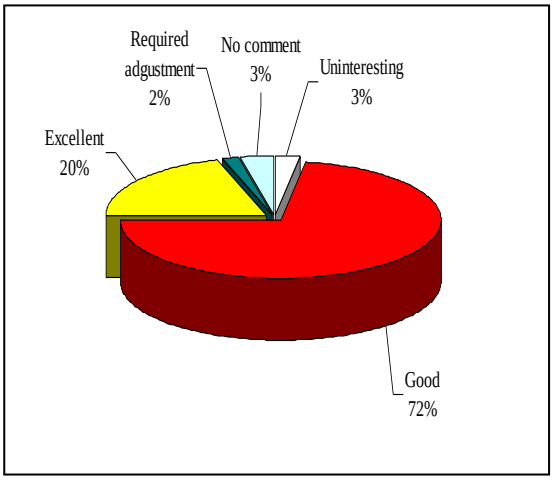

FIG 20. OPINION FOR THE QUESTIONAIRE

CONCLUSION

Generally, we can say that compared to the questions set at the beginning of the research, one may arrive at the following conclusions:

- The most popular banks in terms of preference are: (1) The National Bank of Greece, (2) Agricultural Bank, (3) Piraeus Bank and (4) Euro Bank.

- Most customers selected these banks because they have branches near them and thus were better served and not because they were influenced by the name and reputation of the bank.
- The National Bank of Greece and Piraeus Bank inspires much more trust/confidence than other banks, while Piraeus Bank and Emporiki Bank takes the lead in good service.
- The services of the banks that stood out were the plastic card, credit card and loans (consumer and mortgage).
  ✓ Almost all the respondents use a plastic card.
  ✓ Almost half of respondents have a credit card in their names.
  ✓ Almost ¼ of the respondents have taken a mortgage or consumer loan
- The relationship between banks and customers is good and all respondents visit a bank branch at least once a month.
- Almost all bank customers are not satisfied with the interest rates of the banks. In addition, they ask for better service such as: frequent and continuous update of information, the movements of their accounts, interest rates, loans and various banking products.

SUGGESTIONS / SOLUTIONS

Customer Care

From the questions and answers from customers, one may conclude that most of the banks have service problem (particularly, the National Bank of Greece). For many customers to be waiting, this always has a negative effect on them and counts as an ugly experience (Scotland, 1991).

It is understood that delays will affect the valuation/assessment of a consumer as to the accuracy of service, because by definition accuracy refers to the assessment of willingness or readiness, speed at a certain point in time). The problem of delays could be addressed through the recruitment of qualified and appropriate staff. Those providing services should try to reduce delays with the help of corporate research, adoption of latest technology or change the experience of waiting of customers with the help of cognitive or perceptive management so that uncertainty will be reduced. We should not forget that the adoption of the latest technological advances in the banking sector is essential both for better and faster service and for more security in transactions (Berry & Parasuraman, 1992).

Lack of Communication

Through the research, an additional conclusion tells us that most banks lack update of information. In other words there is no communication between the bank and

customer. The information for transactions on the strategies that they follow as regards to interest rates, loans, the various banking products helps to build confidence, exploitation – investment of their money. Moreover, correct and adequate information is necessary in understanding, in terms of customers, new technology, which the bank is likely to introduce.

The solution to the problem could be addressed through diverse information, correct and in different ways. Specifically, one way is through correspondence, the distribution of printed materials to inform customers each time for a new product, a possible change, an entirely new strategy.

Another good idea would have been the presence of pamphlets at various points inside the bank for various activities of the bank either on the financial-banking sector or in other areas. Thus, a customer will have the potentiality to choose the pamphlet that interests him and will enlighten him on the loans, investments and any other product (Morgan & Hunt, 1994).

Satisfaction of Customers

In summary, we could determine the value and importance of our work in that the increase of a bank's customer is directly linked to, as much as possible, greater of our customer's satisfaction. This satisfaction consists of many factors such as: good service-which means to show courtesy (politeness) during transactions and speed (as much as possible minimizing bureaucratic procedures) and, accurate and adequate information (Malliaris, 2001).

Finally, we arrived at a general conclusion that increasing the customer of a bank is a function of reducing transaction costs, satisfaction of specific customer needs of modern technology and promoting new or existing banking products.

