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LETTER FROM THE EDITOR

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The manuscripts contained in this volume have been double blind refereed. The acceptance rate for manuscripts in this issue, 25%, conforms to our editorial policies.

Our editorial policy is to foster a supportive, mentoring effort on the part of the referees which will result in encouraging and supporting writers. We welcome different viewpoints because in differences we find learning; in differences we develop understanding; in differences we gain knowledge and in differences we develop the discipline into a more comprehensive, less esoteric, and dynamic metier.

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ANALYZING BILATERAL CURRENCY EXCHANGE RATES IN PREDICTING ECONOMIC OUTPUT

Benjamin B. Boozer Jr., Jacksonville State University
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ABSTRACT

The purpose of this paper is to analyze if currency exchange rates are valid predictors of economic output or GDP. Previous research finds a correlation between exchange rate volatility and economic openness of a country's import market that we consider with price levels in making this analysis. Higher free trade integration is associated with lower volatility, but price levels for products are a function of the firm's expectations that exchange rate movements are permanent rather than transitory. Using changes in currency exchange rates, changes in consumer price index (CPI), changes in Balance of Current Account (BCA), and changes in the share of imports into a country as a percent of that country's GDP in Canada, Japan, Sweden, and the U.S., we analyze the effect of these variables on the level of GDP. Annual data for the period 1975-2004 were collected from the Federal Reserve Board and United Nations for the sample. After creating a sample design that shows no direct significant difference in exchange rate - GDP movement, the study concludes that statistically significant regressions for CPI and imports merit further research of those two variables in exploring indirect linkages between exchange rates and GDP.

INTRODUCTION

This paper examines correlations between currency exchange rates and economic output in a country. Economic output is illustrated through Gross Domestic Product (GDP). Currency exchange relationships are explored between the United States and the following countries: Canada, Japan, and Sweden. The focus of the analysis is to what extent currency exchange rates and economic output, as measured by Gross Domestic Product (GDP), correlate either positively or negatively. If a country's currency appreciates relative to another country's currency, bilateral trade between each country finds prices cheaper in the country with the weaker currency relative to the country with the stronger currency. Thus, imports into the country with the weaker currency are less expensive and more desirable, while exports from that country are more expensive and less desirable to consumers in the country with weaker currency (Taylor, 2001).

With the relative strength of a country's currency affecting importation and exportation of goods and services and market equilibrium adjustments providing needed flexibility (Kim, 1991), the extent that relative changes in currency exchange rates impact production within a country is a

basis for this analysis. Relatively lower currency exchange rates that are favorable to exportation benefit producers of those goods and services that are exported, while relatively higher currency exchange rates benefit consumers of imported goods by stretching buying power. Prior research focuses heavily on exchange rate volatility as a dynamic explaining international transaction (Obstfeld & Rogoff, 1995). To the extent that international trade between the domestic and foreign country affects monetary policy, currency exchange rates are expected to correlate with macroeconomic policy goals that affect GDP.

This analysis considers the relative exchange rate relationship between the U.S. dollar and each currency of the four countries listed above. Examining if a statistically significant relationship exists between currency exchange rates and GDP involves considering the relative strength of two currencies over a period of years and measuring differences between changes in the two variables. This paper examines changes in annual current account balances, volatility of exchange rates vis-à-vis annual changes in the value of each country's currency relative to the U.S. dollar, annual changes in consumer prices, and economic openness of each country's markets in analyzing this relationship.

LITERATURE REVIEW

A theoretical basis for analyzing the relationship between currency exchange rates and GDP extends from several studies of currency exchange rates and their impact on bilateral trade and macroeconomic policies. Krugman, Baldwin, Bosworth, and Hooper (1987) logically examine the effects of currency exchange rates on international trade. Currency exchange rates that promote lower prices for imports lessen inflationary pressures in the economy and have a downward push on interest rates in that country. Conversely, currency exchange rates that make importation relatively more expensive (i.e. a depreciating currency) produce inflationary pressures and have an upward push on interest rates in the country with a depreciating currency. Exports experience opposite effects. A stronger currency that makes importation of goods and services relatively cheaper and thus more attractive makes exportation relatively less attractive. Exports from a country where the currency is relatively weak to a country where the currency is relatively strong are more attractive to consumers in the importing country (Mann, 2002).

The argument in studying a correlation rests on a premise that economic openness, which is a measure of the degree that free trade policy are encouraged, and real exchange rate volatility are inversely related. Higher degrees of trade integration are associated with more stable exchange rates and lower degrees of integration more volatility (Hau, 2002, pp. 611-612). That this phenomenon varies across countries is cause for investigation. Weak associations between exchange rate volatility and the volume of international trade exist, where volatility is representative of market inefficiencies (Kenen & Rodrik, 1986, p. 312; Koray & Lastrapes, 1989, p. 708). Nevertheless, exchange rate dynamics remain elusive (Evans, 2002; Dewenter, 1995).

Flexible pricing of goods entering a country does not necessarily produce optimal exchange rates. Sticky prices that fail to adjust have monetary and fiscal policy implications (Obstfeld & Rogoff, 1995). But "openness puts a check on the government's incentive to engage in unanticipated inflation, because of induced exchange rate depreciation" (Terra, 1998, p. 641). The conditions under which movements in exchange rates produce higher welfare within a country are a function of price stickiness and risk sharing with long run and short run differences (Engel, 2001, p. 518). The implication is the extent that the import and export market exists and are allowed to flourish with an economy, the greater the effect of market forces in finding exchange rate equilibrium and the less likely firms will need to make short term pricing adjustments (Hau, 2002). "Firms respond with less of a price change to expected transitory real exchange rate movements than to expected permanent exchange rate movements" (Feinberg & Kaplan, 1992, p. 269), implying that for firms nominal changes in exchange rates have less of an effect on profit margins and pricing by domestic producers.

Terra's (1998) findings of an inverse relationship between economic openness and price levels offers important justification in utilizing changes in exchange rates to predict GDP. Not only are price levels important in examining expected movements in exchange rates, but also associations between the viability of a country's export market and GDP. An open economy and freely floating exchange rates assume predictable changes in output and inflation. Taylor (2001, p. 266) finds that such associations occur with a lag, however. That is an appreciation or depreciation of currency does not produce immediate results but rather increases the probability that monetary policy changes will occur as a result of these expectations (Feinberg & Kaplan, 1992, p. 267).

METHODOLOGY

The data for the sample were collected from the Federal Reserve Bank - St. Louis division (<http://research.stlouisfed.org/fred2/>) and United Nations statistical database (http://unstats.un.org/unsd/cdb/cdb_dict_xrxx.asp?def_code=63). The sample includes annual data for each variable coded as an absolute change in that variable. All variables in the model (with the exception of CPI data for 1975, 1976, and 1977 in Japan) were gathered for 1975-2004, inclusive, for a total of 30 observations.

Prior studies of currency exchange rates have focused on volatility and openness of the economy within a country. Considering each of these issues does not directly link to using exchange rates as a predictor of GDP, but offers a necessary indirect association for finding a correlation. While movements in exchange rates are considered in studies of macroeconomic principles (Taylor & Taylor, 2004; Dewenter, 1995), a dearth of research considers correlations between a country's economic output and movements of its exchange rate in search of market equilibrium. The model for this research considers four countries with which trading histories are well established and currency markets are well developed. Focusing on annual changes with the 30 years of the analysis,

correlations between the variables are considered in measuring statistically significant correlations by using Pearson R. With Taylor (2001) finding exchange rate movements as a lagging indicator of changes in output the model compares concurrent changes in GDP with changes in GDP one year after changes in exchange rates. Comparisons are made to changes in GDP one year before changes in currency. Both future changes in GDP, as Taylor (2001) predicts, and laggard changes in GDP before changes in exchange rates are analyzed in this study.

Variables are chosen from studies by examining exchange rate studies conducted by Hau (2002), Mann (2002), and Terra (1998). Using the Pearson R, bivariate correlations between all variables in the model are measured for statistical significance at both .01 and .05 levels. Variables that are statistically significant with each other indicate an inverse correlation. Using multiple regression analysis those variables that are found to have a bivariate, statistical significance are analyzed in measuring a direct correlation between each independent variable and dependent variable.

If changes in GDP are not a function of changes in currency exchange rates, changes in GDP should be equal. The hypothesis for this study states that in comparing countries, those countries that experience greater changes in currency exchange rates also experience greater changes in levels of GDP one year after such changes in exchange rates. This two-tailed examination is stated as a research hypothesis (H1) such that changes in a country's GDP will not be affected by changes in currency exchange rates, or $\Delta\text{GDP} = \Delta\text{currency}$.

MODEL FORMULATION

Based on the review of the literature and the focus of this study to explore correlations between changes in currency exchange rates and changes in a country's GDP, the model is created as follows. Variables used in the model include currency exchange rates for the following countries from 1975 to 2004: Canadian Dollar (Canada), Japanese Yen (Japan), and Swedish Kroner (Sweden). The currency of each country is measured in terms of U.S. dollars. The currency exchange rate is measured as a ratio of the respective currency to the U.S. dollar and is an independent variable in analyzing changes in GDP in each of the respective countries. The variable is expressed as the change (expressed as Δ) in Canadian \$ to U.S. \$, Δ Japan Yen to U.S. \$, and Δ Swedish Kroner to U.S. \$, respectively, in measuring changes in currency exchange rates for Canada, Japan, and Sweden.

Other independent variables for each country in the model are annual changes in consumer prices, as measured through a Consumer Price Index (CPI); a measure of changes in import share of GDP in analyzing openness of trade markets; and changes in balances on the current account (BCA) for each country.

Changes in current account balances are expressed as increases or decreases in surplus or deficit based on the sign of the variable. A negative sign in the dataset indicates decreases in a

current account surplus or increases in a current account deficit between two years; a positive sign indicates increases in the current account surplus or decreases in the current account deficit. The variables are listed as Δ Annual BCA for each of the countries, respectively.

GDP is the dependent variable in the model and changes are measured annually for Canada, Japan, Sweden, and the U.S. These variables are listed as Δ GDP (Canada), Δ GDP (Japan), Δ GDP (Sweden), and Δ GDP (U.S.), respectively. Analyzing changes in annual levels of GDP from the application of independent variables, the model seeks to answer to what extent the application of independent variables explains variability of a country's GDP. All annual changes for each independent and dependent variable are measured not as a percentage, but rather in absolute terms.

RESEARCH FINDINGS AND ANALYSES

Descriptive statistics for the respective variables for each country - Canada, Japan, Sweden, and the U.S. - are included in the model before considering leading or lagging effects of currency exchange changes. These statistics are an illustration of a concurrent measure of change for all variables associated with changes in exchange rates. Exchange rate data for the U.S. are omitted in that the currencies of each of the other countries are measured relative to the U.S. dollar, which represents the reserve currency in the model.

Table 1 shows descriptive statistics for each variable in the model before analyzing correlations when controlling for the other variables in Table 2, 3, and 4, everything else held constant. Tables 2, 3, and 4 present output for the regression analysis from those variables identified in Table 1.

Table 1: Descriptive Statistics for Country Concurrent With Exchange Rates			
Variable	N	Mean	Std. Deviation
CANADA			
Δ CPI	30	2.750	1.260
Δ BCA	30	857,564,667	6,663,246,513
Δ Canadian \$ to US\$	30	.008	.076
Δ GDP - Canada	30	16,149,929,320	11,822,959,766
Δ Imports to GDP	30	.047	.065
JAPAN			
Δ CPI	30	1.630	1.890
Δ BCA	27	5,968,481,481	22,157,321,371
Δ Japan Yen to US\$	30	-6.550	22.400
Δ GDP	30	64,568,750,360	47,862,482,309

Table 1: Descriptive Statistics for Country Concurrent With Exchange Rates			
Variable	N	Mean	Std. Deviation
Δ Imports to GDP	30	.047	.113
SWEDEN			
Δ CPI	30	2.860	1.850
Δ BCA	30	933,811,600	3,093,661,594
Δ Kronor to US\$	30	.084	.904
Δ GDP	30	4,874,624,326	4,275,527,333
Δ Imports to GDP.	30	.047	.115
UNITED STATES			
Δ CPI	30	2.700	.986
Δ BCA	30	-22,232,933,333	46,471,781,432
Δ GDP	30	174,620,105,833	107,355,527,132
Δ Imports to GDP.	30	.061	.070

Table 2 presents standardized coefficients of multiple regression results using annual changes in GDP in Canada, Japan, Sweden, and U.S. as the dependent variables and all other variables for currency exchange rates, consumer prices, and BCA as independent variables in separate analyses from each country. Values for the U.S. include changes in each of the three currencies, since each is measured relative to the U.S. dollar and the U.S. dollar is the reserve currency. Adjusted R-square for each output is listed below the independent variables.

In Table 3 the results of changes in annual levels of GDP for each country in the model are analyzed by applying changes in currency exchange rates one year prior to the change in level of GDP recorded. Standardized coefficients of multiple regression results using changes in GDP in Canada, Japan, Sweden, and U.S. as the dependent variables and all other variables for currency exchange rates, consumer prices, and BCA as independent variables in separate analyses from each country. Changes in currency exchange rates are applied one year prior to changes in GDP. Values for U.S. include changes in each of the three currencies, since each is measured relative to the U.S. dollar and the U.S. dollar is the reserve currency. Adjusted R-square is indicated below each output.

In Table 4 consideration of currency exchange rates as a lagging predictor of changes in GDP is presented. Standardized coefficients of multiple regression results using changes GDP in Canada, Japan, Sweden, and U.S. as the dependent variables and all other variables for currency exchange rates, consumer prices, and BCA as independent variables in separate analyses from each country. Changes in currency exchange rates are applied one year after changes in GDP. Values for U.S. include changes in each of the three currencies, since each is measured relative to the U.S. dollar and the U.S. dollar is the reserve currency. Adjusted R-square is indicated below each output.

Table 2: Multiple Regression Output Measuring Current Relationships Between Independent Variables and GDP			
Country	Standardized Coefficients	t	Significance level
CANADA			
(Constant)		5.939	.000**
Δ Canadian \$ to US\$	-.134	-.850	.403
Δ Annual BCA - Canada	.093	.603	.552
Δ Annual CPI - Canada	-.575	-3.703	.001**
Δ Annual Imports to GDP - Canada	.265	1.665	.108
Adjusted R-square = .354			
JAPAN			
(Constant)		3.765	.001**
Δ Japan Yen to US\$	-.059	-.298	.769
Δ Annual BCA - Japan	-.179	-.855	.402
Δ Annual CPI - Japan	.250	1.345	.192
Δ Annual imports to GDP - Japan	.331	1.670	.109
Adjusted R-square = .108			
SWEDEN			
(Constant)		5.165	.000**
Δ Swedish Kronor to US \$	-.134	-.564	.578
Δ Annual BCA - Sweden	.056	.315	.755
Δ Annual CPI - Sweden	-.507	-3.114	.005**
Δ Annual imports to GDP - Sweden	.192	.847	.405
Adjusted R-square = .311			
U.S.			
(Constant)		4.923	.000**
Δ Swedish Kronor to US \$	.010	.055	.956
Δ Canadian \$ to US \$	-.102	-.628	.536
Δ Japan Yen to US\$	.120	.778	.444
Δ Annual BCA - US	-.378	-2.462	.022*
Δ Annual CPI - US	-.429	-2.671	.014*
Δ Annual imports to GDP - US	.387	2.618	.015*
Adjusted R-square = .556			
*indicates significance at alpha = .05			
**indicates significance at alpha = .01			

Table 3: Multiple Regression Output With Changes In Exchange Rates Applied One Year Prior To Changes In GDP			
Country	Standardized Coefficients	t	Significance level
CANADA			
(Constant)		5.72	.000**
Δ Canadian \$ to US\$	-.246	-1.56	.131
Δ Annual BCA - Canada	.154	.976	.339
Δ Annual CPI - Canada	-.520	-3.44	.002**
Δ Annual Imports to GDP - Canada	.382	2.36	.027*
Adjusted R-square= .384			
JAPAN			
(Constant)		3.570	.002**
Δ Japan Yen to US\$	-.080	-.403	.691
Δ Annual BCA - Japan	-.208	-.970	.343
Δ Annual CPI - Japan	.272	1.418	.171
Δ Annual imports to GDP - Japan	.306	1.443	.164
Adjusted R-square = .111			
SWEDEN			
(Constant)		5.315	.000**
Δ Swedish Kronor to US \$	-.116	-.665	.513
Δ Annual BCA - Sweden	.043	.246	.808
Δ Annual CPI - Sweden	-.475	-2.864	.009**
Δ Annual imports to GDP - Sweden	.265	1.603	.122
Adjusted R-square = .258			
U.S.			
(Constant)		5.319	.000**
Δ Annual BCA - US	-.339	-2.093	.048*
Δ Annual CPI - US	-.508	-2.995	.007**
Δ Annual imports to GDP - US	.410	2.673	.014*
Δ Swedish Kronor to US \$	-.138	-.768	.450
Δ Canadian \$ to US \$	.233	1.385	.180
Δ Japan Yen to US\$	.326	2.102	.047*
Adjusted R-square = .526			
*indicates significance at alpha = .05			
**indicates significance at alpha = .01			

**Table 4: Multiple Regression Output With Changes In Exchange Rates Applied
One Year After Changes In GDP**

	Standardized Coefficients	t	Significance level
CANADA			
(Constant)		5.520	.000**
Δ Canadian \$ to US\$	.036	.219	.829
Δ Annual BCA - Canada	.096	.584	.565
Δ Annual Imports to GDP - Canada	-.540	-3.404	.002**
Δ Annual CPI - Canada	.335	2.082	.048*
Adjusted R-square = .351			
JAPAN			
(Constant)		3.629	.001**
Δ Japan Yen to US\$	-.316	-1.662	.111
Δ Annual BCA - Japan	-.205	-1.084	.290
Δ Annual CPI - Japan	.315	1.751	.094
Δ Annual imports to GDP - Japan	.212	1.060	.300
Adjusted R-square = .204			
SWEDEN			
(Constant)		5.076	.000**
Δ Swedish Kronor to US \$	.195	1.036	.310
Δ Annual BCA - Sweden	.124	.782	.442
Δ Annual CPI - Sweden	-.486	-3.039	.006**
Δ Annual imports to GDP - Sweden	.389	2.064	.050*
Adjusted R-square = .330			
U.S.			
(Constant)		5.021	.000**
Δ Swedish Kronor to US \$	.036	.204	.840
Δ Canadian \$ to US \$	-.191	-1.100	.283
Δ Japan Yen to US\$	-.167	-1.073	.295
Δ Annual BCA - US	-.374	-2.236	.036*
Δ Annual CPI - US	-.429	-2.657	.014*
Δ Annual imports to GDP - US	.277	1.783	.088
Adjusted R-square = .494			
*indicates significance at alpha = .05			
**indicates significance at alpha = .01			

Bivariate correlations find that changes in imports relative to GDP are universally statistically significant with changes in GDP, where such correlation exists. Changes in CPI and changes in BCA were inversely correlated with changes in GDP. For currency exchange rates, the only correlation that existed was between changes in the value of the Kronor relative to the U.S. dollar and the ratio of changes in imports into Sweden and GDP.

When currency exchange rates were analyzed by considering the effects of their movement as a leading and a lagging indicator of changes in GDP, the results were highly statistically insignificant. Applying the multiple effects of each independent variable to changes in GDP found that changes in CPI remain a strong predictor of a country's GDP, with increases in the former associated with decreases in the latter. For the U.S. annual changes in BCA were negatively correlated with GDP, while imports as a percentage of GDP positively correlated. This association remains when considering exchange rates one year before or one year after changes in GDP. For each output in the model low coefficients of determination, or R-square, indicate that the variables in the model are not responsible for most of the changes in GDP.

Interestingly, change in the value of the Japanese Yen to the U.S. dollar is significant in predicting GDP in the U.S. one year after changes in exchange rates; this association is positive. That this association does not exist when exchange rates are considered as a lagging indicator suggests that Hau's (2002) analysis linking trade integration and exchange rate volatility deserves consideration when applied across countries.

With changes in currency exchange rates within each country in the model failing tests of statistical significance in predicting changes in that country's GDP, the model accepts the null hypothesis that changes in a country's GDP will not be affected by changes in currency exchange rates, or $\Delta \text{GDP} = \Delta \text{currency}$.

SUGGESTIONS FOR FUTURE RESEARCH

While a higher level of imports reflects an appreciating currency, an appreciating currency reduces inflationary pressures. Perhaps further study of price stickiness that Engel (2001) surmised holds part of the answer to exchange rate movements. Including additional variables in the model that address price levels and importation is an important step in explaining exchange rate - GDP associations.

CONCLUSION

This paper examines whether changes in currency exchange rates in a country are valid predictors of GDP. With relatively few prior studies on which to base a model of direct correlations between exchange rates and the economic output within a country this study borrowed from patterns of exchange rate volatility that Kenen and Rodrik (1986) analyze and openness of import markets

that Terra (1998) closely links to protectionists patterns affecting exchange rates through price levels, which in turn affects GDP. Using 30 annual observations of changes in a country's GDP, changes in currency exchange rates, changes in price levels, changes in BCA, and changes in the quantity of imports as a percent of GDP, the model fails to identify a relationship between currency exchange rates and GDP, but finds associations that merit further attention. Change in CPI consistently inversely correlates with GDP, while change in imports as a share of GDP are positively related, supporting Feinberg and Kaplan's (1992) assertion that transitory exchange rate movements are less important to pricing levels than real exchange rate movements. A positive, statistically significant correlation between imports as a percent of GDP and greater GDP change is not surprising. What is surprising is that those countries that have experienced a statistically significant association between import ratios to GDP often experience similar inverse associations between CPI and GDP.

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SMALL BUSINESS LENDING ENVIRONMENT IN EMERGING ECONOMIES: A COMPARISON OF BRAZIL AND RUSSIA

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ABSTRACT

A favorable political and economic environment for small business development is one of the aspects of successful economic growth. This includes the degree of ease or difficulty in starting and operating a small business, access to capital, protection of property rights and assistance from governmental institutions.

This paper gives an overview and comparison of the small business lending environment and credit granting practices in Brazil and Russia. Different approaches to defining small businesses, laws and regulations, and specific small business lending practices in these two countries are reviewed and compared. The comparison of the credit granting practices concentrates on the financial institutions and programs regulated by the federal governments of Brazil and Russia. The small business lending policies developed by the U.S. Small Business Administration are used as a reference for comparison.

INTRODUCTION

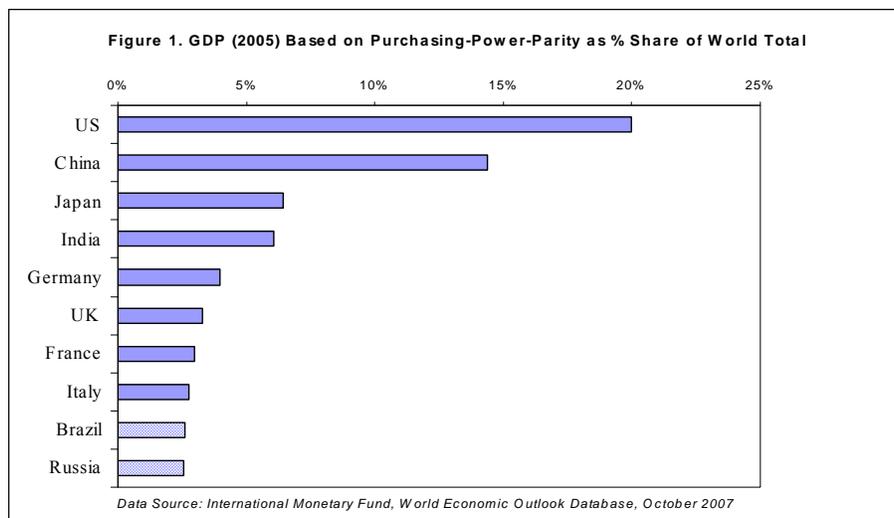
Over the next 50 years, the economies of Brazil, Russia, India and China (BRIC) have a potential to become a leading force in the global economy, according to the Economic Research report presented in 2003 by Goldman Sachs. While India and China can become the dominant global suppliers of the manufactured goods, Brazil and Russia can develop into the dominant global suppliers of natural resources and raw materials. However, this development is possible only if BRIC countries maintain and support policies conducive to growth and economic development (O'Neill, 2003 and Cheng, et al, 2007). The creation and development of small and medium size enterprises (SME) is one of the main elements of successful economic development. It in turn requires access to borrowed capital for start-up and growth. This paper gives an overview of the small business lending environment in two of the BRIC countries, Brazil and Russia, and compares the recent trends in business credit granting practices. Due to the variations in lending policies in commercial lending across the countries and regions, this review concentrates on the credit granting practices to SME by the government sponsored financial institutions in Brazil and Russia. The U.S.

Small Business Administration (SBA) lending policies and credit granting practices were used for comparison purposes in this review.

WHY BRAZIL AND RUSSIA?

Despite vastly different geo-political, economic, historical and cultural backgrounds, Brazil and Russia have similarities in some aspects of their recent economic development. Both countries were isolated from the rest of the world in the course of several decades in the 20th century. During the last two decades both Russia and Brazil went through political unrest, periods of high inflation and economic decline. The political changes in both countries in the mid-1980s eventually led to economic reforms (White, 2005). Presently, both Brazil's and Russia's economies are on the path of recovery and growth. The International Monetary Fund (IMF) ranks the economies of Brazil and Russia as the world's 9th and 10th largest (Figure 1).

According to the 2007 *Doing Business Survey* conducted by the World Bank, Russia ranks 112th and Brazil ranks 113th on ease of doing business out of 178 countries included in the survey. The United States is ranked 3rd, after Singapore and New Zealand. This ranking is a simple average of the percentile rankings on each of the ten topics which include the ease of starting and closing a business, getting business credit, dealing with licenses, employing workers, protecting investors, registering property, enforcing contracts, and trading across the borders.

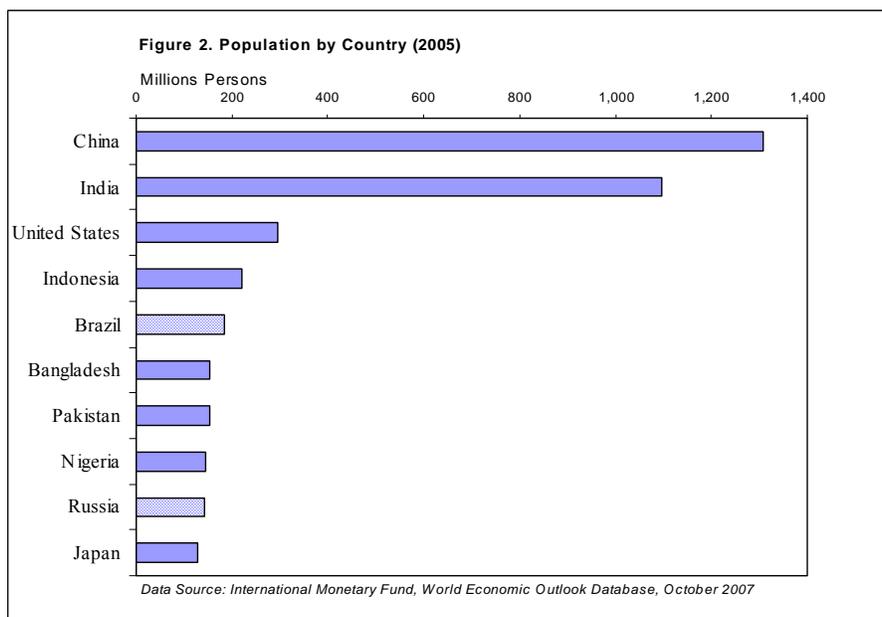


Some of these rankings will be discussed in more detail throughout this paper. Such proximity in overall “ease of doing business” rankings for Brazil and Russia suggests that there is a basis for comparison of the small business lending and credit granting practices in these two countries.

BRAZIL AND RUSSIA: ECONOMIC AND DEMOGRAPHIC DATA

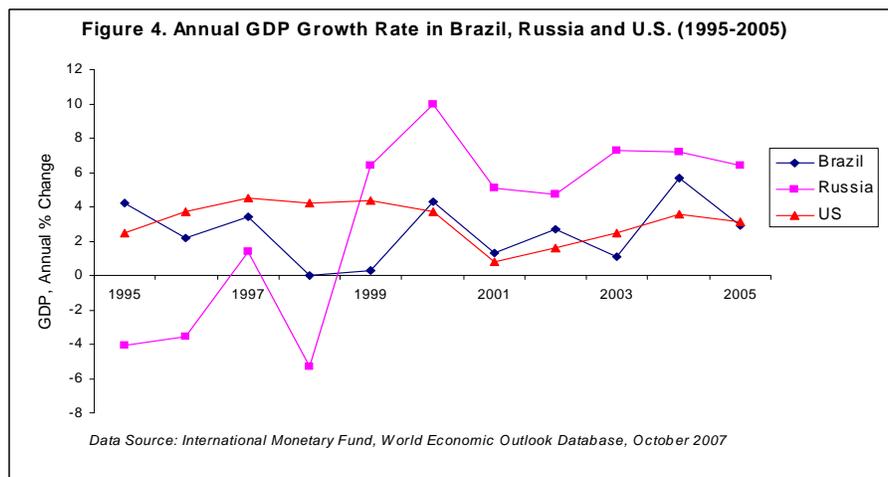
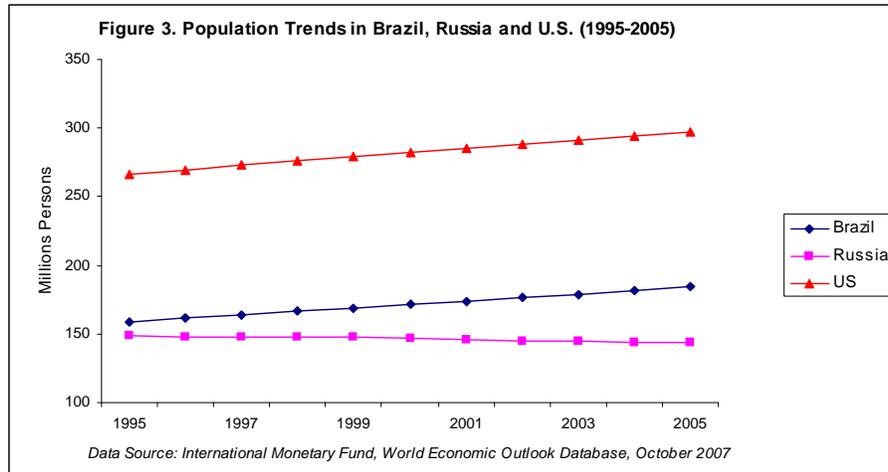
After a long history of hyperinflation and fiscal indebtedness, Brazil now follows tight fiscal policies with strong economic growth and real wage increases. Current political reforms in Brazil emphasize building a more welcoming climate for domestic and foreign investment. Agriculture remains a major sector of the Brazilian economy accounting for 30% of GDP. Likewise, the Russian economy weathered the shock of the transition from a socialist to market economy in the 1990s following the collapse of the Soviet Union. The Russian economy was and remains mostly industrial with manufacturing as the prevalent sector. It still depends largely on oil and gas revenues. Russian exports consist mostly of petroleum and petroleum products, natural gas, chemicals, wood and wood products.

Brazil and Russia have similar size populations. Brazil's population of 184 million people is the largest in Latin America and fifth largest in the world. Russia's population is 143.5 million people. However, while Brazilian population grew 1.4% in 2005, the total population of Russia declined by 0.5% during the same year (Figures 2 and 3). The population decline in Russia is a worrisome demographic trend which, if not reversed, can become detrimental to its future economic growth.



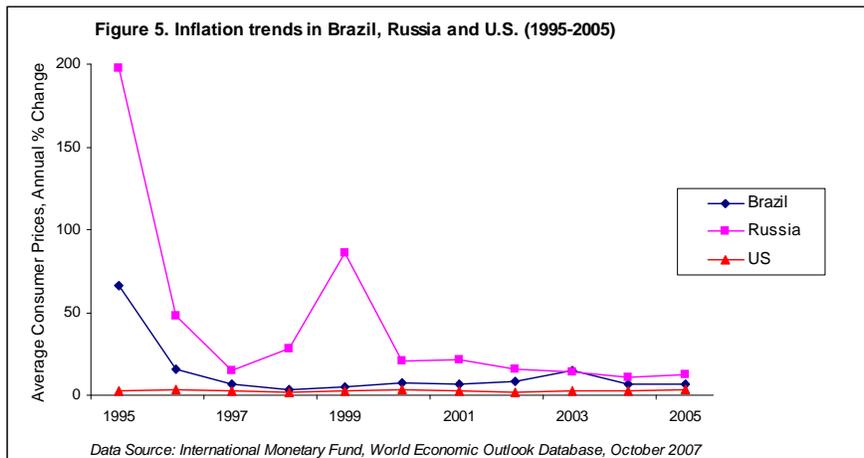
After years of economic decline, which were exacerbated by the 1998 financial crisis, Russia's GDP growth is now on the path of recovery. In 2005, it grew at 6.4% per year compared

to Brazil's GDP annual growth rate of 2.9%. In comparison, GDP in U.S. grew at an annual rate of 3.1% during the same year (Figure 4).



COST OF BORROWING

The rate of inflation is one of the factors determining the real cost of borrowed funds. Both Russia and Brazil experienced double and triple digit inflation in the early 1990s. Since then inflation in Russia declined from 197% in 1995 to 12.7% in 2005. Brazil's inflation rate declined from 66% to 6.9% during the same time period (Figure 5). At the same time inflation in the U.S. fluctuated in the range of 1.5%-3.4% per year.



Although inflation rates in Russia and Brazil declined significantly in the past ten years, borrowing costs remain high. In addition to the relatively high inflation rate in Brazil and Russia, default risk premiums and credit administration costs contribute to high interest rates. According to the Emerging Markets Indicators summary published by the Economist, in 2005 the average annual short-term interest rates were 17.29% in Brazil and 12% in Russia. In the United States, during the same year, the prime interest rate ranged from 5.25% to 7.00%. Legal and institutional problems that lengthen debt foreclosure and recovery also contribute to the high cost of borrowing in Brazil and Russia.

FINANCIAL INSTITUTIONS AND SMALL BUSINESS CREDIT IN BRAZIL AND RUSSIA

Prior to the soviet regime collapse in the late 1980s, all banks in Russia were state owned. Until recently, state owned banks had the financial backing and guaranty of the federal government which gave them a significant competitive advantage over private banks in attracting deposits. The Russian government owns 61% of the shares in Sberbank, the largest state owned bank. International transactions go through another state owned bank, Vneshtorgbank. The Russian Bank for Development (RBD) deals with small businesses and smaller projects. Foreign banks cannot presently open their branches on the territory of the Russian Federation although they can own a Russian bank (ABA Banking Journal, 2006, p. S8).

In the 1990s, the proportion of financing provided to small businesses by Russian banks was extremely small due to the inherent risks and an absence of credit enforcement mechanisms. Financing activities were directed at larger businesses and government enterprises. The collapse of the banking system in 1998 reduced the total value of outstanding loans. It led to a further decrease in the amount of credit going to small businesses (Kihlgren, 2002). Since that time the total value

of loans has significantly increased from \$54 billion in 2003 to \$213 billion by the end of the third quarter of 2005 (ABA Banking Journal, p. S6). Loan defaults, money laundering activities and the lack of a centralized database and credit rating agencies remain the main concerns of Russian financial institutions.

The banking system in Brazil has also experienced a dramatic transformation since the mid-1990s. Once dominated by state-owned banks, it went through mergers, acquisitions and bank closings. In fact, only 14 state-owned banks remained in existence in 2002 compared to 32 state-owned banks in 1994, when the stabilization Real Plan was introduced. Despite this decrease in the number of state-owned banks, they still account for 29% of total loans, and 43% of total deposits of the Brazilian banking system. At the same time, foreign banks increased their presence in Brazilian financial markets. After the first eight months the Real Plan led to an increase in lending activity by 44%. This increase in lending, however, was not supported by credit risk considerations which lead to a decline in a credit quality. Thus, the lower inflation rates and more stable pricing environment eventually led to a decline in lending volume and increase in non-performing loans (Nakane, Weintraub, 2005). Overall, consolidation of the banking system has not resulted in an improved availability of credit in Brazil. High lending rates and taxes are the main reasons for the high cost of credit, making it inaccessible to small businesses. The business owners often finance their business operations with personal savings or by utilizing consumer credit (Pfeifer, 2005).

The governments of both Russia and Brazil have established private or government sponsored financial institutions devoted in whole or in part to the support of small and medium businesses. The Brazilian Development Bank (BNDES), a federal public company associated with the Ministry of Development, Industry and Foreign Trade of the Brazilian government, was established in 1952. Its goal is to provide capital funding to private companies, support investments in agriculture, commerce and service, and finance exports. One of the priorities of BNDES is to provide funding support to micro, small and medium enterprises, and stimulate job creation and an increase of taxable income. BNDES manages Guaranty Fund which guarantees a part of the credit risk incurred by private financial institutions in granting credit to micro, small and medium businesses. The microcredit program was established in 2003-2004, with participation of several Federal ministries and the Central Bank of Brazil, in order to provide access to lower cost credit for micro, small and medium enterprises.

Similarly, the Russian Bank for Development (RDB) was established in 1999 as a national development bank. It is a joint stock company with 100% of shares held by the Russian government. In 2006 RBD introduced a program designed to support SME development in Russia. This program sets lending guidelines and, in participation with the regional banks and local authorities, assures a fair and equal access to capital for small and medium businesses. RDB extends loan funds to the regional commercial banks which in turn lend funds to small businesses. The ultimate goal of this program is to increase regional economic growth, job creation and tax revenues.

WHAT IS A SMALL BUSINESS?

The classification of an enterprise as a small business varies in each country. In the U.S., for example, the SBA defines a small business as "one that is independently owned and operated and which is not dominant in its field of operation." A numerical standard for a "small business" designation was developed by the U.S. Congress. This standard typically applies to the number of employees or average annual receipts of the business concern. Table 1 provides an illustration of numerical standards for small business designation in the U.S. within certain industries.

Industry Group	Size Standard (number of employees or amount annual receipts (US\$))
Manufacturing	500 employees
Agriculture	\$750,000
Retail Trade	\$6.5 million
Business and Personal Services	\$6.5 million

Source: U.S. Small Business Administration

There are three main types of systems in place for defining a small business enterprise in the Eastern European countries including Russia. These include: (1) systems based on gross income, (2) systems using specific indicators to determine the size and output of a small business such as floor space, number of employees, or the location of the business, or (3) general patents for specific professions irrespective of the size, location, and turnover of the business. The definition of the "small business enterprise" is often designed to determine the level of taxation. Based on the revised tax regulations in Russia (2002), companies with up to 100 employees and an equivalent of US\$352,000 turnover are considered "small businesses" (Engelschalk). This definition is still being discussed in Russian political and business circles. In 2006 the Russian Economic Development and Trade Ministry presented new proposals to support small businesses which included a change of a legal definition of SME (The Kommersant, 2006). RBD defines an SME as a business with no more than 250 employees calculated as a two year average.

Like Russia, Brazil is now in the process of developing separate tax legislation for small businesses. Similarly, there is a need to define a small business for tax benefit purposes with possible definitions similarly based on the annual operational gross revenues or number of employees. For example, in order for a business to be classified as a "micro enterprise", the number of employees should not exceed 19 workers in the manufacturing sector, and 9 workers in the service industry. "Small" businesses typically have between 20-29 employees in manufacturing, and between 10-49 workers in the service industry (White, 2005). BNDES defines a "micro" enterprise as the one with annual operating gross revenues of up to R\$1,200,000, and a "small" enterprise as

the one with annual operational gross revenues of more than R\$1,200,000 and less than or equal to R\$10,500,000 (1.00 Brazil Real (R\$) = 0.5686 US Dollar (US\$), www.bloomberg.com, 7 Dec. 2007).

Therefore, it can be concluded that there is no single and clear definition of a small business enterprise. While the U.S. has a well established system to define a “small business”, Russia and Brazil have more fluid definitions which are often rooted in taxations codes. However, all definitions are based on either number of employees or amount of annual revenues. It can be expected that Brazil and Russia will develop more rigid definitions of a small business as their economic development progresses.

CURRENT ENVIRONMENT FOR SMALL BUSINESS ENTREPRENEURSHIP IN BRAZIL AND RUSSIA

Importance of Small Businesses in Economic Development

It is well known that small businesses in the U.S. have a profound impact on the national economy. According to the SBA, U.S. small businesses employ half of all private sector employees and pay 45% of total U.S. private payroll. Small businesses generated 60-80% of net new jobs annually over the last decade. Small businesses in most developing countries provide the majority of employment opportunities as well. They represent more than 90% of business operations and transactions (White, 2005).