Among others, we empirically realized that customers are different (unique) and that it is important for a bank to know their needs so as to give them a maximum satisfaction. Furthermore, we realized that customers appreciate and seek quality service in their transactions and are not merely just the name and reputation of the bank (Lazos, 1990).

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DETERMINANTS OF CORPORATE DEBTS: THE CASE OF OIL & GAS AND TEXTILE SECTOR IN PAKISTAN

Muhammad Nadeem Iqbal[1], Awais Ur Rehman[2], Moeen Ul Haq[3*]

[1]Department of Leadership & Management studies, National Defense University Islamabad, Pakistan

[2]Faculty of Management Sciences, International Islamic University Islamabad, Pakistan

[3]Institute of Management Studies, University of Peshawar, Pakistan

*moeen_haq@yahoo.com

Abstract

In this paper we examined the factors that are important for the determinants of the corporate debts structure. For that purpose we have chosen two most important sectors from an emerging economy like Pakistan (Oil and gas and textile sector) from KSE-100 index. We have applied the panel data analysis such as the common effect model as well as fixed-random effect models. The Hausman test recommends the random effect model. The results suggests that age of the corporations does not have any impact on its borrowing while the economic resources measured as total assets and fixed assets ratio revealed the positive significant relation with the debt. On the basis of the analysis it might be possible to conclude that the size of the firm does matter in the decision of capital structure specifically in borrowing decisions.

Key words

Corporate debt; Corporate borrowings; Fixed-random effects.

INTRODUCTION

In recent years, a variety of principles have been suggested to describe the difference in economical debt percentages across companies. The concepts recommend that companies choose investment elements based on functions that figure out the various expenses and benefits associated with reasonable debt and value funding. Medical execute in this area has lagged behind the theoretical research, perhaps because the appropriate company functions are indicated with regards to pretty conclusion concepts that are not straight noticeable.

The primary strategy taken in past scientific execute has been to figure out regression equations with proxies serves hosts for the unobservable theoretical functions. This strategy has a variety of issues. First, there may be no unique advice of the functions we wish to figure out. There are often many possible proxies' serves for a particular operate, and scientists, losing theoretical recommendations, may be ready to choose those aspects that execute best concerning mathematical goodness-of-fit requirements, thereby biasing their show of the importance levels of their assessments. Second, it is often hard to find activities of particular functions that are irrelevant to other functions that are of interest. Thus, selected proxies serves aspects may be identifying the repercussions of several different functions. Third, since the noticed aspects are partly representations of the functions they are required to figure out, their use in regression research provides an errors-in-variable issue. Lastly, figure faults in the proxy's factors may be associated with figure faults in the dependent factors, developing unnecessary relationships even when the unobserved function being measured is unrelated to the dependent different.

Hundreds of documents examine corporate economical choices and the aspects that effect investment framework. Much theoretical perform characterizes the choice between economical debt and value in a trade-off perspective in which companies choose their maximum economical debt rate by controlling the advantages and expenditures. Typically, tax savings that occur because attention is insurance deductible have been patterned as a primary benefit of economical debt (Kraus & Litzenberger, 1973). Other advantages consist of spending professionals to operate efficiently (Jensen, 1986) and interesting lenders to observe the company (Jensen & Meckling, 1976). The expenses of reasonable debts contain reasonable stress (Scott, 1976), personal taxes (Miller, 1977), reasonable debts overhang (Myers, 1977), and organization arguments between experts and investors or among different categories of investors. For the most part, these theoretical predictions have been examined using decreased form regressions that make an effort to explain change in investment structure guidelines based on calculated hill coefficients for factors such as company size, tax position, source tangibility, success, and development options (Rajan & Zingales, 1995; Frank & Goyal, 2009; Graham et al, 1998).

Most theoretical models of debts source choice assume financial institution and personal nonbank debts are equivalent, and most previous empirical studies either exclude financial institution debts or combine it with personal non-bank debts. There are two exceptions to this in the empirical literature. Hooks and Opler (1993) considers financial institution debts separately, but studies relatively small firms that likely cannot borrow in public debts markets.

Carey, et al. (1993) consider larger firms and finds differences between financial institution and personal non-bank debts, but uses short-term debts to proxy financial institution debts, and long-term non-public debts to proxy personal non-bank d09ebts. Their choice of proxies risks confounding maturity and debts ownership effects. In contrast, Fama (1985) and Nakamura (1993) argue there are important differences between the sources.

The purpose of this research paper is to find out the factors that influences the corporate debts structure in the context of Pakistan. This paper examines the most important factors namely fixed assets ratio, leverage, long term assets, age, market to book ratio and long term debts are examines. The sample of 33 companies was taken with the time span of 9 years from 2002 to 2010. This research explores the factors of corporate borrowing that can help them for corporate borrowing structure for future decision makings.

LITERATURE REVIEW

Researchers face several concerns when they examine how tax benefits impact company reasonable policy and company value. Major among these concerns is the problems of identifying company tax prices due to data concerns and the complexness of the tax value. Other issues include quantifying the repercussions of attention taxation at the person level and understanding the person bankruptcy process and the personnel expenses of reasonable stress. In this document we mainly focus on identifying company tax benefits. We create a new evaluate of the tax benefits of reasonable debt that provides information about not just the slight tax amount but the entire tax benefit work. A company's tax operate is defined by a series of minor tax prices, with each amount corresponding to a specific stage of attention reductions. Each minor tax amount features the consequences of non-debt tax safety measures, tax-loss bring backs, bring ahead, tax breaks, the alternative minimum tax, and the possibility that attention tax safety measures will be used in a given year, based on the technique of Graham (1996).

In a related paper, Welch, and Zhu (1996) study the mix of community and private debts companies use. Although they focus on potential holdup problems created by credit from a single financial institution. Rajan (1992) also predicts the preference often bank debts related to a borrower's bargaining power with loan companies. He indicates scientific proxy servers for negotiating power might be the level of control loan companies have over a customer's providers or the level of the lender's value possession of the client, either of which are openly available. We could not think of an effective alternative evaluate so we do not analyze the effects of this feature. In Hoshi et al. (1993), the loan companies observe firm professionals to prevent unprofitable financial commitment. Managers of companies with successful financial commitment possibilities find committing in unprofitable pet tasks more costly;

thus, they do not need to be supervised and prefer community debts. Recognizing unprofitable pet tasks are more affordable for professionals of companies with unappealing financial commitment possibilities, so they require financial institution tracking to pay properly.

One conclusion from these traditional records is that there must be other reasonably large expenses of reasonable debts to justify the reasonable debts alternatives that companies create. While these traditional records are helpful, our analysis contributes by directly determining ex wage all-in expenses of reasonable debts, and by assessing a broad cross-section of companies rather than a little ex post taste. Recent research claims that thorough consideration leads to expenses of reasonable debts that approximately equivalent the slight (tax) benefits of reasonable debts in stability. For example, in Green and Hollifield's (2003) model, personal bankruptcy expenses similar to 3% of organization value, combined with a personal tax disadvantage to attention income, are sufficient to justify an interior optimal reasonable debts rate. Berk et al. (2010) determine that higher wages due to enhanced manual work risk associated with greater company create use of should be designed as a cost of reasonable debts.

Carlson and Lazrak (2006) argument that enhanced organization risk due to resource alternative produces expenses sufficient to balance out the tax benefits of reasonable debts. Our approach records these and other expenses of reasonable debts that drive observed (equilibrium) company reasonable debts alternatives. The resulting cost challenge is a positive operate of the stage of reasonable debts and its location is depending on organization features related to the theorized factors.

DATA AND METHODOLOGY

For the empirically assessment of research, we take 33 organizations from the Oil, Gas & Power sector and Textile sector. For assessment, we have taken the information from the Balance Sheet Analysis (BSA) that is released annually by Stat Bank of Pakistan.

The penal information is designed by taking the information on annually base from 2002 to 20010 with the complete period of 9 years of the 33 organizations, in which cross sectional information is organizations and time series factors are years. Six factors are taken namely Fixed Assets Ratio (FAR), Long Term Debt (LTD), Market to Book Ratio (MTBR), Total Assets (TA) and Age of the organization. We have taken the log of the long term debts and total assets. These factors are measured for each organization for each season. Then the descriptive statistics is used to check the normality of the information (Table 1). Then the regression method is applied by placing long term debt as a dependent variable and all other variables i.e. Fixed

assets ratio, market to book ratio, total assets and age as independent variable. The following regression model is used:

$$y_i = \beta_0 + \beta_1 x_1 + \cdots\cdots\cdots \beta_n x_n + \varepsilon_n(i) \quad (1)$$

Long term debts and total assets are in million rupees, market to book ratio is calculated by minus the total assets from book value of equity plus market value of equity dividing total assets. Leverage is measured by dividing long term debts and total assets. Fixed assets divided by total assets are fixed asset ratio. Age is the period of time after the season of founded.