Providing a stimulus to SME development is one of the main elements in the transition process to a market economy in Central and Eastern Europe including Russia (Zamulin, 2004). The Russian government recognizes that the development of basic industry branches mostly depends on the expansion of SME (RIA Novosti, 2005). However, the contribution of SME into the Russian economy is not fully accounted for due to the lack of reliable statistical data. It is estimated that the number of SME in Russia increased from 100,000 to 979,000 between 1999 and 2005 (RIA Novosti, 2006). Russia has several consulting organizations directed at helping small businesses. One such organization, the Russian Agency for Small and Medium Business Support, a private consulting company, was set up in 1992 under the initiative of the Government of the Russian Federation, with support from the Chamber of Commerce and Industry of the Russian Federation and other organizations. It assists SME with solving economic, financial, legal, organization and management issues. It also provides an information network, and sets business links with Russian and international partners.

The Brazilian government also emphasizes the importance of incorporating small businesses into the formal commercial sector. There are currently more than 4.5 million formal small businesses in Brazil. However, the number of informal small businesses in Brazil is estimated at 9.5 million (White, 2005). The Brazilian government created Brazilian Service for the Assistance of Micro and

Small Businesses (Serviço Brasileiro de Apoio às Micro E Pequenas Empresas, or SEBRAE) in the late 1980s to oversee all small business enterprise development issues. This agency was later privatized, and is now one of the largest and influential non-governmental agencies in Brazil. It provides assistance in training, consulting on credit and capital resources, entrepreneurial culture and local development (White, 2005).

Starting a New Business in Brazil and Russia

The ease with which countries allow a business start up determines the competitive advantage of that country in a global economic market and has an impact on its ability to attract local and foreign investment. According to the 2007 Doing Business Survey, Brazil ranks 120th and Russia 45th out of 178 countries on the ease of starting a new business. The United States ranks 4th following Canada, Australia and New Zealand. The factors contributing to this ranking include, among others, the number of procedures required to start a business, and time and costs involved (Table 2). The lack of centralized institutions overseeing small businesses, high variability of the local municipal laws and regulations, and absence of digital record-keeping increase costs and time associated with start up and operating a business in the emerging markets. More cumbersome procedures encourage bribery and corruption in an attempt to speed up the process through the system. This increases the cost of doing business, and such increases are passed on to consumers. Both Russia and Brazil have cumbersome bureaucratic procedures on the national and local levels, and bribery and corruption are common barriers to new business entrants. In contrast to the U.S. where the existing laws and regulations allow new businesses to begin operations in record time, emerging market economies lack structures favorable to small businesses.

Table 2. Starting a New Business Ranking: Brazil, Russia and U.S.

Country	Year	Rank	Procedures (number)	Time (days)	Cost (% of income per capita)
Brazil	2004	..	17	152	11.7
	2006	120	17	152	9.9
Russia	2004	..	10	37	9.6
	2006	45	8	29	3.9
United States	2004	..	6	6	0.7
	2006	4	6	6	0.8

Source: Doing Business Survey, 2007, The World Bank

For example, it currently takes 17 steps to register a business in Brazil, with about 7 different ministries involved. This process on average takes 152 days. The Brazilian government is attempting

to streamline the start up process for businesses allowing some states to take on-line registration (Lewis, 2007). In Russia it takes 29 days on average to start a business, which is an apparent improvement compared to 37 days in 2004. In 2006 in U.S. it took about 6 days on average to start a new business. Although the cost of opening a new business remained relatively high in 2006 in Brazil and Russia compared to U.S. as a percentage of per capita income, (9.9% in Brazil and 3.9% in Russia), it showed a declining trend in both countries since the 2004 survey.

Like in Brazil, start up businesses in Russia must deal with confusing and cumbersome forms and registration procedures on the federal and local level. Not surprisingly, such a system pushes entrepreneurs to resort to bribery and corruption. In addition to bribes paid to the tax departments, local bureaucrats and officials, some Russian businesses have to pay organized criminal groups (Broadman, 2001). In order to reduce administrative oversight and overall business costs to businesses associated with registration, licensing and inspections, the Ministry of Economic Development and Trade in Russia launched a deregulation program in 2001 (Zamulin, 2004). The registration process for small businesses in Russia was simplified. New laws set clear and acceptable standards for small business registration, and called for additional reform steps in creating a one-stop window process. Additionally, Russia has adopted generous taxation regulations for small businesses by reducing the tax burden on small businesses by 50-70% which reflected a strategy to encourage small business development (Engelschalk).

Likewise, the Brazilian government is moving in the same direction regarding the taxation laws for small businesses. Currently Brazilian business owners pay one of the highest tax rates in the world. In 2007 the new tax law was introduced to the Brazilian Chamber of Deputies. Once approved by the country's president, this law is expected to reduce tax rates by 35 -50% for small businesses and legalize one million micro- and small businesses. In addition to tax provisions, it provides other measures to reduce bureaucratic procedures currently required for small businesses (Timm, 2007). Since most of the informal labor takes place in the small business sector, by streamlining tax regulations and the registration process, the Brazilian government also hopes to create new jobs for small businesses (P. dos Santos, 2005).

Ease of Getting a Business Credit

Brazil ranks 80th and Russia ranks 156th on ease of getting business credit, according to the 2007 Doing Business Survey (Table 3). This ranking includes a legal rights index, credit information index and public registry coverage. The legal rights index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending, on a scale from 1 to 10. The higher index indicates that collateral and bankruptcy laws are better designed to expand access to credit. Russia has a slightly higher legal rights index (3) compared to Brazil (2), with both countries trailing U.S. which ranks 7th.

Table 3. Getting Credit Ranking: Brazil, Russia and U.S.

Getting Credit Ranking						
Economy	Year	Rank	Legal Rights Index	Credit Information Index	Public registry coverage (% adults)	Private bureau coverage (% adults)
Brazil	2004	..	2	5	7.8	42.5
	2006	80	2	5	16.9	43
Russia	2004	..	3	0	0	0
	2006	156	3	0	0	0
United States	2004	..	7	6	0	100
	2006	7	7	6	0	100

Source: Doing Business Survey, 2007, The World Bank

The credit information index measures the scope, accessibility and quality of credit information available through either public or private credit registries, on a scale from 0 to 6. Brazil's credit information index is rated 5. It means that Brazilian lenders rely on both public and private registries during the credit evaluation process. As a way of further improvement, the Brazilian banks are starting to collect positive information including good payment history, along with more traditional information on defaults and delinquencies. Availability of positive information can contribute to lower risk premium spreads for eligible borrowers (P. Dos Santos, 2005).

Russia has a zero rating on its credit information index, indicating that its public and private credit registry is not operational or has coverage of less than 0.1% of the adult population. The absence of a national credit bureau or business rating agency presents unique set of challenges to the Russian lenders. In the credit granting decision process, they have to rely on in-house credit history databases and internal credit investigations.

Challenges Facing SME in Brazil and Russia

The research conducted in the late 1990s on small business development in Russia suggested that the following factors impeded small business development since its legalization during perestroika in the mid-1980s: (1) high levels of corruption, (2) strong income inequality, (3) legislative framework (4) general situation of instability caused by the lack of clear rules, (5) the scarcity of financing for small businesses, (6) the precarious state of large industrial enterprises, and (7) high level of crime (Kihlgren, 2002). A study by Harry G. Broadman (2001) describes such deterrent factors in SME development in Russia as weak mechanisms for resolving commercial disputes, lack of access to seed capital and competitively priced credit, difficulty of obtaining

suitable business premises and real estate, and the complexity of business licensing, registration, and inspections.

Despite the fact that the Russian government made some recent changes to simplify laws and regulations directed at small businesses, and the Russian economy is on the path of recovery boosted by oil and gas revenues, corruption and crime remain deterrent factors to economic growth. Anecdotal evidence (Broadman, 2001) suggests that most firms pay bribes to tax inspectors, customs officers and local bureaucrats. In addition, most enterprises have to pay organized criminal groups. Brazil's small business enterprises are plagued by the similar problems. Due to the complicated bureaucratic laws and regulations, every point of contact with the system becomes an opportunity to extract a bribe (Doing Business in Brazil). A recent study by Leon Zurawicki compares the levels of corruption in Brazil and Russia (Global Corruption Report 2007, pp. 342-345). The study concludes that from the perspective of small Brazilian and Russian companies, the perceived need to make payments to get things done is higher in Brazil than in Russia. Another part of this study suggests that small businesses in both countries face more traps in the process of an operating their business rather than in the start-up phase.

CREDIT GRANTING PRACTICES TO SMALL BUSINESSES

The small business credit granting process in the U.S. typically involves an analysis of the borrower's ability to repay the loan, collateral evaluation, guaranties, and other specific terms and conditions, according to the SBA. As a rule, commercial lenders in U.S. want to see two sources of repayment: cash flow from business and collateral. Personal credit history of business owners is evaluated by obtaining a personal credit report through TransUnion, Equifax or other national credit bureaus. Commercial banks typically require a certain amount of owners' equity in a business, at least 20-40% of a total loan request. Collateral is required as a secondary source of repayment. Table 4 gives an illustration of the typical discount values given to different forms of collateral by U.S. commercial banks and the SBA.

COLLATERAL TYPE	BANK	SBA
Personal Residence	Market Value x .75 of Mortgage balance	Market Value x .80 of Mortgage balance
Trucks and Heavy Equipment	Depreciated Value x .50	Same
Office Equipment	Nothing	Nothing
Furniture and Fixtures	Depreciated Value x .50	Same
Receivables	Under 90 days x .75	Under 90 days x .50
Stocks and Bonds	50%-90%	50%-90%

COLLATERAL TYPE	BANK	SBA
Mutual Funds	Nothing	Nothing
IRA	Nothing	Nothing
CD's	100%	100%

Source: U.S. Small Business Administration

Small Business Credit Granting Practices in Brazil

The Brazilian Development Bank (BNDES) has accredited financial agents which are responsible for analysis of credit approval and guaranties. Usually these agents are the local banks where the borrowers already established some form of banking relationship. BNDES or the certified financial agents follow the standard credit granting practices, such as an adequate guaranty and satisfactory credit history. BNDES microcredit lines can be used for fixed asset acquisition and working capital, leasing, and support of importing and exporting enterprises. In 2003 BNDES introduced the BNDES card which is a revolving line of credit with the maximum credit amount of R\$250,000 granted to SME. The BNDES card can be used to finance a purchase of one of the 35 thousand items listed by BNDES. The bank analyzes the order placed through an on-line system, and determines the credit limit for the particular SME. A company can utilize other cards issued by the accredited banks, such as Banco do Brasil, Bradesco or Caixa Econômica.

The credit granting criteria for the SME include (1) sufficient expected cash flows to cover debt service, (2) assignment of future project revenues to financing guarantors, and (3) at least 20% of the borrower's equity. The total BNDES exposure should not exceed 75% of a total borrower's assets. Businesses have to comply with the established debt service coverage covenants which typically should not be less than 1.3:1. The company's size also influences the terms and conditions of business credit. For example, the limits for the working capital portion of the project vary by the size of the business. BNDES limits the working capital portion of the financing to 70% of fixed assets for microenterprises, and to 40% for SME. The length of the loan repayment term for working capital loans is typically less than that for fixed asset financing. The interest rates charged on business loans in Brazil depend on the size of the firm. According to a report published by the World Bank (Brazil: Interest Rates and Intermediation Spreads, 2006), in 2003 a small business paid an annual interest rate of 43.93% (mean), and the medium business was charged 32.73%. At the same time the large companies were charged on average 29.35% per annum. The same report noted that interest rates declined with the loan size, i.e. the loans up to R\$10,000 had interest rate on average 50.2%, and loans over R\$1 million had interest rates of "only" 27.3%.

Small Business Credit Granting Practices in Russia

The Russian Bank for Development (RBD) has several eligibility requirements for SME seeking commercial credit. A business should (1) have no more than 250 employees based on a two year average, (2) have been in business no less than 6 months, (3) be current on tax payments, (4) not be affiliated with regional banks, large enterprises, or the federal government, (5) not have derogatory records, (6) have a good credit history (or absence of negative credit history), and (7) be located on a territory of the Russian Federation. Businesses applying for credit have to supply a loan application, borrower's questionnaire, and business plan. The business plan should describe the business purpose of credit, market analysis, sales and expenses projections, and debt service analysis.

For a start-up business, RBD provides up to 75% of the project cost, with 25% contributed by the borrower. The term of the loan has to be more than 3 months and cannot exceed 2 years. The amount of credit facility for start-up costs is limited to 6 million rubles (1.00 Russian Ruble = 0.0408 US\$, www.bloomberg.com, 7 Dec. 2007). RBD also provides growth capital loans to the established SME. The maximum amount of the credit facility does not exceed 30 million rubles for a term of up to 3 years. Such loans can be secured by fixed assets, business assets, and third party guaranties. Working capital loans secured by business assets are granted for up to 6 months, with the maximum credit amount up to 12 million rubles. Collateral used to secure credit facilities is discounted at 30-50% of market value. Additional guaranties of the third parties with established credit may be required to secure the loan. Upon approval of the credit facility, the RBD and regional bank sign a credit contract with the SME detailing the terms of credit and repayment.

The terms and conditions of the small business loans to SME in Russia vary from bank to bank and from region to region. An on-line information portal for the Russian banks (www.banki.ru) allows business owners to search available credit options. The potential borrower can view information from up to a 100 Russian banks offering loan products to SME. Several main factors influence the terms and conditions of business credit including (1) amount of the loan in rubles or in U.S. dollars, (2) number of months or years in business, (3) time to repay the loan, and (4) available collateral. For example, Bank of Moscow has a Small Business Development credit product, offering loans to the SME up to 25 million rubles for the term from 3 months to 5 years, with an annual interest rate from 11.25%. The collateral required for this type of loan includes personal property and fixed assets, as well as guaranties of the principals. Rosbank offers loans up to 9 million rubles, for up to 5 years, at 15-17% annual interest rates. The required collateral includes personal property, fixed assets, inventories, stock, and vehicles. In addition, Rosbank can require principal and spousal guaranties.

CONCLUSION

Based on the reviewed sources, Brazil and Russia have some similarities in the current small business lending environment and credit granting practices. Both countries have a recent history of hyperinflation. That, in addition to the high risk premium spreads and high loan administration costs, makes the cost of borrowing prohibitively high to small businesses in these countries. Weak collateral enforcement mechanisms in Brazil and Russia impact credit risk premiums and further increase borrowing costs.

Due to higher default risks, the typical length of business credit in Russia and Brazil is shorter than in the U.S. While Russia currently has more favorable laws governing a business start-up process compared to Brazil, it lacks the nationwide registry of business and individual credit histories. Absence of centralized credit rating agencies for businesses and consumers in Russia add an uncertainty factor to credit decision making. In addition, both Russia and Brazil are plagued by corruption and criminal activities, with one of the studies suggesting that corruption in the business sector is more prevalent in Brazil than in Russia.

The governments of Brazil and Russia recognize the problems associated with business development procedures and practices and the need to support small business enterprises. Both countries have financial institutions designated by their governments to support SME by providing access to business credit with more favorable terms. While the Brazilian Development Bank (BNDES) was established in 1952, it introduced the microcredit program only recently, in 2003-2004. Similarly, in 2006 the Russian Bank for Development (RBD) established a program specifically designated to assist SME in getting business credit. Both BNDES and RBD established credit granting guidelines used by either the development banks themselves, or by the designated financial agents working directly with SME. The specific credit terms are based on the size of the business, past credit histories, project type (working capital or fixed asset investment), collateral and personal guaranties. Like in the U.S., commercial lenders in both Russia and Brazil evaluate business cash flow available for debt repayment and discount collateral at the predetermined rates.

Although some similar trends exist in the current small business lending environment in Brazil and Russia, these trends are dynamic and are closely related to the political and economic changes in the respective countries. For example, the 2008 Doing Business Survey by the World Bank projects Russia's overall "ease of doing business" to move up to 106th from 112th place, while Brazil's rating is expected to decline from 113th to 122nd place. These projected changes in overall ratings undoubtedly signal future changes in specific areas related to the business lending environment in these two countries. Furthermore, the scope of this review is limited to the publicly available information on SME lending policies mainly in Brazilian and Russian governmental financial institutions. Further research involving a wider scope of SME lending policies in Brazil and Russia as well as their development over time will be necessary to determine the future direction of these trends.

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AN INTERNATIONAL STUDY OF THE RELATION BETWEEN BOOK-TAX CONFORMITY AND THE VALUE RELEVANCE OF EARNINGS COMPONENTS

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ABSTRACT

This paper examines how book-tax conformity affects the value relevance of earnings and different components of earnings across countries. Since the primary objective of tax rules is different from the goal of financial reporting, accounting information is less likely to reflect underlying economic events in countries with strong links between tax and financial accounting. Using a binary variable of book-tax conformity developed in prior research, I find evidence that sales, depreciation, and tax components, measured by regression coefficients, are more value relevant in countries with low book-tax conformity. When the value relevance of earnings and earnings components is measured in terms of explanatory powers of regression models, the changes in earnings and sales are valued more in countries with weak book-tax alignment than in countries with strong book-tax alignment. I also find evidence that, for firms with high effective tax rates, changes in tax expenses is more value relevant in countries with high book-tax conformity.

INTRODUCTION

International factors in accounting information are becoming more important due to growth in international capital markets (Meek and Thomas, 2003). As the economies of different countries have become more closely linked, factors that affect a firm's performance in one country may impact the economies of other countries. In today's globalized environment, international accounting research can help us understand how current financial accounting data relate to future performance and overall firm value. Prior research (Alford et al. 1993, Joos and Lang 1994, Guenther and Young 2000, Ali and Hwang 2000, Ball et al. 2000, Herrmann et al. 2000, Hung 2001, Young and Guenther 2003, Ball et al. 2003, Leuz et al. 2003, and Haw et al. 2004) suggests that the value relevance of a country's financial reporting may be affected by various accounting practices and tax rules because each country has different political, social, and economic systems.

Since the primary objective of tax rules is *not* to satisfy the information needs of capital market participants, the value relevance of financial reports in countries with high tax-book conformity may be compromised (Ali and Hwang, 2000). Additionally, because firms have competing incentives between tax planning and financial reporting, accounting information in countries with a strong link between tax and financial accounting may be less value relevant. As

Guenther and Young (2000, p. 58) state, “firms have strong incentives to reduce taxes, and if financial and tax accounting must conform, tax considerations may dominate other considerations. Hence, financial accounting information may be less likely to reflect underlying economic events when firms attempt to minimize taxes.” Ali and Hwang (2000, p. 2) argue that, “requiring book-tax conformity provides incentives to reduce taxes by reporting systemically lower profits, thereby undermining the value relevance of financial reporting.” If financial statements are to provide a true and fair view of performance, financial accounting should not be influenced by tax considerations. Hence, if a country’s financial accounting principles are strongly aligned with tax rules, its financial accounting information is likely to be less value relevant.

Many prior studies (e.g., Alford et al. 1993; Ali and Hwang 2000; Guenther and Young 2000; Young and Guenther 2003) have found that the degree of book-tax conformity is negatively associated with the value relevance of a firm’s earnings for financial reporting. However, Hung (2001) does not find evidence to support a relation between book-tax conformity and value relevance of earnings, which is contrary to the findings of Ali and Hwang (2000) and Young and Guenther (2003). Given these contrary findings, the relation between book-tax conformity and the value relevance of earnings remains unresolved. This study adds to existing literature by providing evidence regarding the relation between book-tax conformity and the value relevance of earnings across countries. It is not clear why book-tax conformity is related to value relevance of accounting earnings. The reason may be either that high book-tax conformity causes earnings to be less value relevant or that high book-tax conformity is related to an information and regulation environment that results in limited association between accounting information and stock price. One way to address this issue is to examine the value relevance of earnings components. A Special Report issued by the Financial Accounting Standard Board (FASB) suggests that disaggregating earnings components would be a useful format for reporting income (FASB, 1998, para. 4.4). Prior research (e.g., Lipe 1986; Ohlson and Penman 1992; Lev and Thiagarajan 1993; Abarbanell and Bushee 1997) also indicates that earnings components contain useful information in the U.S. market; however, to-date there has been little to no investigation of the relation between the value relevance of earnings components and country-specific factors.