In this document we also analyze the Heteroskedasticity and discovered very powerful proof of it. According to Guajarati (1999) if the Heteroskedasticity was discovered then use the Robust Slandered Error system for the treatment of this issue. Then we used the Fixed Effect Model and Random Effect Model. The following fixed effect and random effect model is used.

$$y_{it} = \beta_1 x_{it} + \alpha_i + \mu_{it} \quad (2)$$

$$Y_{it} = \beta_0 + \beta_1 X_{1,it} + \ldots + \beta_k X_{k,it} + y_2 E_2 + \ldots + y_n E_n \mu_{it}. \quad (3)$$

Here equation (2) and equation (3) are modeled as the fixed and random effect where:

- αi (i=1….n) is the unknown intercept for each entity (n entity-specific intercepts).
- Yit is the dependent variable (DV) where i = entity and t = time.
- Xit represents one independent variable (IV),
- En is the entity n. Since they are binary (dummies) you have n-1 entities included in the model.
- γ2 Is the coefficient for the binary repressors (entities)
- β1 is the coefficient for that (IV),
- $\mu_{it}$is the error term

Hausman test is used to decide whether which model is best between fixed and random effect models. Where, the null hypothesis is that the random effect model is best or preferred. Basically, Hausman test check the unique error (μ_i) is correlated with the regressor or not, if or not then its means our alternative hypothesis is accepted that is fixed model is best.

EMPIRICAL RESULTS

The descriptive statistic test describes the normality of the data. If we see Table 1, the skewness of all the variables are positive except the variable long term debts, which point out that large negative returns equal to minimum extreme value are large then the higher positive returns i.e. maximum extreme value and the Skewness of the long term debts.

TABLE 1. DESCRIPTIVE STATISTICS

	LEV	FAR	AGE	LTA	LTD	MTB
Mean	0.2652	0.9677	25.8636	7.6667	5.1419	0.8130
Median	0.1804	0.9447	18.0000	6.9194	5.4295	0.7253
Maximum	2.6970	2.1280	96.0000	34.0000	10.0839	3.9957
Minimum	0.0000	0.0000	1.00000	2.6810	-0.6931	0.0314
Std. Dev.	0.2945	0.3284	18.8141	2.5570	2.6565	0.4859
Skewness	2.8236	0.4185	1.60339	4.2466	-0.4081	3.1564
Kurtosis	19.5634	4.3910	5.69486	43.7636	2.6745	17.4319

Kurtosis is positive for the all the variables which indicates that the companies are leptokurtic distributed indicating higher peaks then expected from normal distribution. Then the correlation test was used to test our hypothesis. As our first hypothesis states that there is a positive association that links leverage and fixed asset ratio. Therefore to judge the association between these two constructs correlation was used. Correlation tells us about the relationship either it is positive, negative or if there is no relationship (Table 2).

TABLE 2. CORRELATION MATRIX

	LEV	FAR	AGE	LTA	LTD	MTB
LEV	1.0000	0.4223	-0.1490	-0.1723	0.3876	0.5944
FAR		1.0000	-0.0580	-0.2224	0.1155	0.4068
AGE			1.0000	0.2627	0.0441	0.0125
LTA				1.0000	0.3910	-0.2831
LTD					1.0000	0.0171
MTB						1.0000

The Correlation between fixed asset ratio and leverage is 0.422 which is positive and significant. In other words we can say that there is moderating relationship between fixed asset and leverage. Moreover it is also indicated by correlation results that these are significant at a level of 0.01. Leverage has negative and weak relationship with age and long term assets and relationship with long term debts and market to book ratio is positive moderating. Fixed assets ratio has a negative and weak relation with age and long term assets and positive moderating relationship with market to book ratio. Age has a positive and weak relationship with long term assets, long term debts and market to book ratio. While the relation of long term assets with long term debts are positive and moderating and relationship with market to book ratio is weak negative. Long term debts have positive and weak relationship with market to book ratio.