Hence, this study extends prior research by examining the relation between the value relevance of earnings components and country-specific factors, especially focusing on book-tax conformity. The results of my paper provide evidence regarding how book-tax conformity is related to the value relevance of accounting earnings. I examine whether earnings components in countries with high book-tax conformity are valued differently than in countries with low book-tax conformity, focusing on changes in three earnings components: sales, depreciation, and tax expense. I evaluate the value relevance of earnings and earnings components by coefficients and explanatory power in return-earnings regressions for each country. I examine whether there are differences in value relevance of earnings and earnings components between countries with high book-tax conformity versus countries with low book-tax conformity. Prior studies focus on relations between

the value relevance of earnings and book-tax conformity using *country-level tests*. My study is based on a *firm-level test* and is not a replication of previous studies. The remainder of this paper is organized as follows: Section 2 develops the hypotheses; Section 3 describes data and samples; Section 4 discusses the regression models used to test the hypotheses; Section 5 presents the results of empirical tests and Section 6 offers conclusion.

HYPHOTHESES

Book-tax conformity has been used in many previous international accounting studies to evaluate the value relevance of accounting numbers. Young and Guenther (2003, p. 556) argue that, “the financial tax conformity index may be a more comprehensive measure of the value relevance of financial reporting than the disclosure index, capturing features beyond disclosure practices such as accounting measurement differences and the external audit function.” Some studies find that book-tax conformity is related to the value relevance of firms’ accounting earnings. However, question still remains as to how book-tax conformity is related to the value relevance of accounting earnings. The answer may be either that book-tax conformity causes earnings to be less value relevant or that book-tax conformity is associated with an accounting environment that results in low quality earnings, such as each country’s legal origin. Prior research (e.g., Lipe 1986; Lev and Thiagarajan 1993; Abarbanell and Bushee 1997) finds that earnings components have incremental information content relative to that contained in earnings. Hence, I examine the relation between the value relevance of earnings components and country-specific factors, especially focusing on book-tax conformity.

Similar to the value relevance of aggregated earnings, I expect the value relevance of firms’ sales component to be lesser in countries with a high level of conformity between financial and tax accounting. In countries with high book-tax conformity, some portion of sales revenue is likely to be recognized on a cash basis in firms’ books since tax rules in many countries still follow the cash basis instead of the accrual basis. Because accrual accounting is likely to provide better information that reflects underlying economic substance than cash based accounting, the information in sales components based on accrual accounting is likely to be more relevant. I examine whether the valuation implication of the sales component of earnings is lower in countries with high book-tax conformity than in countries with low book-tax conformity. Hence, Hypothesis 1 is:

H₁: Changes in the sales component of net income are valued more in countries with low book-tax conformity than in countries with high book-tax conformity.

I also investigate whether the depreciation component are more value relevant in countries with low book-tax conformity than in countries with high book-tax conformity. Firms are generally required to use depreciation methods and useful lives as dictated by each country’s tax authorities. Thus, tax depreciation leaves less discretion to the company because the tax rules are generally

intended to lead to more uniform application of the tax system. However, because tax rules do not necessarily represent underlying economic events, depreciation methods and useful lives prescribed by the country's tax authorities are less likely to reflect various firms' activities related to the use of depreciable assets. Therefore, I expect information in the depreciation component to be less value relevant in countries with high book-tax conformity. My second hypothesis is:

H₂: Changes in the depreciation component of net income are valued more in countries with low book-tax conformity than in countries with high book-tax conformity.

If accounting earnings are more value-relevant in countries with low book-tax conformity than in those with high book-tax conformity, tax expense, which is based on accounting earnings, should also be more value-relevant in countries with low book-tax conformity than in those with high book-tax conformity. Hence, another hypothesis is:

H_{3a}: Changes in the tax component of earnings are valued more in countries with low book-tax conformity than in countries with high book-tax conformity.

However, when firms confront high effective tax rates, they face stronger incentives to minimize their taxable income. In general, firms with higher effective tax rates pay taxes at higher marginal tax rates and are more likely to attempt to reduce their tax expenses, as compared to firms with low effective tax rates. In countries with low book-tax conformity, firms with high effective tax rates are more likely to minimize taxable income while maximizing their reported income using accruals. For example, some of the largest and most profitable US firms did not pay taxes for several years in the 1990s due to excessive use of option-based compensation.

Moreover, as Dhaliwal et al. (2004) argue, tax expense can be used as a tool for earnings management. Under U.S. Generally Accepted Accounting Principles (GAAP), firms may be able to reduce tax expenses using permanent differences between financial and taxable income, income from foreign sources taxed at different rates, tax credits, and net operating loss carry forwards. U.S. firms can reduce tax expense when non-tax sources of earnings management are insufficient. Therefore, if a country's book-tax conformity is high, room for reducing tax expense will be lower and the value relevance of tax components of earnings may be higher. According to recent research by Schmidt (2006) that supports the results of Dhaliwal et al. (2004), an initial tax change component is more persistent for future tax changes than a revised tax change component. In addition, Guenther and Jones (2003) found that unexpected income resulting from a change in tax component is value relevant, but less value relevant than other unexpected earnings. I examine whether tax components of earnings are more value relevant in countries with high book-tax conformity than in countries with low book-tax conformity, when firms have high effective tax rates. My hypothesis is:

H_{3b} : For firms with high effective tax rates, changes in the tax component of earnings are valued more in countries with high book-tax conformity than in countries with low book-tax conformity.

Similar to the value relevance of earnings, I expect the value relevance of firms' other components to be higher in countries with a low level of conformity between financial and tax accounting. My final hypothesis is:

H_4 : Changes in other components of earnings are valued more in countries with low book-tax conformity than in countries with high book-tax conformity.

In summary, changes in all components of earnings are expected to be valued more in countries with low book-tax conformity. However, tax components are expected to be valued more in countries with high book-tax conformity when firms confront high effective tax rates.

DATA AND SAMPLE SELECTION

All data are from the *Compustat Global Vantage* database from 1995 through 2003. Accounting information data are from the *Global Industrial/Commercial* files and stock price data are from the *Global Issue* files. I have imposed data restrictions on the sample, such as the availability of accounting variables and market price variables. I have also limited the sample to firms from countries with book-tax conformity indices derived in prior research. The book-tax conformity index is mainly developed by Hung (2001) and the index for Korea by Young and Guenther (2003). To control for potential outliers, observations in the highest 1% or the lowest 1% values of all the continuous variables were excluded. The sample selection procedures yielded 57,554 firm-year observations from 1995 to 2003 for twenty-two countries. Table 1 lists the distribution of firm-year observations by country and fiscal year. Total firm-year observations for the sample countries range from 35 (South Africa) to 22,488 (United States).

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Australia	34	147	159	197	196	209	198	238	237	1,615
Canada	350	394	384	389	377	374	344	334	328	3,274
Denmark	9	11	21	27	31	30	30	47	51	257
Hong Kong	39	61	64	87	84	89	89	98	100	711
Ireland	17	22	21	26	27	24	21	22	18	198
Netherlands	18	23	26	33	56	78	112	104	112	562

Table 1: Distribution of firm-year observations by country and fiscal year

Country	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
New Zealand	0	3	4	13	12	13	9	8	14	76
Norway	13	15	38	55	54	55	62	80	74	446
Singapore	96	130	146	172	179	209	213	284	315	1,744
South Africa	0	0	0	0	0	0	1	1	33	35
U. K.	464	675	792	866	851	814	817	784	731	6,794
U. S.	2,181	2,702	2,791	2,675	2,504	2,512	2,476	2,370	2,277	22,488
Low B-T conformity countries total	3,221	4,183	4,446	4,540	4,371	4,407	4,372	4,370	4,290	38,200
Belgium	3	2	3	3	7	17	27	32	37	131
Finland	9	11	13	14	26	33	56	58	69	289
France	41	62	73	79	121	187	317	379	373	1,632
Germany	1	3	8	19	46	101	211	283	238	910
Italy	2	2	2	5	11	11	4	8	7	52
Japan	0	155	1,088	1,166	1,235	2,342	2,753	2,833	2,826	14,398
Korea	6	4	4	9	54	104	131	158	164	634
Spain	7	7	10	10	5	4	3	4	4	54
Sweden	9	14	34	75	95	85	138	198	200	848
Switzerland	2	7	10	21	35	55	71	103	102	406
High B-T conformity countries total	80	267	1,245	1,401	1,635	2,939	3,711	4,056	4,020	19,354
Total	3,301	4,450	5,691	5,941	6,006	7,346	8,083	8,426	8,310	57,554

RESEARCH MODELS

I first compare the value relevance of earnings between countries with low book-tax conformity and countries with high book-tax conformity from the following regression models.

$$CAR_{it} = \alpha_0 + \alpha_1 \Delta EARN_{it} + \varepsilon_{it} \quad (1)$$

$$CAR_{it} = \beta_0 + \beta_1 \Delta EARN_{it} + \beta_2 EARN_{it} + \varepsilon_{it} \quad (2)$$

CAR_{it} : Compounded market adjusted stock return for 15 months for firm i for year t

$EARN_{it}$: Net Earnings (Data #32 in *Global Industrial/Commercial* files) for firm i for year t

$\Delta EARN_{it}$: Change in Net Earnings for firm i from year $t-1$ to year t

Similar to Ali and Hwang (2000) and Hung (2001), market adjusted stock returns (AR_{it}) are compounded for fifteen months, ending three months after the fiscal year-end. Since the *Global*

Issue files contain only monthly price data, I have calculated each firm's returns using the monthly price adjusted for stock splits and dividends. Similarly, each country's monthly market returns were calculated using each country's stock market index. Monthly market adjusted returns were calculated by subtracting each country's market returns from individual firm returns. Compound market adjusted stock returns (CAR_{it}) are calculated by multiplying monthly market adjusted returns for fifteen months ending three months after the fiscal year-end. To control for firm size, earnings variables are scaled by the market value of the firm at the end of the previous year.

As Easton and Harris (1991) and Kothari and Zimmerman (1995) argue, errors-in-variable problems can be avoided by including a levels variable in the regression. Furthermore, since earnings indicate the performance of a firm during a specific period, it would be appropriate to include an earnings level variable as well as a changes variable in the regression models. To test how book-tax conformity affects the value relevance of earnings across countries, the following firm-level pooled regression models are estimated:

$$CAR_{it} = \omega_0 + \omega_1 \Delta EARN_{it} + \omega_2 BTCONF_j + \omega_3 BTCONF_j \times \Delta EARN_{it} + \varepsilon_{it} \quad (3)$$

$$CAR_{it} = \omega_0 + \omega_1 \Delta EARN_{it} + \omega_2 EARN_{it} + \omega_3 BTCONF_j + \omega_4 BTCONF_j \times \Delta EARN_{it} + \omega_5 BTCONF_j \times EARN_{it} + \varepsilon_{it} \quad (4)$$

CAR_{it} : Compounded market adjusted stock return for 15 months for firm i for year t

$EARN_{it}$: Net Earnings (Data #32 in *Global Industrial/Commercial* files) for firm i for year t

$\Delta EARN_{it}$: Change in Net Earnings for firm i from year $t-1$ to year t

$BTCONF_j$: Book-Tax conformity Index for country j

I examine whether changes in net earnings and book-tax conformity are value relevant for stock returns using Model (3). The independent variable is the book-tax conformity index. I use the book-tax conformity index developed by Hung (2001), who aggregates the average consensus estimate of the proximity of tax and financial accounting systems with other tax related indicators such as deferred taxes and accelerated depreciation methods. Hung (2001) developed the Tax-Book Conformity Index using the following criteria and weight: (1) average consensus estimate of the relation between tax and financial reporting (60%); (2) do deferred taxes exist? (20%); (3) does legal form dominate substance? (5%); (4) is additional accelerated depreciation allowed? (5%); (5) do amortization periods depend on tax laws? (5%); and (6) does lease capitalization depend on tax law? (5%). Higher index therefore indicates a stronger link between tax and financial reporting. Consistent with prior studies (Ali and Hwang 2000; Hung 2001; Young and Guenther 2003), I also use a high/low scheme to classify the resulting numbers from the book-tax conformity calculation. Hung (2001) argues that it is reasonable to assign the book-tax conformity index as a binary variable rather than a continuous one due to extreme values, finding that the results are qualitatively the same regardless of continuous or binary book-tax conformity measures. I code the sample countries as 0 for low conformity and 1 for high conformity of financial and tax accounting, based on the

classification presented by Hung (2001). Table 2 presents some accounting standards related to book-tax conformity and the Book-Tax Conformity Index in each country described above.

An interaction term of the changes in net earnings and book-tax conformity is included. By observing this interaction term, I test whether earnings are less value relevant in countries with high book-tax conformity. To show how book-tax conformity is related to the value relevance of accounting earnings, I examine the relation between the value relevance of earnings components and book-tax conformity. I evaluate the value relevance of changes in sales, depreciation, tax expense, and other earnings components.

Table 2. Book-tax conformity index and accounting standards related book-tax conformity in each country					
Country	Deferred Taxes ^a	Depreciation Policy ^a	Long-term Financial Lease ^a	'Hidden' non-equity reserves usually ^a	B-T Conf. Index ^b
<i>Countries with low B-T conformity</i>					
Australia	Used	Straight Line	Capitalized	Do not exist	0
Canada	Used	Straight Line	Capitalized	Do not exist	0
Denmark	Used	Straight Line w/ excess dep.	Capitalized	Exist and are separately reported	0
Hong Kong	Used	Straight Line	Capitalized	Do not exist	0
Ireland	Used	Straight Line	Capitalized	Not consistently disclosed	0
Netherlands	Used	Straight Line w/ excess dep.	Capitalized	As part of shareholders' equity	0
New Zealand	Used	Straight Line	Capitalized	As part of shareholders' equity	0
Norway	Paid As Incurred	Straight Line w/ excess dep.	Not Disclosed	Exist and are separately reported	0
Singapore	Used	Straight Line	Capitalized	Do not exist	0
South Africa	Used	Straight Line w/ excess dep.	Capitalized	As part of shareholders' equity	0
U. K.	Used	Straight Line	Capitalized	Do not exist	0
U. S.	Used	Straight Line	Capitalized	Do not exist	0
<i>Countries with high B-T conformity</i>					
Belgium	Used	Straight Line w/ excess dep.	Capitalized	Exist and are separately reported	1
Finland	Paid As Incurred	Straight Line w/ excess dep.	Capitalized	Exist and are separately reported	1
France	Used	Straight Line w/ excess dep.	Capitalized	Exist and are separately reported	1

Table 2. Book-tax conformity index and accounting standards related book-tax conformity in each country					
Country	Deferred Taxes ^a	Depreciation Policy ^a	Long-term Financial Lease ^a	'Hidden' non-equity reserves usually ^a	B-T Conf. Index ^b
Germany	Used by some corp.	Mixed Dep. w/ excess dep.	Usually not Disclosed	Exist and are separately reported	1
Italy	Used	Straight Line	Not Disclosed	Exist and are separately reported	1
Japan	Paid As Incurred	Accelerated depreciation	Mostly not Disclosed	Do not exist	1
Korea	Used	Straight Line w/ excess dep.	Capitalized or Expensed	As part of shareholders' equity	1
Spain	Used	Straight Line	Not Disclosed	As part of shareholders' equity	1
Sweden	Used	Straight Line w/ excess dep.	Capitalized or Expensed	Exist and are separately reported	1
Switzerland	Used	Straight Line	Capitalized or Expensed	Exist and are separately reported	1

^a Source: International Accounting and Auditing Trends, 1993: CIFAR

^b Book-Tax conformity Index show the degree of the alignment between financial accounting and tax reporting. The index is developed by Young and Guenther (2003) for Korea and by Hung (2001) for all other countries. It equals 1 for countries with high book-tax conformity and equals 0 for countries with low book-tax conformity.

I use the following procedure to calculate the value relevance of earnings components from the stock return–earnings components regressions for each country. The changes in earnings are decomposed as follows:

$$\Delta EARN_{it} = \Delta SALES_{it} - \Delta DEP_{it} - \Delta TAX_{it} - \Delta OTHER_{it} \quad (5)$$

$\Delta EARN_{it}$: Change in Net Earnings (Data #32 in *Global Industrial/Commercial* files)
for firm i for year t

$\Delta SALES_{it}$: Change in Sales (Data #1 in *Global Industrial/Commercial* files)
for firm i for year t

ΔDEP_{it} : Change in Depreciation (Data #12 in *Global Industrial/Commercial* files)
for firm i for year t

ΔTAX_{it} : Change in Tax Expenses (Data #23 in *Global Industrial/Commercial* files)
for firm i for year t

$\Delta OTHER_{it}$: Change in Other Earnings Components for firm i for year t

To control for firm size, all accounting variables are scaled by the market value of the firm at the end of the previous year. Then, the following regression models are estimated for countries with low book-tax conformity and countries with high book-tax conformity:

$$CAR_{it} = \alpha_0 + \alpha_1 \Delta SALES_{it} + \alpha_2 \Delta OTHERS_{it} + \varepsilon_{it} \quad (6)$$

$$CAR_{it} = \beta_0 + \beta_1 \Delta DEP_{it} + \beta_2 \Delta OTHERD_{it} + \varepsilon_{it} \quad (7)$$

$$CAR_{it} = \gamma_0 + \gamma_1 \Delta TAX_{it} + \gamma_2 \Delta PTI_{it} + \varepsilon_{it} \quad (8)$$

$$CAR_{it} = \delta_0 + \delta_1 \Delta SALES_{it} + \delta_2 \Delta DEP_{it} + \delta_3 \Delta TAX_{it} + \delta_4 \Delta OTHER_{it} + \varepsilon_{it} \quad (9)$$

$\Delta OTHERS_{it}$: Change in Other Earnings Components except Sales for firm i for year t

$\Delta OTHERD_{it}$: Change in Other Earnings Components except Depreciation for firm i for year t

ΔPTI_{it} : Change in Pre-Tax Income ((Data #23 in *Global Industrial/Commercial* files)
for firm i for year t

To test Hypothesis 1, earnings are decomposed into ‘sales and other components’ in countries with both low and high book-tax conformity. Earnings are also decomposed into ‘depreciation expenses and other components’ and ‘pretax income and tax component’ to test Hypotheses 2 and 3_a. Regression models are estimated as follows:

$$CAR_{it} = \omega_0 + \omega_1 \Delta SALES_{it} + \omega_2 \Delta OTHERS_{it} + \omega_3 BTCONF_j + \omega_4 BTCONF_j \times \Delta SALES_{it} + \omega_5 BTCONF_j \times \Delta OTHERS_{it} + \varepsilon_{it} \quad (10)$$

$$CAR_{it} = \theta_0 + \theta_1 \Delta DEP_{it} + \theta_2 \Delta OTHERD_{it} + \theta_3 BTCONF_j + \theta_4 BTCONF_j \times \Delta DEP_{it} + \theta_5 BTCONF_j \times \Delta OTHERD_{it} + \varepsilon_{it} \quad (11)$$

$$CAR_{it} = \lambda_0 + \lambda_1 \Delta TAX_{it} + \lambda_2 \Delta PTI_{it} + \lambda_3 BTCONF_j + \lambda_4 BTCONF_j \times \Delta TAX_{it} + \lambda_5 BTCONF_j \times \Delta PTI_{it} + \varepsilon_{it} \quad (12)$$

In the regression Model (10), the coefficient of interaction variable w_4 represents the different effect of sales component changes for countries with high book-tax conformity from countries with low book-tax conformity. Similarly, the coefficients f_4 and l_4 in Models (11) and (12) represent the differences in the sensitivity of CAR to the changes in depreciation and tax components respectively between countries with high book-tax conformity and countries with low book-tax conformity. Yearly regressions are also estimated to compare mean coefficients of each earnings component between countries with low book-tax conformity and countries with high book-tax conformity. From yearly regression models, I compare explanatory power, measured by adjusted R^2 , between two groups to examine whether the value relevance of earnings and earnings components is generally higher in countries with low book-tax conformity.

For Hypotheses 3_b, I test whether the changes in tax expenses of the firms with high effective tax rates (firms within the first quintile on effective tax rates) are more value relevant in countries

with strong book-tax conformity than in countries with weak conformity, by comparing explanatory powers and the coefficient of tax components between two groups of countries.

I also examine whether decomposing earnings into various components increases value relevance on stock returns in countries with high book-tax conformity and countries with low book-tax conformity. Vuong (1989) proposed a simple likelihood-ratio based statistic, testing the null hypothesis that competing models are equally close to the true data generating process against the alternative hypothesis that one model is closer. Vuong's test statistics demonstrate whether regression models for earnings components have statistically significant incremental explanatory power compared with the models for earnings.