After detailed description of the data now, for the purpose of analysis we firstly apply the ordinary least square regression followed by heteroskadasticity test. Than we further apply the fixed and random effect models to our data. As these models

are recommended when there are variables which vary over time. The fixed effect model is useful when someone want to explore the relationship between predictor and outcome variables within and entity; it might be a country or company. We also applied the random effect model in our analysis; the rationale behind using this model was that the variations across cross sections are assumed to be random and uncorrelated with the independent variables, as this was not in case of fixed effect model. Finally, we apply the Hausman test to decide between fixed and random effect. The null hypothesis states that the co-efficient of the random effect models are consistent while the alternate hypothesis says the fixed effect model is good.

TABLE 3. ORDINARY LEAST SQUARE REGRESSION

Long Term Debts	Coefficient	t-Value
Age	0.0031501	0.43
Fixed Asset ratio	0.5129353	1.15
Leverage	5.179025	9.07
Long Term Assets	0.4508085	8.19
Market to Book ratio	-1.243117	-3.55
Constant	0.7446759	1.13

F(5, 258) = 33.92, Prob>F = 0.0000,
R squared = 0.3967, Adj. R-squared = 0.3850

After the correlation test we applied the regression test (Table 3) by putting the long term debt as dependent variable and all other variable as independent variables. The result shows that the coefficient of the age and fixed asset ratio is 0.003150 and 0.512935 respectively, and t-stat of both shows positive insignificant relation with the long term debts. Its mean corporate debts structure has no impact of age and fixed assets ratios. It also proves the significant and positive relationship with the leverage and long term assets. As the coefficient of the leverage and long term assets is 5.17 and 0.44 respectively. But relationship with the market to book ratio is significant with the negative sign. Its means that leverage and long term debts have impact on the corporate debts structure in a positive sense and negative impact of the market to book ratio on long term debts. If we see the R-square its give use the value of 0.3966 its means the variation of the dependent variable around its mean is just 39.66% which is not good enough.

HETEROSKEDASTICITY TEST

Breusch-Pagan / Cook-Weisberg test for Heteroskedasticity	
Chi2 (1) = 162.49	Prob > chi2 = 0.0000

Ho: Constant Variance
Variables: Fitted values of long term debts

By moving forward we test the data for heteroskedasticity and found evidence of heteroskedasticity in the data as the probability is less than 0.05 it is (0.0000) which signifies that there is heteroskedasticity in the data. We test the heteroskedasticity in our data and found the strong evidence of it (see table 04). The value of probability is less than 0.5 then its mean that significant heteroskedasticityis present in the data.

According to Gujarati (1999) if in our data the problem of heteroskedasticity is available then use the robust standard error method to avoid that problem.

After that we applied the fixed effect model. Table 5 reports the results of the fixed effect model, similar to the ordinary least square results here. The F-statistics lies between its significance level as it shows that the co-efficient differs significantly from zero, and the overall R^2 like between and within does confirm the goodness of fit of the model. When we test the fixed effect model it shows that there is insignificant and negative relationship between long term debts and age with the coefficient value -0.06199. Coefficient of fixed asset ratio is -0.7539 with t-stat value of -1.65 which is negative and insignificant. Leverage and long term asset have positive and significant relationship with dependent variable long term debts with the coefficient value of 4.70 and 0.129 respectively with t-stat value of 2.23 and 1.99 which shows significant impact on the corporate debts. Market to book ratio has positive but insignificant relationship with long term debts. Age factor has no impact on the corporate borrowing but leverage and long term assets have positive impact.

TABLE 5. FIXED EFFECT MODEL

Long Term Debts	Coefficient	Robust Stq. Error	t-Value
Age	-0.0619973	0.0454097	-1.37
Fixed Asset ratio	-0.7539181	0.4598461	-1.64
Leverage	4.704668	2.106381	2.23
Long Term Assets	0.1290081	0.0649097	1.99
Market to Book ratio	0.0773178	0.4117673	0.19
Constant	5.175041	1.396324	3.71

Rsq: within = 0.2381
between = 0.0685
overall = 0.1032

F(5,226) = 3.77
Prob > F = 0.0027

The value of R-squared is 0.6841 its means that variation of the dependent variable around its mean is just 68.41% which is quite significant.