EMPIRICAL RESULTS

Table 3 reports the Pearson correlations between dependent variable (*CAR*) and independent variables, such as changes in earnings, sales, depreciation, tax expenses, and other earnings components, demonstrating that earnings and other earnings components variables are highly correlated with each other both in countries with strong book-tax alignment and in countries with weak book-tax alignment. Moreover, all independent variables are also highly correlated with compounded market adjusted returns, which are the main dependent variable for the tests.

	<i>CAR</i>	$\Delta EARN$	$\Delta SALES$	ΔDEP	ΔTAX	$\Delta OTHERS$	$\Delta OTHERD$	ΔPTI
<i>CAR</i>		0.22153	0.12664	0.02539	0.17926	0.08021	0.22635	0.24093
		(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)
$\Delta EARN$	0.20306		0.15799	-0.09431	0.33329	-0.05621	0.97688	0.96938
	(<.0001)		(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)
$\Delta SALES$	0.09502	0.16752		0.40770	0.26716	0.97700	0.24508	0.20918
	(<.0001)	(<.0001)		(<.0001)	(<.0001)	(<.0001)	(<.0001)	(<.0001)
ΔDEP	-0.03636	-0.02395	0.49295		0.08799	0.43260	0.12069	-0.06157
	(<.0001)	(0.0009)	(<.0001)		(<.0001)	(<.0001)	(<.0001)	(<.0001)
ΔTAX	0.14494	0.33416	0.26838	0.12427		0.19816	0.35123	0.53661
	(<.0001)	(<.0001)	(<.0001)	(<.0001)		(<.0001)	(<.0001)	(<.0001)
$\Delta OTHERS$	0.06026	-0.00797	0.98450	0.50426	0.21277		0.03685	0.00216
	(<.0001)	(0.2674)	(<.0001)	(<.0001)	(<.0001)		(<.0001)	(0.6728)

	<i>CAR</i>	Δ <i>EARN</i>	Δ <i>SALES</i>	Δ <i>DEP</i>	Δ <i>TAX</i>	Δ <i>OTHERS</i>	Δ <i>OTHERD</i>	Δ <i>PTI</i>
Δ <i>OTHERD</i>	0.18920 (<.0001)	0.96968 (<.0001)	0.28391 (<.0001)	0.22107 (<.0001)	0.35636 (<.0001)	0.11548 (<.0001)		0.95338 (<.0001)
Δ <i>PTI</i>	0.21656 (<.0001)	0.94725 (<.0001)	0.23078 (<.0001)	0.02029 (0.0048)	0.58385 (<.0001)	0.06558 (<.0001)	0.92904 (<.0001)	

Pearson correlation coefficients of variables for the countries with low book-tax conformity (high book-tax conformity) in the upper (lower) triangle; Two-tailed *p*-values in parentheses.

Table 5 (Panel A) compares the value relevance of earnings between countries with high book-tax conformity and that of countries with low book-tax conformity. From the return-earnings regression models, I compare coefficients of changes in earnings and level of earnings and also compare explanatory powers in return-earnings regressions between two groups of countries. Coefficients of changes in earnings are higher in countries with weak book-tax alignment, but coefficients of level of earnings are higher in countries with strong book-tax alignment. The explanatory powers, measured by adjusted R^2 , of return-earnings regressions are higher in countries with low book-tax conformity for both Model (1) and Model (2).

	Countries with Low B-T Conformity			Countries with High B-T Conformity			Mean Differences	t-stat	p-value
	Number of obs.	Mean	Std. dev.	Number of obs.	Mean	Std. dev.			
Changes in Net Earnings (Δ <i>EARN</i>)	38,200	0.0220	0.2187	19,354	0.0189	0.2084	0.0031	1.67	0.0954
Changes in Sales (Δ <i>SALES</i>)	38,200	0.2192	1.0239	19,354	0.1306	1.1881	0.0886	9.28	<0.0001
Changes in Depreciation (Δ <i>DEP</i>)	38,200	0.0083	0.0471	19,354	0.0036	0.0522	0.0047	11.00	<0.0001
Changes in Tax Expense (Δ <i>TAX</i>)	38,200	0.0083	0.0589	19,354	0.0078	0.0695	0.0005	0.79	0.4311
Changes in Other Expense except Sales									
(Δ <i>OTHERS</i>)	38,200	0.1971	1.0127	19,354	0.1118	1.1713	0.0854	9.06	<0.0001
Changes in Other Expense except									
Depreciation (Δ <i>OTHERD</i>)	38,200	0.0303	0.2193	19,354	0.0224	0.2136	0.0079	4.12	<0.0001

Table 4. Univariate statistics of variables between countries with low book-tax conformity and countries with high book-tax conformity

	Countries with Low B-T Conformity			Countries with High B-T Conformity					
Changes in Pre-tax Income (<i>ΔPTI</i>)	38,200	0.0306	0.2481	19,354	0.0272	0.2400	0.0035	1.60	0.1096
Compounded Market Adjusted Returns (<i>CAR</i>)	38,200	0.0646	0.6240	19,354	0.1386	0.5300	-0.074	-14.13	<0.0001
Compounded Market Adjusted Returns II (<i>CAR II</i>)	37,187	-0.009	0.4858	18,542	-0.008	0.3998	-0.001	-0.29	0.7691

Variables in the above table are defines as follows;

ΔEARN : Change in Net Earnings (Data #32 in *Global Industrial/Commercial* files)

ΔSALES : Change in Sales (Data #1 in *Global Industrial/Commercial* files)

ΔDEP : Change in Depreciation (Data #12 in *Global Industrial/Commercial* files)

ΔTAX : Change in Tax Expenses (Data #23 in *Global Industrial/Commercial* files)

ΔOTHERS : Change in Other Earnings Components except Sales

ΔOTHERD : Change in Other Earnings Components except Depreciation

ΔPTI : Change in Pre-Tax Income ((Data #23 in *Global Industrial/Commercial* files)

CAR : Compounded market adjusted stock return for 15 months

CAR II : Compounded market adjusted stock returns II, calculated based on average of monthly returns of sample firms in each country and used only for the sensitivity tests.

Table 5: (Panel A) Value relevance of earnings in countries with low book-tax conformity and countries with high book-tax conformity

Dependent Variable = 15 months compound market-adjusted return (<i>CAR</i>)					
		Low B-T Conformity Countries		High B-T Conformity Countries	
	Predicted sign	Model (1)	Model (2)	Model (1)	Model (2)
Intercept	?	0.05064	0.03646	0.12887	0.12216
		(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)
Changes in Net Earnings (<i>ΔEARN</i>)	(+)	0.63204	0.48823	0.51656	0.35672
		(<0.0001)	(<0.0001)	(<0.0001)	(<0.0001)
Net Earnings (<i>EARN</i>)	(+)		0.40697		0.44753
			(<0.0001)		(<0.0001)
Adjusted-R ²		0.0491	0.0664	0.0412	0.0624
Fixed Effects		None	None	None	None
No. of Observations		38,200	38,200	19,354	19,354

Table 5 (Panel B) presents results from firm-level pooled regression models estimated to test whether book-tax conformity is related to the value relevance of firms' accounting earnings. The inclusion of interaction terms in the regression models tests the effects of earnings changes on the returns of companies in countries with different levels of book-tax conformity. In Model (3), the coefficient of interaction variables represents the different effect of earnings changes for countries with high book-tax conformity from countries with low book-tax conformity. Consistent with prediction, the coefficient of interaction variables is significantly negative.

In Model (4), I include level of earnings as well as changes in earnings. As in Model (3), interaction terms are used to test different effects of book-tax conformity on returns across countries. Two coefficients of interaction terms, φ_4 and φ_5 , show the difference between the effects of earnings changes and earnings levels on stock returns for countries with high book-tax conformity and those for countries with low book-tax conformity. As predicted, coefficients of interaction terms φ_4 are significantly negative, which indicates that the value relevance of changes in earnings is higher in countries with low book-tax conformity. However, coefficient φ_5 is not statistically significant. When I use the compounded market adjusted returns based on average monthly returns of sample firms in each country, both the coefficients of interaction terms for the change of earnings (φ_4) and coefficients of interaction terms for the level of earning (φ_5) are significantly negative. Overall, I find that the value relevance of changes in earnings is negatively associated with the degree of book-tax conformity across countries.

		Dependent Variable = 15 months compound market-adjusted return (<i>CAR</i>)					
		Model (3)			Model (4)		
	Predicted sign	Coeff.	t-stat	p-value	Coeff.	t-stat	p-value
Intercept	?	0.05064	16.98	<0.0001	0.03646	12.17	<0.0001
Changes in Net Earnings ($\Delta EARN$)	(+)	0.63204	46.58	<0.0001	0.48823	33.94	<0.0001
Net Earnings (<i>EARN</i>)	(+)				0.40697	27.99	<0.0001
B-T Conformity Index	?	0.07823	15.22	<0.0001	0.08570	16.17	<0.0001
B-T Conformity \times $\Delta EARN$	(-)	-0.11548	-4.78	<0.0001	-0.13150	-5.07	<0.0001
B-T Conformity \times <i>EARN</i>	(-)				0.04057	1.45	0.1473
Adjusted-R ²			0.0502			0.0685	
Fixed Effects			None			None	
Number of Observations			57,554			57,554	

Table 6 (Panel A) compares the value relevance of earnings components from Model (6) to Model (9) between countries with high book-tax conformity and countries with low book-tax conformity. As predicted in Hypothesis 1, the coefficient of changes in sales and explanatory power of the regression are higher in countries with low book-tax conformity. The explanatory powers of regression models for depreciation and tax expenses are also higher in countries with weak alignment of book-tax conformity. As also predicted in Hypothesis 2, coefficient of the changes in depreciation is negatively related to stock return perhaps because expenses reduce net earnings. However, the coefficient of changes in depreciation is less negative in countries low book-tax conformity perhaps because the negative effect of book expense on stock returns may be mitigated by tax savings from depreciation due to accelerated depreciation and shorter useful life used in computing tax depreciation in countries with weak alignment between tax and financial reporting.

Table 6 (Panel B) presents results from firm-level pooled regression models, Model (10) through Model (12), to test Hypothesis 1, 2, 3_a, and 4. Results show that the coefficient of changes in sales is significantly positive, consistent with the prediction. The coefficient of changes in tax expense is also significantly positive, perhaps because investors recognize that more profitable firms probably pay more taxes. The interaction variables of book-tax conformity and changes in each earnings components variable show the effect of book-tax conformity on the value relevance of the components. In Model (10), the coefficient of the interaction variable of book-tax conformity and changes in sales is significantly negative, which is consistent with the prediction in Hypothesis 1 that changes in the sales components are valued more in countries with low book-tax conformity than in countries with high book-tax conformity.

Table 6. (Panel A) Value relevance of earnings components in countries with low book-tax conformity and countries with high book-tax conformity									
		Dependent Variable = 15 months compound market-adjusted return (<i>CAR</i>)							
		Low B-T Conformity Countries				High B-T Conformity Countries			
	Predicted sign	Model (6)	Model (7)	Model (8)	Model (9)	Model (6)	Model (7)	Model (8)	Model (9)
Intercept	?	0.03902 (<0.0001)	0.04522 (<0.0001)	0.04275 (<0.0001)	0.03473 (<0.0001)	0.12571 (<0.0001)	0.13004 (<0.0001)	0.12492 (<0.0001)	0.12416 (<0.0001)
Changes in Sales (<i>ΔSALES</i>)	(+)	0.64695 (<0.0001)			0.5482 (<0.0001)	0.51871 (<0.0001)			0.44663 (<0.0001)
Changes in Depreciation (<i>ΔDEP</i>)	(-)		-0.02597 (<0.0001)		-0.44209 (<0.0001)		-0.8346 (<0.0001)		-1.28566 (<0.0001)
Changes in Tax Expense (<i>ΔTAX</i>)	(+)			0.74396 (<0.0001)	0.56645 (<0.0001)			0.21425 (<0.0001)	0.19001 (<0.0001)

powers of earnings components models between countries with low book-tax conformity and high book-tax conformity.

Table 6. (Panel B) The effect of book-tax conformity on the value relevance of earnings components										
Dependent Variable = 15 months compound market-adjusted return (<i>CAR</i>)										
		Model (10)			Model (11)			Model (12)		
	Predicted sign	Coeff.	t-stat	p-value	Coeff.	t-stat	p-value	Coeff.	t-stat	p-value
Intercept	?	0.03902	12.88	<0.0001	0.04522	14.92	<0.0001	0.04275	14.33	<0.0001
$\Delta SALES$	(+)	0.64695	47.79	<0.0001						
ΔDEP	(-)				-0.02597	-0.41	0.6821			
ΔTAX	(+)							0.74396	12.52	<0.0001
$\Delta OTHERS$	(-)	-0.58967	-43.08	<0.0001						
$\Delta OTHERD$	(+)				0.6446	47.34	<0.0001			
ΔPTI	(+)							0.51123	36.27	<0.0001
<i>BTCONF</i>	?	0.0867	16.77	<0.0001	0.08482	16.40	<0.0001	0.08217	16.00	<0.0001
<i>BTCONF</i> × $\Delta SALES$	(-)	-0.12914	-5.36	<0.0001						
<i>BTCONF</i> × ΔDEP	(-)				-0.80863	-7.81	<0.0001			
<i>BTCONF</i> × ΔTAX	(-)							-0.06921	-2.71	0.0067
<i>BTCONF</i> × $\Delta OTHERS$	(+)	0.09986	4.09	<0.0001						
<i>BTCONF</i> × $\Delta OTHERD$	(-)				-0.12997	-5.37	<0.0001			
<i>BTCONF</i> × ΔPTI	(-)							-0.52972	-5.60	<0.0001
Adjusted-R ²			0.0575			0.0520			0.0609	
Fixed Effects			None			None			None	
Number of Observations			57,554			57,554			57,554	

The numbers in parenthesis represent p-value of coefficient.

In addition to book-tax conformity, the legal environment of each country may have influenced the value relevance of earnings components. Therefore, I add a legal environment control variable, developed by prior literature (e.g., Hung 2001), to the regression models. After controlling legal environment variable, the results for changes in earnings and changes in sales are not

significantly different from the main results. However, after controlling for the legal environment variable, the interaction coefficient of book-tax conformity index and changes in tax expenses as well as interaction coefficient of changes in depreciation are positively related to stock returns. When I use the compounded market adjusted returns based on average of monthly returns of sample firms in each country, the results are similar to the main results. Because firms with higher effective tax rates pay taxes at higher marginal tax rates and are more likely to attempt to reduce their tax expenses, as compared to firms with low effective tax rates, I test whether the changes in tax expenses of the firms with high effective tax rates are more value relevant in countries with strong book-tax conformity than in countries with weak conformity. Table 7 (Panel A) compares value relevance of changes in earnings and changes in tax expenses for the firms with high effective tax rates (11,508 firm-year sample within first quintile on effective tax rates) between countries with weak book-tax alignment and those with strong book-tax alignment. Similar to the results from the total 57,554 firm-year sample, explanatory power of stock returns-earnings regression is higher in countries with low book-tax conformity. However, explanatory power of stock returns-tax expenses regression is higher in countries with high book-tax conformity, which supports Hypothesis 3_b. Table 7 (Panel B) presents the results from firm-level pooled regression models, to test Hypothesis 3_b. In Model (12), the coefficient of the interaction of book-tax conformity and changes in tax expenses is significantly negative, which is consistent with the prediction in Hypothesis 3_b that changes in tax components are valued less in countries with low book-tax conformity than in countries with high book-tax conformity.

Figure 1. Comparison of explanatory powers of earnings components models between countries with low book-tax conformity and countries with high book-tax conformity

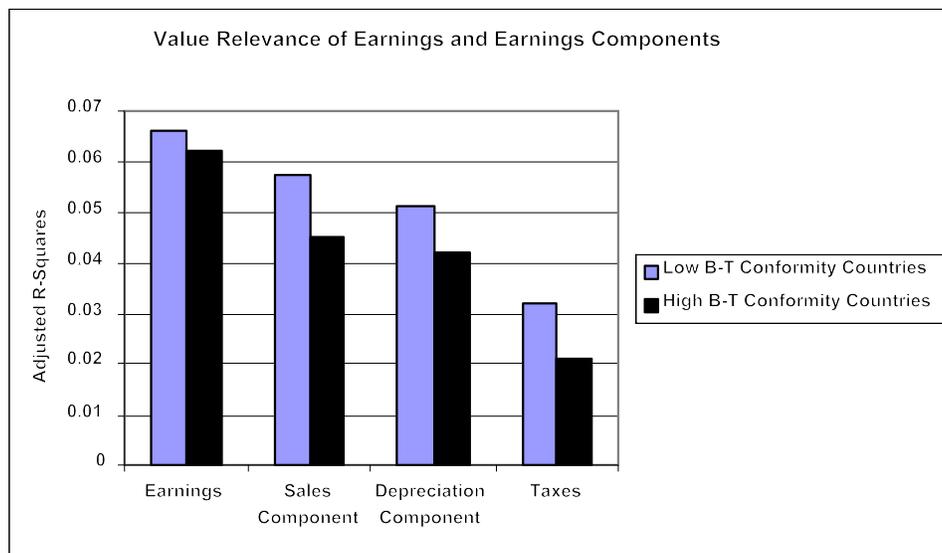
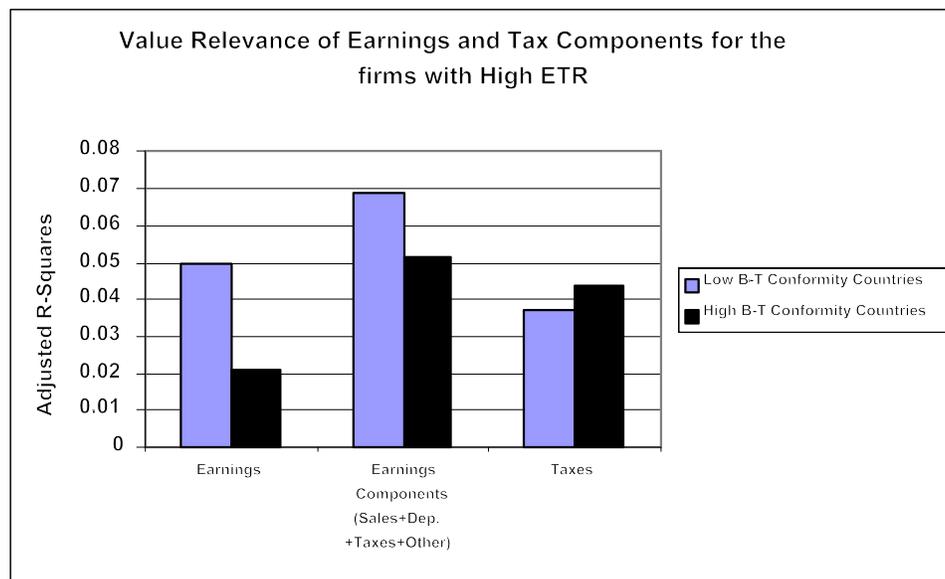


Table 7: (Panel A) Value relevance of earnings components for the firms with high ETRs in countries with low book-tax conformity and countries with high book-tax conformity							
Dependent Variable = 15 months compound market-adjusted return (<i>CAR</i>)							
		Low B-T Conformity Countries			High B-T Conformity Countries		
	Predicted sign	Model (1)	Model (9)	Tax Expense	Model (1)	Model (9)	Tax Expense
Intercept	?	0.02724	0.00964	0.01683	0.12621	0.11255	0.11551
		(0.0045)	(0.3285)	(0.0846)	(<.0001)	(<.0001)	(<.0001)
$\Delta EARN$	(+)	0.77378			0.51582		
		(<.0001)			(<.0001)		
$\Delta SALES$	(+)		0.64912			0.17940	
		(<.0001)		(<.0001)		(<.0001)	
ΔDEP	(-)		-0.72188			-1.06819	
		(0.0003)		(<.0001)		(<.0001)	
ΔTAX	(+)		0.29927	1.57988		1.06976	1.43237
		(0.0878)		(<.0001)		(<.0001)	(<.0001)
$\Delta OTHER$	(-)		-0.60874			-0.14796	
		(<.0001)				(0.0016)	
Adjusted- R^2		0.0500	0.0689	0.0368	0.0207	0.0512	0.0438
No. of Observations.		3,656	3,656	3,656	7,852	7,852	7,852

Table 7: (Panel B) The effect of book-tax conformity on the value relevance of earnings components for high ETR firms							
Dependent Variable = 15 months compound market-adjusted return (<i>CAR</i>)							
		Model (3)			Model (12)		
	Predicted sign	Coeff.	t-stat	p-value	Coeff.	t-stat	p-value
Intercept	?	0.02724	3.26	0.0011	0.01673	2.00	0.0453
$\Delta EARN$	(+)	0.77378	15.96	<.0001			
ΔTAX	(+)				0.45154	3.03	0.0024
ΔPTI	(+)				0.60097	11.80	<.0001
BTCONF	?	0.09898	9.75	<.0001	0.09751	9.59	<.0001
BTCONF \times $\Delta EARN$	(-)	-0.25796	-3.97	<.0001			
BTCONF \times ΔTAX	(+)				0.59172	2.94	0.0032
BTCONF \times ΔPTI	(-)				-0.40986	-5.59	<.0001
Adjusted- R^2			0.0414			0.0617	
Fixed Effects			None			None	
Number of Observations			11,508			11,508	

Figure 2 describes explanatory powers of earnings and tax components models for the firms with high effective tax rates between countries with low book-tax conformity and high book-tax conformity.