TABLE 6. RANDOM EFFECT MODE

Long Term Debts	Coefficient	Robust Stq. Error	t-Value
Age	0.0045068	0.0193568	0.23
Fixed Asset ratio	-0.3912481	0.544304	-0.72
Leverage	4.841856	1.648516	2.94
Long Term Assets	0.2403326	0.149663	1.61
Market to Book ratio	-0.6550792	0.3748799	-1.75
Constant	2.809613	1.439427	1.95

R-sq: within = 0.2100
between = 0.4881
overall = 0.3525

Wald chi2(6) = 617.88
Prob > chi2 = 0.0000

Table 6 describes the random effect model. This model shows that the coefficient of age is 0.0045 with the z-stat 0.23 which means that variable age is positively

insignificant with the dependent variable long term debts. Fixed asset ratio coefficient is -0.3912 with z-stat -0.72 which is also insignificant with negative values. Leverage is positively significant with the long term debts as the z-stat value is 2.94 with the coefficient value of 4.8418. The coefficient values of long term assets and market to book ratio is 0.2403 and -0.6550 with the z-stat values of 1.61 and -1.75 which indicates that both the independent variable has insignificant relationship with dependent variable 5% level of significance but at 1% level of significance both are significantly related to the dependent variable with positive and negative signs.

TABLE 7. HAUSMAN TEST

	Coefficient (b) fe	(B) re	Difference ((b-B)	Sqrt (diag(V_b-V_B)) S.E>
Age	-0.619973	0.0045068	-0.0665041	0.410774
Fixed Asset ratio	-0.7539181	-0.3912481	-0.3626699	0.0000
Leverage	4.704668	4.841856	-0.1371887	1.311197
Long Term Assets	0.1290081	0.2403326	-0.1112345	0.0000
Market to Book ratio	0.0773178	-0.6550792	0.732397	0.1703447

Test: Ho: Difference in coefficients not systematic
Chi2(5) = (b-B) ' [(V_b-V_B)^(-1)] (b-B)
Chi2 (5) = 3.15
Prob>chi2 = 0.6773
(V_b-V_B is not positive definite)

Finally, Table 7 presents the results of the Hausman test. As known, the Hausman test tells us the choice of the fixed and random effect models. As in our data the Hausman test reports that the random effect model is better than fixed effect model because the p-value > 0.05 as shown in table-6 it is (0.6773). The Hausman test basically tells us whether the unique errors (*ui*) are correlated with the regressors, the null hypothesis is they are not. In the analysis, the Hausman test reports that the random effect models provide consistent and efficient estimates.

CONCLUSION

This paper examines the factors that determined the corporate debts structure. Primarily our focus was on investigating different types of firm's indicators like profitability, size, age, fixed assets ratio and market to book ratio that may affect and force the corporations to borrow. For that purpose we have selected the two most important sectors of Pakistan i.e. oil, and gas and textile. In this empirical study, we have used the panel data analysis like fixed effect model and random effect model. The findings of the study reveals that fixed assets ratio shows the negative impact on debt while on the other hand total assets shows the positive impact. Leverage also shows the positive relationship with the debt whereas market to book ratio shows negative relationship with the corporate borrowings. Age of the corporations does not showed any kind of statistically significant relationship with the debt. Hence, it might be possible to conclude on the basis of our empirical findings that the firms which have higher fixed assets ratios uses less debts and rely only on their own

resources. The total assets of the firms does affect the corporate borrowings, however there may be possibility that the corporations included so many other type of assets other than fixed. In addition, these assets only represent and fulfill the liquidity requirements of the organizations. If we observe the leverage it obviously shows the positive relationship while higher market to book ratios leads towards lower borrowings. In the analysis, we found that the number of years of corporations since its inception does not affect the decisions of borrowing. One can conclude that the age of the firm is not an indicator of corporate borrowings. The other indicators described earlier may also be taken as the determinants of corporate debt in Pakistan. The macroeconomic conditions in Pakistan are highly volatile, and these conditions have major influence on the financial as well as manufacturing and industrial sectors of the country.

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