Figure 2: Comparison of explanatory powers of earnings and tax components models between countries with low book-tax conformity and countries with high book-tax conformity for the firms with high effective tax rates



I use panel data containing two kinds of information in both cross-sectional data and time-series data. Cross-sectional information reflects the differences among countries, and the time-series, or within-country information, reflects the changes within countries over time, for a period of ten years. The ordinary multiple regression techniques used on panel data in the previous sections may not be optimal. The estimates of coefficients derived from regression may be subject to omitted variable bias – a problem that arises when there is some unknown variable or variables that cannot be controlled for that affect the dependent variable. To control for omitted variables that differ among countries but are constant over time, fixed effects regression are also estimated. Results from the regression models after controlling for fixed effects are similar to the main results.

Another way to address fixed effects is by estimating yearly regressions. To examine whether there exists differences in the value relevance of earnings and earnings components between countries with low book-tax conformity and countries with high book-tax conformity, I compare mean coefficients from yearly regressions following the approach of Fama and Macbeth (1974). Table 8 (Panel A) presents the mean of coefficients from yearly regressions for countries with low

book-tax conformity and the mean coefficient from yearly regressions for countries with high book-tax countries for a period of ten years.

Table 8: (Panel A) Mean of coefficients from yearly regressions				
Regression Coefficient	Low B-T Conformity Countries	High B-T Conformity Countries		
	Mean	Mean	Differences	t-value
$\Delta Earnings$	0.6318	0.4088	0.2230	3.18
				(0.0058)
$\Delta Sales$	0.0948	0.0332	0.0615	3.94
				(0.0012)
$\Delta Depreciation$	0.5550	-0.1800	0.7348	2.47
				(0.0252)
ΔTax	1.9656	1.1815	0.7841	3.49
				(0.0031)
(Panel B) Mean of explanatory powers of yearly regressions				
Mean of R ² of Model for	Low B-T Conformity Countries	High B-T Conformity Countries		
	Mean	Mean	Differences	t-value
$\Delta Earnings$	0.0541	0.0333	0.0208	1.93
				(0.0710)
$\Delta Sales$	0.0271	0.0096	0.0175	2.76
				(0.0139)
$\Delta Depreciation$	0.0061	0.0052	0.0009	0.20
				(0.8423)
ΔTax	0.0423	0.0322	0.0101	0.85
				(0.4090)

Consistent with results in Table 5, the mean coefficient of changes in earnings is slightly higher in countries with low book-tax conformity. Mean coefficients of changes in sales, depreciation components, and tax components are significantly higher in countries with low book-tax conformity than in those with high book-tax conformity. Interestingly, however, the mean coefficient of changes in the depreciation component is positively related to stock returns in countries with low book-tax conformity. This positive sign can be interpreted as a result of investors

valuing firms whose depreciation expenses increase in countries with low book-tax conformity as related to the firm's higher level of investment in property and equipment, which results in higher depreciation expenses.

Table 9: Explanatory powers of earnings components models										
	Intercept	Δ Net Earnings	Δ Sales	Δ Depreciation	Δ Tax	Δ Other Components	Adjusted R ²	Differences ^a in R ²	Vuong's Z-Value	Sample size
<i>For Countries with High Book-Tax Conformity</i>										
Model for Δ Earnings	0.12887	0.51656					0.0412			19,354
	(<0.001)	(<0.001)								
Model for Δ Sales	0.12571		0.51781			-0.48981	0.0450	0.0038	3.26	19,354
	(<0.001)		(<0.001)			(<0.001)			(0.0011)	
Model for Δ Depreciation	0.13004			-0.83460		0.51464	0.0421	0.0009	1.92	19,354
	(<0.001)			(<0.001)		(<0.001)			(0.0550)	
Model for Δ Tax Expense	0.12492				0.21425	0.44202	0.0473	0.0061	3.44	19,354
	(<0.001)				(0.0012)	(<0.001)			(0.0006)	
<i>For Countries with Low Book-Tax Conformity</i>										
Model for Δ Earnings	0.05064	0.63204					0.0491			38,200
	(<0.001)	(<0.001)								
Model for Δ Sales	0.03902		0.64695			-0.58967	0.0576	0.0085	7.41	38,200
	(<0.001)		(<0.001)			(<0.001)			(<0.001)	
Model for Δ Depreciation	0.04522			-0.02597		0.64460	0.0512	0.0021	3.45	38,200
	(<0.001)			(0.6962)		(<0.001)			(0.0006)	
Model for Δ Tax Expense	0.04275				0.74396	0.51123	0.0615	0.0124	7.83	38,200
	(<0.001)				(<0.001)	(<0.001)			(<0.001)	
The numbers in parentheses represent p-values.										
^a Differences between R ² of the models for each earnings component and R ² of models for earnings										

Using a methodology similar to the approach of Fama and Macbeth (1974), I examine whether the explanatory powers of earnings components models are statistically higher in countries with low book-tax conformity than those in countries with high book-tax conformity. Table 8 (Panel

B) compares the means of explanatory powers of yearly regression models between the two groups. Explanatory powers of changes in earnings model and changes in sales are higher in countries with low book-tax alignment than in countries with high book-tax conformity. However, explanatory powers of changes in depreciation and taxes models are not statistically different between the two groups, although explanatory powers are slightly higher in countries with low book-tax alignment than in countries with high book-tax conformity.

I also test whether decomposing earnings into various components increases value relevance on stock returns and how they affect countries with high book-tax conformity versus countries with low book-tax conformity. In Table 9, Vuong's Z-values indicate that explanatory powers, measured by R^2 , significantly increase when earnings are decomposed into 'sales and other components' or 'taxes and pre-tax income,' meaning that regression models for earnings components have statistically incremental explanatory power as compared with the models for earnings in both countries with strong book-tax alignment and countries with weak alignment.

CONCLUSION

This study examines how book-tax conformity affects the value relevance of earnings across countries. I find evidence that changes in earnings are less value relevant in countries with high book-tax conformity than in those with low book-tax conformity, consistent with prior research.

I measure the value relevance of earnings components using the coefficients and explanatory power in return-earnings component regressions. Using a binary variable of book-tax conformity developed in prior research, I investigate whether the value relevance of changes in sales, depreciation, tax expenses, and other earnings components are associated with book-tax conformity across countries.

As hypothesized, empirical evidence reveals that sales, depreciation, and tax expenses components, measured by regression coefficients, are more value relevant in countries with low book-tax conformity. When the value relevance of earnings and earnings components are measured in terms of explanatory powers of regression models, changes in earnings and changes in sales are valued more in countries with low book-tax alignment than in countries with high book-tax conformity. Explanatory powers of the changes in depreciation and tax expenses models are slightly higher in countries with weak alignment between financial accounting, although those explanatory powers are not statistically different between the two groups of countries.

I also examine whether changes in tax expenses of the firms with high effective tax rates are more value relevant in countries with high book-tax conformity and find that, for the firms with high effective tax rates, explanatory power of stock returns-tax expenses regression is higher in countries with strong book-tax alignment. One possible explanation of this result is that firms with higher effective tax rates are more likely to attempt to reduce their tax expenses in countries with weak book-tax conformity, resulting in less value-relevant information reflecting in stock returns. Finally,

I find evidence that decomposing earnings into various components increases value relevance on stock returns in both countries with high book-tax conformity and countries with low book-tax conformity.

ENDNOTES

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EXPORT BARRIERS AND PERFORMANCE OF SMALL AND MEDIUM SIZE ENTERPRISES

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ABSTRACT

Using a sample drawn from exporting firms from the Eastern Townships of Canada, this study explores the barriers facing small and medium size enterprises. Using factor analysis this research has identified four constructs to explain barriers facing SME in export operations. These constructs include firm's specific barriers, institutional barriers, foreign market industry barriers, and lack of government support. Foreign market industry barriers and lack of home government support were seen as factors distinguishing between successful and unsuccessful exporting firms.

INTRODUCTION

Although the past two decades has seen a rapid growth on the SME literature, most of the literature on SME internationalisation has concentrated within international market entry, very little has dealt with the cost or processes of developing a foreign market for small businesses (Evangelista, 2005). The existing literature in this area is fragmented and does not provide a comprehensive approach to address the barriers to exporting (Leonidou, 2004). A detailed survey of studies addressing export barriers, has been well addressed by Leonidou (2004) and Tesfom and Lutz (2006). Most of these studies have been theoretical. The present study intends to contribute towards filling in this gap by investigating the barriers associated with building export markets by SMEs located in the Eastern Township and the factors influencing their successful export market development. More specifically this study intends to address the following research questions: What are the barriers constraining their export market development? What barriers can be attributed to the performance of exporting firms?

METHOD

Data was collected through a survey of exporting small and medium size firms located in the Eastern Townships. The study sample was drawn from a list of registered exporters from the Eastern Townships. From this list Only exporting firms with less than 500 employees were included in the contact list. A contact list of 275 SME exporters located in the Eastern Townships was identified where all 275 SMEs were first contacted by phone and later a questionnaire was sent to all respondent who accepted to take part in this survey. Out of that list, ninety respondents refused to

participate in this study for various reasons leaving a list of 188 firms from which constant contacts were made to encourage their response. Finally, after all the measures were exhausted only 71 positively responded to the questionnaire. However, after scrutiny of the responses only 64 cases were found eligible for analysis. This final number of cases used in this study represents a response rate of 23 percent of the original targeted population. Thirty eight percent of the firms in the sample were in the manufacturing of industrial goods while 25 percent were in the consumer durable industries and the rest were in the manufacturing of non-durables including health care and pharmaceuticals. The survey's main source of data was through a structured interview. Measures used in this study have been drawn from similar empirical studies on SME internationalisation. The measures are as shown in the attached questionnaire in the Appendix. To ensure adequate cooperation and accuracy of the data the questionnaires were first prepared in English then translated into French and from French into English again using independent translators. A bilingual approach was used to contact the respondents, respondents who preferred English were provided with an English questionnaire and those that preferred French received a French questionnaire. To analyse the barriers facing exporters, respondents were asked to measure the extent to which they experience problems regarding the variables listed in Table 3 below. These constraints have been drawn from the most frequently referred list of constraints (see Leonidou, 2004). As Table 3 illustrates

	Mean	Std. Deviation	Analysis N
Excessive Transport/Insurance Costs	5.77	3.112	62
Currency Risks	5.71	3.266	62
Difficulty in Matching Competitor's Prices	5.21	3.036	62
Lack of Managerial Time to deal with Exports	4.85	2.985	62
Lack of Home Government Assistance	4.73	4.913	62
Limited Information on Foreign Markets	4.56	2.526	62
Inadequate personnel for exporting	4.55	2.768	62
Strict Foreign Rules & Reg.	4.55	2.665	62
Adjusting export promo activities	4.50	2.844	62
Complexity of Foreign Dist. Channels	4.34	2.953	62
Access to Foreign Dist. Channels	4.34	2.746	62
Unfavorable Home Rules & Regulations	4.19	2.924	62
Unfamiliar Foreign Business practices	4.10	3.135	62
Politically Instable Foreign Markets	4.10	2.952	62
Shortage of Working Capital	3.85	2.833	62
Meeting Export Product Quality Standards	3.61	2.742	62
Maintaining Control over Foreign Middlemen	3.31	2.695	62

As illustrated in Table 1, the main barriers that highly affected SME in their export transactions were those related to marketing costs which include high transport and insurance costs, currency risks and the difficulty in matching competitor prices. The least problem concern for most firms were problems related to control over foreign middlemen, meeting quality standards and shortage of working capital. To determine the underlying factors all variables indicating export market barriers were then subjected to factor analysis using principal component analysis and varimax rotation. Result of the factor analysis is as shown in Table 2 below. Four factors emerged with eigen values greater than one. The four factors explained more than 70 percent of the total variance and all the variables had communalities greater than 0.5. The KMO measure for sampling adequacy was very good at 0.79. The Cronbach alpha test was used to test the reliability of factor measures. All the four factors had reliability alpha of more than 0.78.

Table 2				
	Communalities	Eigenvalues	% of Variance	Cumulative %
Limited Information on Foreign Markets	.699	7.853	46.196	46.196
Difficulty in Matching Competitor's Prices	.817	1.942	11.421	57.617
Excessive Transport/Insurance Costs	.796	1.205	7.090	64.708
Politically Instable Foreign Markets	.540	1.127	6.630	71.338
Access to Foreign Dist. Channels	.727	.828	4.871	
Unfavorable Home Rules & Regulations	.777	.630	3.703	
Currency Risks	.756	.534	3.143	
Strict Foreign Rules & Reg.	.680	.475	2.794	
Lack of Managerial Time to deal with Exports	.804	.432	2.543	
Inadequate personnel for exporting	.733	.399	2.349	
Shortage of Working Capital	.658	.319	1.874	
Complexity of Foreign Dist. Channels	.700	.268	1.579	
Adjusting export promo activities	.668	.264	1.552	
Lack of Home Government Assistance	.749	.225	1.325	
Unfamiliar Foreign Business practices	.784	.213	1.255	
Meeting Export Product Quality Standards	.592	.154	.904	
Maintaining Control over Foreign Middlemen	.648	.131	.769	

Table 3				
	Firm Specific Barriers	Institutional Barriers	Foreign Industry	Govt Barriers
Support				
Lack of managerial time to deal with exports	.869			
Inadequate personnel for exporting	.843			
Adjusting export promotional activities	.626			
Shortage of working capital	.617			
Meeting export product quality standards	.595			
Complexity of foreign distribution channels	.582			
Unfavorable home rules & regulations		.848		
Access to foreign distribution channels		.683		
Politically instable foreign markets		.671		
Strict foreign rules & regulations		.636		
Difficulty in matching competitor's prices			.899	
Excessive transport/Insurance costs			.848	
Currency risks			.600	
Limited information on markets			.533	
Lack of home government assistance				.821
Unfamiliar foreign business practices				.548
Maintaining control over foreign Middlemen				.491
<i>Cronbach Alpha</i>	<i>.891</i>	<i>.812</i>	<i>.797</i>	<i>.787</i>

Using the above same procedure, measures for SME performance were subject to factor analysis and the results are as seen in Tables 6 and Table 7. Two factors emerged with eigen values greater than one. These factors explained 80 percent of the total variance.

	Communalities	Eigen Values	% of Variance	Cumulative %
Sales Level	.887	4.163	59.471	59.471
Sales Growth Rate	.879	1.419	20.274	79.745
Cash Flow	.515			
Gross Profit	.847			
Net Profit from Operations	.823			
Return on Investment	.841			
Ability to Fund Business Growth from Profits	.790			

Based on the composition of variables in each factor we can confidently suggest that the first factor measures the firm's profitability while the second factor measures the firm's sales performance.

	Profitability	Sales
Ability to Fund Business Growth from Profits	.876	.152
Return on Investment	.869	.293
Gross Profit	.851	.351
Net Profit from Operations	.832	.360
Cash Flow	.705	-.136
Level of Sales	.159	.928
Sales Growth Rate	.157	.924
Cronbach Alpha	.905	.902

To determine the relationship between export barriers and firm performance the four measures for export barriers and the measure for sales performance were subject to a two cluster solution. The cluster solution emerged with two clusters with one cluster having 35 cases and the second cluster having 24 cases see (Table below).

From the distribution of final cluster value it is clear that the first cluster is the group of successful firms as measured in sales performance. The analysis shows successful firms to be highly influenced by foreign market industry barriers and government assistance. However, there was no significant relationship between firm performance and firm specific barriers or institutional barriers.

These findings suggest that firms are likely to succeed in the government is involved in easing the company's foreign industry market barriers.

	Successful	Unsuccessful	Significance
Performance in sales	.30255	-.40923	.007
Firm specific barriers	-.04282	.14829	.477
Institutional barriers	.16369	-.21459	.141
Foreign market industry barriers	.62753	-.83127	.000
Lack of home govt assistance	.01671	-.37079	.014
Number of cases	35	24	

CONCLUSION

Using a sample drawn from exporting firms from the Eastern Townships of Canada, this study has identified four constructs to depict barriers facing SME in export operations. These constructs include firms specific barriers, institutional barriers, foreign market industry specific barriers, and lack of government support. Foreign industry barriers and lack of home government support were seen as major factors distinguishing between successful and unsuccessful firms. The increasing value of the Canadian Dollar as well as the increasing rises in oil prices may have contributed greatly to affecting the competitiveness of Canadian exporters. To overcome these constraints policy makers may have to find measures that would assist SMEs with emphasis in mitigating these constraints. Future research can build upon the constructs emerging in this study to a different sample.

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ATTRACTING FOREIGN DIRECT INVESTMENTS: CHALLENGES AND OPPORTUNITIES FOR SMALLER HOST ECONOMIES

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ABSTRACT

This paper reviews the post-1997 literature on foreign direct investments (FDIs, henceforth) in general and on host country government policies toward FDIs, in particular, with emphasis on the literature on FDI incentives. It then discusses the challenges faced by smaller host economies and their governments in their efforts to attract FDIs in an environment where many other governments are adopting similar strategies to compete for FDIs. The opportunities available to them are also discussed.

INTRODUCTION

The Asian financial crisis of 1997 reminded many in the international community that foreign capital inflows come in different forms and that some of these forms are more desirable than or preferred over other forms. From the perspective of a recipient or host country, these different forms of foreign capital inflows have different impact on its economic development.

With several episodes of foreign debt crises by a single country or a group of countries from which to draw, the lesson has been clear that successful use of foreign loans required skillful management of the resulting debt on the part of the borrowing country. This success increases with the share of foreign loans that actually finances investment, the productivity of that investment, and the ability of the borrowing country to generate the currency in which foreign loans are to be serviced.

Foreign portfolio capital inflows are usually short-term in orientation and evidently too mobile that they can and do easily and quickly flee from a recipient country at the first sign of trouble. From past experiences, we have seen how such sudden movement in this type of foreign capital had devastating effects on countries from which they were fleeing and challenged policymakers to search for measures to minimize such effects.

The lesson is clear and the verdict is out: comparatively speaking, foreign direct investments (FDIs, henceforth) are the preferred form of foreign capital inflows. Nunnenkamp (2001) noted that FDIs are superior to other types of capital inflows because of their longer-term orientation and hence their stability, their higher likelihood of being used productively, their risk-sharing properties, and their greater likelihood of increasing the level of aggregate investment and economic development

in the host country. In addition, he noted that “FDI is more than just capital as it offers access to internationally available technology and management know how”, which can potentially spill over to domestic firms and result in higher productivity (quote taken from Nunnenkamp (2001), page 3).

Consequently, countries seek out this preferred form of foreign capital, FDI, thus competing fiercely against each other. This competition is further intensified by the continued globalization of markets which makes foreign capital in general and FDIs in particular even more mobile. Such mobility gives foreign direct investors, mostly multinational corporations (MNCs, henceforth), bargaining power over prospective host country governments as they choose their investment location.

At the same time, globalization has limited the policy options available to host country governments by which they could attract FDIs (Blomstrom and Kokko (2008)). For instance, the liberalization of trade in goods and services in many countries has limited national government’s use of trade policy to attract FDIs. In the past, import restrictions led to FDIs that were “tariff-jumping” (Palmade and Anayiotas (2004)). These are investments that are export-oriented but are better able to access the domestic market by locating there in order to avoid the costlier import restrictions, including prohibitive tariffs. Globalization has reduced these trade restrictions and favored a movement toward more open trade and away from use of trade policies, including those that resulted in higher FDIs.

Globalization has meant liberalization of product markets as above noted but also of capital markets. As a result, host country governments that previously used exchange rate policies to attract FDIs now face pressure to limit their foreign exchange intervention and to adopt a more market-determined exchange rate system. Adding to this is the fact that the continued development of markets for financial derivatives has also equipped MNCs with many ways to reduce exchange rate risks associated with undertaking FDIs, thus diminishing the importance of exchange rate, and exchange rate policies, as a determinant of their locational decision regarding their FDIs.

With both trade and exchange rate policies of limited use to many host country governments, they needed to make greater use of those policy measures that they can control in order to attract FDIs. All of these combine to explain the proliferation of FDI incentives, and the greater competition among host country governments have made these incentives increasingly generous over time. Morisset and Pirnia (2001) note that “fiscal incentives have become a global phenomenon” (page 71), having grown since the early 1990s.

It is in this environment that many countries and their governments have to operate and find a balance between the challenges they face and the opportunities that are available to them in their pursuit of FDIs.

The paper is organized as follows. The next section will present a selective review of literature on FDIs and host country policies, with particular focus on FDI incentives and on studies published after the 1997 Asian crisis. This will be followed by a discussion of the challenges and

opportunities for small host countries and their governments. Summary and concluding comments will be made in the final section of the paper.

REVIEW OF FDI AND RELATED LITERATURE

The review of the literature presented in this section is selective, rather than comprehensive, as it focuses on studies undertaken after the 1997 Asian crisis and on two specific issues: Do FDIs benefit host countries, if so, in what way? What factors are most effective in attracting FDIs into a host country?

Several studies answer this question in the affirmative. Blomstrom and Kokko (2008) point to benefits generated by FDIs in the form of higher employment, exports, tax revenue, bring knowledge and technology that will spillover to domestic firms, thus promoting economic growth. Miyamoto (2003) focuses on the interaction between human resource development and FDIs and how the former contributes to the host country's economic growth directly and also indirectly through its complementary effect on FDIs. Still others attribute the positive impact of FDI on the host country's economic growth through the increase in overall productivity as well as on domestic firm's productivity. Palmade and Anayiotas (2004) state that "in almost all cases, FDI had a largely positive impact on productivity" (page 4). Two channels by which FDIs lead to higher host country productivity have been clearly identified in the literature: the competition channel and the knowledge and technology spillover channel. As Blomstrom and Kokko (2001) point out, the increased competition brought on by FDIs have made domestic firms more productive.

The theoretical basis for the second channel is clear: FDIs bring with them knowledge and technology that spill over to domestic firms through FDIs interaction with domestic firms, through domestic firms imitating FDIs and through domestic firms hiring workers trained by FDIs. However, the evidence on the presence of knowledge and technology spillovers is mixed. This finding is important in that the most compelling theoretical justification for host country government's use of FDI incentives rest on the assumption of an externality, in this case, the spillover of knowledge and technology from FDIs to domestic firms. Of course, FDI incentives can and do exist independently of a theoretical basis. In fact, many host country governments justify FDI incentives on other grounds (for example, to increase the level of aggregate investment or to create domestic jobs (Haaparanta (1996) cited in Blomstrom and Kokko (2008)).

Morisset and Pirnia (2001) suggest that spillovers, if they exist, can have a greater impact on the host country's economy

- ◆ The greater the degree of linkage (including competition) between foreign MNCs and domestic firms
- ◆ The greater the orientation of MNCs to the local market
- ◆ The higher the level of host country's competence, including the technological capacity and learning and R&D efforts of domestic firms to absorb spilled knowledge, human capital

Having established that FDIs contribute positively to host country's economy and hence are desirable and often sought after by host countries, we then ask the question of what factors are most effective in attracting FDIs? What are the major determinants of FDIs? Might these factors or determinants include FDI incentives, and thus, more to the point, are FDI incentives effective in attracting FDIs?

Many studies (Morisset and Pirnia (2001), Nunnenkamp (2001), Miyamoto (2003)) point to economic fundamentals and political stability as the primary determinants of FDIs, with FDI incentives being a consideration only at the margin. The most effective way to express this is to say that FDI incentives, especially tax exemptions, are "like a dessert; it is good to have, but it does not help very much if the meal is not there" (Morisset and Pirnia (2001), page 76).

Morisset and Pirnia (2001) conclude that "incentives will generally neither make up for serious deficiencies in the investment environment nor generate the desired externalities... most serious investors are often unaware of the full range of incentives on offer when they invest" (page 97).

Nunnenkamp (2001) remarks that "policymakers should be aware that various measures intended to induce FDI ... are unlikely to do the trick... Fiscal and financial incentives offered to foreign investors may do more harm than good by giving rise to costly "bidding wars"" (page 1).

Miyamoto (2003) notes that using FDI incentives to attract high value-added FDIs might work in the short-run but offers the caveat that "high value-added FDIs are not attracted solely by tax incentives" (page 40).

Morisset and Pirnia (2001) clarify the above conclusion by saying that "it is not true that tax policy and incentives fail to attract investors; they do affect the decisions of some investors some of the time" (page 81).

Figure 1 by the UNCTAD and presented by Nunnenkamp (2001, page 10) shows that importance of overall policy framework (including the often-cited economic and political stability) and business facilitation for any type of FDI (including FDI incentives). These are supplemented by more determinants that are specific to the type of FDI.

The above figure clearly shows that FDI incentives, which appear under Business Facilitation, by themselves will not attract FDIs but can work when complemented with other factors. Nunnenkamp (2001) notes that the shift toward efficiency-seeking FDIs requires that "FDI incentives focus on cost differences between locations, quality of infrastructure and business-related services, the ease of doing business, and availability of skills." Morisset and Pirnia (2001) point to importance of "long-run strategies of improving human and physical infrastructure and, where necessary, streamlining government policies and procedures, thereby increasing the chances of attracting investment on a genuine long-term basis" (page 97)"

Figure 1: Selected Host Country Determinants of FDI

<i>Overall Policy Framework</i>		<i>Business Facilitation</i>	
→ economic and political stability		→ administrative procedures	
→ rules regarding entry and operations of TNCs		→ FDI promotion (e.g. facilitation services)	
→ bi- and multilateral agreements on FDI		→ FDI incentives (subsidies)	
→ privatization policy			
<i>Economic Determinants^a</i>			
1. Relating to resource-seeking FDI	2. Relating to market-seeking FDI	3. Relating to efficiency-seeking FDI	
→ raw materials	→ market size	→ productivity-adjusted labor costs	
→ complementary factors of production (labor)	→ market growth	→ sufficiently skilled labor	
→ physical infrastructure	→ regional integration	→ business-related services	
		→ trade policy	
^a Differentiated by major motivations of FDI.			

Source: Adapted from UNCTAD (var. issues 1998: Table IV.1).

It is also important to remember that FDI decisions are a two-stage decision: MNCs identify the region or a short list of potential host countries (stage 1), then choose one or a few from this list (stage 2). FDI incentives are found not to be significant at stage 1 but can affect final locational choice at stage 2. Morisset and Pirnia (2001) cite Forsyth (1972) who said that once other factors led to the decision, then locational decision may be strongly affected by FDI incentives. Nunnenkamp (2001) also pointed to the two-stage process of FDI decision: “after the location is broadly determined and potential candidates within a region are short-listed according to economic fundamentals, the final site selection may be influenced by fiscal and financial incentives.”

There are also suggestions in the literature of a shift toward the belief that FDI incentives play a more important role in influencing FDI location decisions. Blomstrom and Kokko (2008) found support for this in more recent MNCs executives surveys and in econometric studies (Taylor (2000), cited in Blomstrom and Kokko). Palmade and Anayiotas (2004) suggest convergence of macroeconomic fundamentals and greater importance of microeconomic conditions, including FDI incentives available to certain sectors.

Although the literature does not give a definitive answer in regards to the effectiveness of FDI incentives in attracting FDIs into host countries, it is useful in prescribing how to increase the effectiveness of FDI incentives. For instance, Morisset and Pirnia (2001) find that FDI incentives are more effective in affecting the FDI decisions of the following:

- ◆ *export-oriented firms because they operate in more competitive markets and are also more mobile and hence more tax-sensitive*
- ◆ *new firms, especially if FDI incentives can help reduce initial expenses*

- ◆ *small investors who, unlike large investors, are less able to develop sophisticated tax avoidance strategy or negotiate special tax treatments from host country (Coyne (1994), cited in Morisset and Pirnia (2001))*
- ◆ *FDIs that are financed by retained earnings than those financed external funds (debt or equity)*
- ◆ *firms operating in multiple markets that can take advantage of opportunity to cross-subsidize or transfer-price*

CHALLENGES AND OPPORTUNITIES FOR SMALLER HOST ECONOMIES

This section draws from the literature review in the preceding section to identify the challenges and opportunities for smaller host economies and their governments as they aim to attract FDIs as a means to achieve short-term and long-term economic goals. The literature points to very few success stories of small economies: Ireland (Morisset and Pirnia (2001), Blomstrom and Kokko (2008)), Sweden (Blomstrom and Kokko (2008)), Singapore (Morisset and Pirnia (2001), Miyamoto (2003)), Costa Rica (Miyamoto (2003)).

Challenges

Host country governments in general, and those of smaller economies, in particular, face many challenges. A number of them have already been mentioned in earlier sections, including the tough competition they face from other host countries, small and large, partly because FDIs are highly mobile and MNCs can choose among a wide range of locations, each with its own economic and political characteristics and many with a varying degree of government-offered incentives.

Faced with tough competition from other host countries, a government would like to offer the most generous FDI incentives but is limited by fiscal and political constraints. Fiscal constraints are greater for smaller economies as government resources are limited with many competing demands, a tax system that is usually less developed or sophisticated, an economic structure that is not as diversified, and political factors that are more important in affecting aggregate investment in developing countries than in advanced economies (Pindyck and Solimano (1993)).

Public support for FDI incentives improves with the ability to provide evidence that such FDI incentives are effective in attracting FDIs, on the assumption that FDIs assist in achieving the host country's economic goals. The challenge becomes how well and accurately the benefits and costs associated with FDI incentives can be calculated. As Blomstrom and Kokko (2008) note, the implicit assumption has been that knowledge and technology spillovers (external benefits) are sufficiently large relative to the cost of FDI incentives (page 9). The more difficult issue to address is one put forth by Morisset and Pirnia (2001): "whether the new foreign investment would have come to the country if no or lower incentives were offered", if so, then there is no net benefit to the host country (page 93).

One of the biggest challenges faced by host country governments is how to show, not assume, that FDIs contribute positively to the host country's economic development. As noted in the previous section, the literature provides a more definitive answer that FDIs contribute positively to the host country's economy than in explaining how this positive impact comes about. The difficulty comes from showing evidence of the benefits enjoyed by domestic firms and the host country's economy in the form of knowledge and technology that spill over from FDIs and in turn increase productivity. It is much easier to show, through a multiplier model, for example, that FDIs enhance the host country's employment, tax revenues, exports and technological and knowledge levels.

Another challenge for host countries is to make it further in the location decision process by MNCs. As noted by Nunnenkamp (2001) and Morisset and Pirnia (2001), MNCs employ a two-stage process in deciding on FDI: they identify the region or a short list of potential host countries (stage 1), then choose one or a few from this list (stage 2). Obviously, to get to stage 2, host countries must make it to stage 1. This suggests that there are benefits from host countries within a region to work together to make the region sufficiently attractive to FDIs so as to make it to stage 1, after which host country governments compete fiercely by offering FDI incentives in the hopes of being the location chosen by FDIs they want to attract.

Opportunities

This is not to say that attempts to address these challenges are not without rewards. On the contrary, the ability of host country governments to effectively respond to the above challenges increases their success in pursuing opportunities that are present and available to them. Post-2003 trends in FDIs bring good news to many developing countries, including smaller economies.

FDIs, which declined after 1999, have been on the rise since 2003 (Kearney (2007)). This means that, although many host countries compete to attract FDIs, there has also been an increase in the amount of FDIs for which to compete. In short, although the demand for FDIs by host countries has increased, the supply of FDIs has also increased so that there is potential for each host country to see an increase in FDI inflows in absolute terms, although not necessarily in relative terms. Using the terminology of Nunnenkamp (2001), the situation need not lead to "FDI-diversion" but instead there is opportunity for "FDI-creation" (these terminologies are parallels of "trade-diversion" and "trade-creation".)

Another good news for developing countries that are prospective hosts to FDIs, many of which are smaller economies, is an evidence of a shift in FDI inflows in favor of developing countries (Nunnenkamp (2001)). This is in marked contrast to the former preference toward developed host countries. This gets even better by noting the increase in FDI inflows to developing countries originating from other developing countries, sometimes described as "South-South FDI". As Palmade and Anayiotas (2004) note, this type of FDI is beneficial because "these new players

tend to be better equipped to invest in difficult and remote markets and to develop products and services better adapted to developing country consumers.” All of these developments increase the likelihood of smaller host economies in attracting FDIs.

Several authors (Nunnenkamp (2001), Miyamoto (2003), Blomstrom and Kokko (2008)) noted that globalization has diminished the importance of the size of the domestic market in MNC’s locational choice for FDIs. In the past, MNCs chose to locate in countries with large domestic markets, with the intention of producing for this market. FDIs with this motivation are referred to in the literature as “market-seeking FDIs”. As markets become more integrated at a regional or global level and with trade and capital markets being liberalized, the size of the market is no longer restricted to the domestic market, and MNCs have paid less attention to this factor in regards to their FDI decisions. Consequently, the motivation for FDIs have shifted from “market-seeking” to “efficiency-seeking”, “motivated by creating new sources of competitiveness for firms and strengthening existing ones” (Nunnenkamp (2001)). Again, this is favorable development for smaller economies, especially those that are highly integrated with the global economy, as they now have as good a chance of being selected as FDI destination as larger economies.

Palmade and Anayiotas (2004) see an opportunity for host countries to attract FDIs into the service sector. They identify the following factors as being attractive to these types of FDIs:

- ◆ *stable and smart regulatory environment for quasi-natural monopolies*
- ◆ *functioning land markets for retail, hotels and construction*
- ◆ *“protection” from unfair competition from tax-evading, low-productivity informal players*

In a survey of MNC executives in several countries and across different economic sectors, Kearney (2007) found that Asian and European investors prefer to invest within their own regions. This presents opportunities for attracting FDIs for developing countries within Asia, in particular.

According to Nunnenkamp (2001), small developing economies should open up early to FDI inflows and increase its integration into world trade in order to enhance FDI’s positive contribution to economic growth.

SUMMARY AND CONCLUSION

It is an opportune time for many host countries, including smaller economies, to attract FDIs and make them instrumental in their pursuit for economic development and the improvement in the welfare of their citizens. As noted in the beginning of the paper, one policy instrument continues to be in their government’s control, FDI incentives. Despite strong skepticism in their effectiveness in the past, there is now a rich literature from which to draw lessons on how to make FDI incentives more effective. These lessons are outlined here in brief and are a starting point in creating a guideline for the design of FDI policies in host countries:

FDI incentives must be based on rules, not discretion, thus making them more broad and general, usually a part of a more comprehensive economic development strategy, as opposed to being specific and selective (Blomstrom and Kokko (2008), Palmade and Anayiotas (2004), Nunnenkamp (2001), Morisset and Pirnia (2001). This means that FDI incentives will be available to all economic sectors and to all firms, domestic and foreign. On a more operational level, this suggests that the host country government's decision to grant FDI incentives to any prospective recipient must be based on clearly defined criteria that are applied in an objective, a consistent and a systematic manner as opposed to being subjective, haphazard and arbitrary.

FDI incentives must be complemented by favorable overall policy framework that focus on economic and political stability, provide physical, human and institutional infrastructure and reduce the cost of doing business in the host country (Blomstrom and Kokko (2008), Morisset and Pirnia (2001). It is this more conducive business environment that addresses the first stage of MNC's decision making, without which the second stage will not be reached, the stage when FDI incentives appear to have a greater effect.

FDI incentives must be complemented by measures to create and enhance local competence, especially in ways that will allow the domestic labor force to absorb the knowledge and technology brought by FDI (Blomstrom and Kokko (2008), Miyamoto (2003). This way, the spillover and productivity effects of FDI that are so widely discussed in the literature can be enhanced.

FDI incentives must aim to create a virtuous cycle brought about by the complementary relation between human resource development and high value-added FDI. This recommendation highlights the point that some FDI are more desirable than others and some level of "FDI targeting" might be desirable. Note that such targeting is not inconsistent with the earlier proposed use of general instead of selective policy. To this end, Miyamoto (2003) suggests that "governments that emphasize flexible demand-driven human resource development strategies, target MNCs in high value-added areas, and coordinate education and training policies are more likely to lead the country into a virtuous circle" (page 42).

Similarly, some FDI are more responsive to incentives than others. Therefore, host country governments must find a way to redesign their FDI incentives program so that it targets those FDI that are likely to be more responsive to the FDI incentives being offered. By doing so, the effectiveness of their FDI program can be enhanced.

According to Morisset and Pirnia (2001), the following types of FDI are more likely to respond to host country incentives:

1. export oriented because they operate in more competitive markets and are also more mobile
2. small investors rather than do not have sophisticated tax avoidance strategies that large investors have
3. FDI that operate in multiple markets as they have the opportunity to use strategies such as cross-subsidization and transfer-pricing in order to maximize their overall profits

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THE NAIROBI STOCK EXCHANGE AND NEW EQUITY CAPITAL: 1998 TO 2004

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ABSTRACT

This study examines the capital structure of all the companies listed on the Nairobi Stock Exchange (NSE) and compares the sum of stock market activity against aggregate information for Kenya as a whole, to get a sense of the scale of its activity. We will attempt to differentiate between those companies that needed capital for expansion and those that did not. In respect of expanding companies we will attempt to identify how they financed their expansion. We will focus on three main categories of sources of finance: primary market transactions (that is, new share issues); organic growth (through the ploughing back of profits); and lastly, borrowing. In this way we will make an informed judgment of the way the NSE has contributed to the raising of capital and the development of the economy. Our findings indicate that although the company's listed in the NSE have registered an enormous growth during the period under review, much of this has been financed through borrowed capital and retained profits. We therefore conclude that the NSE has failed in its primary objective of helping investors to raise capital. Furthermore there is little evidence to suggest that the NSE has contributed to the economic development of Kenya.

INTRODUCTION

The objectives of any stock exchange include two interlinked concepts. Their primary market role is to facilitate the movement of capital from savers to investors. In process of the primary market activities they will often aggregate the resources of small individual savers into sufficiently large capital sums that they can be successfully invested by commercial companies. In their secondary market role, by facilitating transactions between willing buyers and sellers they establish fair market prices for existing shares (the efficient markets hypothesis). In turn, this secondary market role of share pricing enables (primary market) new share issues to be priced at, or close to, fair market prices, thus militating against disadvantaging the issuers or the buyers of those new shares. The two roles are, therefore, interdependent.

The nature of the stock markets of developed countries need no rehearsal here: suffice it to say that the stock exchanges of New York, London, Tokyo and so on have been material positive factors in the burgeoning economies of the USA, Europe and certain parts of Asia for many years past.

Some parts of the developing world have also used stock exchanges as vehicles of development, with perhaps China and India being the most obvious recent examples. The Shanghai Stock Exchange (SSE) was founded on 26th November 1990 (Devonshire-Ellis, 2007). At the end of 2005, the SSE boasted 1069 listed securities and 834 listed companies, with a combined market capitalization of RMB 2,310 billion (SSE, 2005). In 2005, listed companies raised RMB 3 billion on the SSE through Initial Public Offerings (IPO) and share placements (SSE, 2005). There were a total of 131 new listings between 2003 and 2005 (SSE, 2005)

Stock exchanges in Africa appear to have missed out on many of the opportunities seized elsewhere. Although there is a long history of stock exchanges in African nations, some going as far back as colonial times, their growth rates have generally been slow, or even stagnant, and their role in capital mobilization appears, in many cases, to have been negligible.

Quoting data from the World Bank's Financial Structure database, Honahan and Beck list fifteen stock exchanges active in sub-Saharan Africa (i.e. ignoring the substantial and active stock exchanges in Mediterranean Africa, such as those in Morocco, Tunisia and Egypt).

Country:	Number of listed firms	Market Cap. % of GDP	Value Traded % of GDP	Turn-over %	Zero return weeks % of total	Concentration of firms	Number of listed corporate bonds
Botswana	25	27.2	0.6	2.1	-	0.21	17
Côte d'Ivoire	39	12.3	0.3	2.5	-	0.21	-
Ghana	30	23.7	0.8	3.2	70	.12	3
Kenya	47	26.1	2.1	7.9	41	0.20	-
Malawi (2002)	8	9.2	1.3	14.1	-	-	0
Mauritius	41	36.0	1.6	4.4	48	0.12	1
Mozambique	1	30.0	0.0	0.0	-	-	-
Namibia	13	6.9	0.3	4.7	57	0.39	4
Nigeria	207	16.7	2.3	13.9	67	0.08	
South Africa	403	170.5	76.5	44.9	13	0.06	
Swaziland	6	8.3	0.0	0.0	-	-	2
Tanzania	6	6.2	0.2	2.5	-	-	6
Uganda	5	1.4	0.0	0.2	-	-	-
Zambia	13	8.0	0.1	1.5	-	-	0
Zimbabwe	79	41.3	2.9	7.0	37	0.08	-

The NSE was established in 1954: only South Africa (1887) and Zimbabwe (1896) are older. The remaining exchanges were all established in the last 25 years of the 20th century. Of those fifteen stock exchanges South Africa is clearly an outlier, while Kenya is typical of the other fourteen. These all share the following features: a limited number of stocks is listed, market capitalization is a small percentage of GDP, value traded is a small percentage of GDP, turnover is low, the concentration of firms is low and few bonds are listed. Parkinson (1984) examined the NSE in the context of development in Kenya. He reported that the NSE failed to make enough issues to satisfy savers' demands. Earlier Yacout (1980) had noted the heavy oversubscription of new issues in Nigeria and concluded that; there too, available savings were greater than new stock market issues. In this article we will focus on the Nairobi Stock Exchange (NSE). The method is to examine the capital structure of all the companies listed on the NSE. We will attempt to differentiate between those companies that needed capital for expansion and those that did not. In respect of expanding companies we will attempt to identify how they financed their expansion. We will focus on three main categories of sources of finance: primary market transactions (that is, new share issues); organic growth (through the ploughing back of profits); and lastly, borrowing. In this way we will make an informed judgment of the way the NSE has contributed to the raising of capital and the development of the economy.

We will also set the compare the sum of stock market activity against aggregate information for Kenya as a whole, to get a sense of the scale of its activity.

PREVIOUS RESEARCH

According to the Efficient Markets Hypothesis (EMH) all relevant information is immediately and accurately impounded in the market prices of shares. If the EMH holds true it is not possible to make an abnormal return by trading on the basis of available information. For a detailed discussion of the history and early development of the EMH see Fama (1970).

Empirically the EMH is tested in three forms: weak form; semi-strong form and strong form. A typical weak form test would be to check for any serial correlation between share prices on consecutive dates. The absence of serial correlation implies that the share prices are performing a random walk. It is generally agreed that stock prices are weak form efficient. A typical semi-strong form test would be to examine the behaviour of a share price immediately before, during and immediately after a known event such as an earnings announcement or a takeover agreement. As with weak form tests, there is extensive support for semi-strong form efficiency, particularly in respect of the stock markets of the developed world. The strong form of the EMH states that all information, public and private, is fully and immediately impounded in share prices. As it is not possible, by definition, to know all the private information, the strong form is not a testable hypothesis.

In this study we are not so much interested in technical efficiency, though that has been assessed by Dickinson and Muruga (1994) and Parkinson (1987) in respect of the NSE. As is observed in both those studies, even if the market deviates somewhat from technical efficiency, the thinness of market trading militates against investors being able to profitably trade on that knowledge. We are more interested in the question asked by Samuels and Yacout (1981). Their question, put in the context of Nigeria was: what contribution did the stock exchange make to the mobilization of capital and the development of the economy?

The purpose of a stock exchange in the developing country context is nicely put by Sudweeks (1989).

“Financial development work should respond to specific development objectives of individual countries. These are to contribute to faster, sustainable and socially equitable economic growth. These can be achieved through intermediation (bringing together both investors and borrowers), efficient allocation (allocating resources to their most productive use), adequate savings mobilization (mobilizing savings through financial instruments, rather than real assets), stability (absence of financial crisis, effective term transformation, and adequate risk capital), adequate accumulation of retirement funds for investors’ nonproductive years), and social equity through broad access (allowing all members of society an opportunity to access the financial markets). An efficient and stable financial system will involve the creation of many different types of financial institutions and instruments. This ensures a reasonable distribution of savings among short-term (deposit-type or money market) instruments, long-term debt instruments (bonds) and risk capital (stocks and related instruments) to meet the overall financing needs of the economy.” (Sudweeks, 1989, p 4)

One of the dimensions of any stock exchange is its relationship to the economy in which it operates. Useful comparative statistics are somewhat problematical here, but one useful source is the World Bank Data which shows the market capitalization of stock market securities by country, area and for the world as a whole.

“Definition: Market capitalization (also known as market value) is the share price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the country’s stock exchanges at the end of the year. Listed companies do not include investment companies, mutual funds, or other collective investment vehicles.” (World Bank, 2007).

Honahan and Beck (2007, p. 51) indicate that, for the eight most active stock exchanges in Africa other than Johannesburg (that is: Botswana, Côte d’Ivoire, Ghana, Mauritius, Mozambique, Namibia, Nigeria and Zimbabwe) the stock market capitalization as a percentage of GDP rose from about 13% in 1994 to about 23% in 2005.

The NSE is a country with one of the lowest ratios of stock market capitalization to GDP. In 2000 it was 10.1%, compared to 89.3% for the world as a whole: by 2005 it had increased to 34.1%, which, though a substantial increase over 2000, was still a small fraction of the 137% recorded for the world as a whole (World Bank, 2007). The logical conclusion is that while the role

of stock markets generally is on a growth trajectory everywhere, including Africa, the NSE plays a comparatively minor role in the economy of Kenya.

By the end of 2004, the NSE had a total of 49 listed companies. These were classified into two market segments; The Main investments Market Segment (MIMS) and the Alternative Investment Market Segment (AIMS). The MIMS represents the main quotation market and has more stringent eligibility, listing and disclosure requirements (Wangacha, 2001). As at the end of 2004, this segment had 44 listed companies, which are further classified into four categories (agricultural, Commercial and services, Banking and Financial and Industrial and allied segments) (NSE, 2004). The AIMS has the same strict disclosure requirements as the MIMS but has a lower entry and continuance requirements with respect to minimum assets, share capital and shareholders. By the end of 2004, this segment had only five companies (NSE, 2004)

Overall statistics for the NSE are summarized in table 2. This shows, for the years 1998 to 2004, the book value of total assets for all companies listed on the NSE, broken down into debt and equity, and the equity broken down into shares and reserves. Reserves, in this context, are predominantly retained earnings, but also include other monies set aside out of earnings, whether legally distributable (such as a general reserve) or legally not distributable (such as a revaluation reserve).

STUDY FINDINGS

Table 2 show the equity raised by companies in the agricultural segment and the changes in their total assets during the period 1998-2004.

Table 2: Agricultural sector (Kshs. million)				
Equity type	1998	2004	Change	Percentage
Share Capital	1077	1077	0	0%
Retained earnings	8936	6846	2090	(23.4%)
Debt	2309	4363	2054	88.9%
Total assets	12321	12286	35.6	(-3%)

According to the results companies in the agricultural sector did not obtain any equity capital during the period under review. Indeed these companies borrowed over Kshs. 2 billion outside the NSE to finance operating losses.

Table 3 show the equity raised by companies in the Commercial and services segment and the changes in their total assets during the period 1998-2004.

Equity	1998	2004	Change	Percentage
Share Capital	3331	3557	226	6.7%
Retained Earnings	7467	12599	5132	68.7%
Debt	13608	31110	17502	128.6%
Total Assets	24406	47266	22860	93.7%

Companies in this segment registered significant growth during the period under review. The total assets increased by over Kshs. 22 billion (93.7%). However only Kshs 226 million was raised through the NSE. Most of the expansion was financed through debt. It is to be noted that out of the nine companies in this segment only two companies issued shares to the public during this period (Appendix 1).

Equity	1998	2004	Change	Percentage
Share Capital	6598	14867	8269	125.3%
Retained Earnings	26595	28,488	1,893	7.1%
Debt	210155	312591	102435	48.7%
Total Assets	243,349	355,947	112598	46.3%

According to the results in Table four the total assets of banking sector increased by over Kshs. 112 billion during the period under review. Eight out of the 11 companies in this sector issued shares through the NSE raising a total of Kshs. 8.2 billion. However this amount is insignificant when compared to the Kshs. 102.4 billion that was raised through debt to finance expansion.

Equity	1998	2004	Change	Percentage
Share Capital	8862	10688	1826	20.6%
Retained Earnings	50154	57139	6985	13.9%
Debt	40851	51144	10293	25.2%
Total Assets	99,868	118972	19104	19.2%

This is the largest segment in the NSE with a total of 20 listed companies. During the period under review ten of these companies issued share to the public through the NSE. A total of Kshs. 1.82 billion was raised. We however note that the total assets in this segment increased by over

Kshs. 19.1 billion. Fifty-four percent of this expansion was finance through debt which increased by about Kshs 10.3 during this period.

Equity	1998	2004	Change
Share Capital	134	57,629	57495
Retained Earnings	1616	-50071	-49909
Debt	1062	116443	115381
Total Assets	2813	124001	121188

The alternative segment had five listed companies. During the period under review, one company (Kenya Orchards Ltd) made an IPO which raised over Kshs. 57 billion. However most of the capital was used to finance operating losses that increased by over Kshs. 52 billion during the period. Overall the total assets in this sector increased by about Kshs. 121 billion. Much of this expansion was financed through borrowing, which increased by over Kshs.115 during the period under review.

Equity	1998	2004	Change	% of total assets
Share Capital	19868	30189	10320	6.6%
Retained Earnings	93,150	105074	11923	7.7%
Debt	266,923	399,209	132285	85.7%
Total Assets	379942	534472	154529	100%

Table 7 summarizes the changes in equities and total assets of the companies listed in the MIMS. According to the results only 6.6% of the expansion in this market was finance through new equity capital. Eight-seven percent of the changes in total assets acquired during this period was finance through borrowing which increased by over Kshs.132 during the six year period. In total 22 of the 44 companies in this segment issued new shares during the period (appendix 1). However these issues only raised Kshs. 10.3 billion which is insignificant when compared to the total investment in assets of Kshs. 154.5 billion during the period.

CONCLUSION

This study addressed the issue of whether the NSE has contributed to the raising of capital and hence the economic development in Kenya. Our findings indicate that although the company's

listed in the NSE have registered an enormous growth during the period under review, much of this has been financed through borrowed capital and retained profits. We therefore conclude that the NSE has failed in its primary objective of helping investors to raise capital. Furthermore there is little evidence to suggest that the NSE has contributed to the economic development of Kenya. These findings confirm earlier finding by Kimura and Amoro (1999), who concluded that there was no significant correlation between economic growth and the growth of the NSE during the period 1985-1996. Future research may be directed towards the examination of why the NSE has failure to promote capital mobilization in Kenya. We suggest the use case study approach.

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APPENDIX 1

Agricultural Sector (Kshs.'000')					
	Equity Type	Company Name	1998	2004	Change
1	Total share capital	Unilever Tea Kenya Limited	488750	488750	0%
	Reserves	Unilever Tea Kenya Limited	4794064	2630036	-45%
	Total debt	Unilever Tea Kenya Limited	784794	2043129	160%
2	Total share capital	Kakuzi Limited	98000	98000	0%
	Reserves	Kakuzi Limited	1993174	992350	-50%
	Total debt	Kakuzi Limited	848079	1055029	24%
3	Total share capital	Rea Vipingo Plantations Ltd	300000	300000	0%
	Reserves	Rea Vipingo Plantations Ltd	208824	275807	32%
	Total debt	Rea Vipingo Plantations Ltd	334518	452854	35%
4	Total share capital	Sasini Tea and Coffee, Ltd	190046	190046	0%
	Reserves	Sasini Tea and Coffee, Ltd	1940015	2948031	52%
	Total debt	Sasini Tea and Coffee Ltd	341656	812259	138%
Services and Commercial Sector (Kshs.'000')					
	Equity Type	Company	1998	2004	Change
5	Total share capital	African Tours & Hotels Ltd	43400	58702	35%
	Reserves	African Tours & Hotels Ltd	-8607	-11331	32%
	Total debt	African Tours & Hotels Ltd	8928	19423	118%
6	Total share capital	Car & General (Kenya) Ltd	111398	111398	0%
	Reserves	Car & General (Kenya) Ltd	171050	272044	59%
	Total debt	Car & General (Kenya) Ltd	363665	343837	-5%
7	Total share capital	CMC Holdings Limited	121398	242796	100%
	Reserves	CMC Holdings Limited	1248526	2492605	100%
	Total debt	CMC Holdings Limited	2746844	3568440	30%
8	Total share capital	Hutchings Biemer Limited	3000	3000	0%
	Reserves	Hutchings Biemer Limited	16895	2 40,282	1322%
	Total debt	Hutchings Biemer Limited	167677	163959	-2%
9	Total share capital	Kenya Airways Limited	2308000	2308000	0%
	Reserves	Kenya Airways Limited	4199000	6112000	46%
	Total debt	Kenya Airways Limited	6885000	20970000	205%
10	Total share capital	Marshalls (East Africa) Ltd	72466	71966	-1%
	Reserves	Marshalls (East Africa), Ltd	1135566	152669	-87%
	Total debt	Marshalls (East Africa), Ltd	1208431	733483	-39%
11	Total share capital	Nation Media Group, Ltd	178300	267500	50%
	Reserves	Nation Media Group, Ltd	13585000	2632700	94%
	Total debt	Nation Media Group, Ltd	662600	1192500	80%

Agricultural Sector (Kshs.'000')					
	Equity Type	Company Name	1998	2004	Change
12	Total share capital	Tourism Promotion Services Limited (Serena Hotels)	193395	193395	0%
	Reserves	Tourism Promotion Services Limited (Serena Hotels)	319187	898244	181%
	Total debt	Tourism Promotion Services Limited (Serena Hotels)	443518	962880	117%
13	Total share capital	Uchumi Supermarkets Limited	300000	300000	0%
	Reserves	Uchumi Supermarkets Limited	437886	-190035	-143%
	Total debt	Uchumi Supermarkets Limited	1121826	3155132	181%
Banking Sector (Kshs.'000')					
	Equity Type	Company Name	1998	2004	Change
14	Total share capital	Barclays Bank of Kenya Ltd	1543000	2037000	32%
	Reserves	Barclays Bank of Kenya Ltd	6626000	10438000	58%
	Total debt	Barclays Bank of Kenya Ltd	62193000	93720000	51%
15	Total share capital	CFC Bank	500000	720000	44%
	Reserves	CFC Bank	1102316	1802611	64%
	Total debt	CFC Bank	5114242	26791536	424%
16	Total share capital	Diamond Trust Bank (Kenya) Limited	318000	397500	25%
	Reserves	Diamond Trust Bank (Kenya) Limited	630791	1039572	65%
	Total debt	Diamond Trust Bank (Kenya) Limited	5487464	9730651	77%
17	Total share capital	Housing Finance Company Limited	575000	575000	0%
	Reserves	Housing Finance Company Limited	969199	544926	-44%
	Total debt	Housing Finance Company Limited	11287037	8340706	-26%
18	Total share capital	ICDC Investment Company Limited	141292	274976	95%
	Reserves	ICDC Investment Company Limited	441409	2721562	517%
	Long-term debt	ICDC Investment Company Limited	34334	60496	76%
19	Total share capital	Jubilee Insurance Company Limited	180000	180000	0%
	Reserves	Jubilee Insurance Company Limited	1820263	1913796	5%
	Total debt	Jubilee Insurance Company Limited	2978729	7384270	148%

Agricultural Sector (Kshs.'000')					
	Equity Type	Company Name	1998	2004	Change
20	Total share capital	Kenya Commercial Bank Limited	1122000	1996000	78%
	Reserves	Kenya Commercial Bank Limited	9233900	6584159	-29%
	Total debt	Kenya Commercial Bank Limited	68677335	61020008	-11%
21	Total share capital	National Bank of Kenya Limited.	1000000	6675000	568%
	Reserves	National Bank of Kenya Limited.	-593352	-4050201	583%
	Total debt	National Bank of Kenya Limited.	25355992	27968826	10%
22	Total share capital	NIC Bank Limited.	329658	412073	25%
	Reserves	NIC Bank Limited.	1573444	2231894	42%
	Total debt	NIC Bank Limited.	5439742	13999526	157%
23	Total share capital	Pan Africa Insurance Holdings Limited.	65000	240000	269%
	Reserves	Pan Africa Insurance Holdings Limited.	1622274	559144	-66%
	Total debt	Pan Africa Insurance Holdings Limited.	944792	2554476	170%
24	Total share capital	Standard Chartered Bank Kenya Limited.	824145	1359839	65%
	Reserves	Standard Chartered Bank Kenya Limited.	3169443	4703355	48%
	Total debt	Standard Chartered Bank Kenya Limited.	33938699	61050733	80%
Manufacturing and Allied Sector (Kshs.'000')					
25	Total share capital	Athi-River Mining Limited	375000	465000	24%
	Reserves	Athi-River Mining Limited	224946	521188	132%
	Total debt	Athi-River Mining Limited	578382	986764	71%
26	Total share capital	Bamburi Cement Company Limited.	1815000	1815000	0%
	Reserves	Bamburi Cement Company Limited.	8718000	8048000	-8%
	Total debt	Bamburi Cement Company Limited.	1015000	4326000	326%
27	Total share capital	British American Tobacco Kenya Limited.	750000	1000000	33%
	Reserves	British American Tobacco Kenya Limited.	3635837	2761025	-24%
	Total debt	British American Tobacco	2079887	2360862	14%

Agricultural Sector (Kshs.'000')					
	Equity Type	Company Name	1998	2004	Change
		Kenya Limited.			
28	Total share capital	BOC Kenya Limited.	97627	97627	0%
	Reserves	BOC Kenya Limited.	942874	1055736	12%
	Total debt	BOC Kenya Limited.	242758	312927	29%
29	Total share capital	Carbacid Investments Limited.	47195	56634	20%
	Reserves	Carbacid Investments Limited.	496897	696859	40%
	Total debt	Carbacid Investments Limited.	32491	186756	475%
30	Total share capital	Crown-Berger Kenya Limited.	107850	107850	0%
	Reserves	Crown-Berger Kenya Limited.	452793	485856	7%
	Total debt	Crown-Berger Kenya Limited.	371412	334617	-10%
31	Total share capital	Dunlop Kenya Limited.	50000	50000	0%
	Reserves	Dunlop Kenya Limited.	55804	27473	-51%
	Total debt	Dunlop Kenya Limited.	27451	62758	129%
32	Total share capital	East African Cables Limited.	101250	101250	0%
	Reserves	East African Cables Limited.	248007	215792	-13%
	Total debt	East African Cables Limited.	70431	175174	149%
33	Total share capital	East African Portland Cement Company.	450000	450000	0%
	Reserves	East African Portland Cement Company.	1250206	1352463	8%
	Total debt	East African Portland Cement Company.	4090415	5667834	39%
34	Total share capital	East African Breweries Limited.	936022	1098297	17%
	Reserves	East African Breweries Limited.	8572542	12446213	45%
	Total debt	East African Breweries Limited.	4690044	5511917	18%
35	Total share capital	Sameer Africa Limited	1391712	1391712	0%
	Reserves	Sameer Africa Limited	487999	620578	27%
	Total debt	Sameer Africa Limited	778216	974154	25%
36	Total share capital	Kenya Oil Company Limited	36000	50398	40%
	Reserves	Kenya Oil Company Limited	870763	3,342,537	284%
	Total debt	Kenya Oil Company Limited	531056	2841871	435%
37	Total share capital	Mumias Sugar Company Ltd.	1020000	1020000	0%
	Reserves	Mumias Sugar Company Ltd.	4334095	4382105	1%
	Total debt	Mumias Sugar Company Ltd.	4861041	3745232	-23%
38	Total share capital	Kenya Power and Lighting Company Ltd.	1098040	1582560	44%
	Reserves	Kenya Power and Lighting Company Ltd.	4992485	15908659	219%

Agricultural Sector (Kshs.'000')					
	Equity Type	Company Name	1998	2004	Change
	Total debt	Kenya Power and Lighting Company Ltd.	14893983	14803862	-1%
39	Total share capital	Total Kenya Ltd.	280000	875324	213%
	Reserves	Total Kenya Ltd.	792198	3647427	360%
	Total debt	Total Kenya Ltd.	2970396	6026038	103%
40	Total share capital	Unga Group Ltd.	234294	315454	35%
	Reserves	Unga Group Ltd.	2274500	1017360	-55%
	Total debt	Unga Group Ltd.	2921382	2254953	-23%
41	Total share capital	A.Baumann & Company Ltd.	19200	19200	0%
	Reserves	A.Baumann & Company Ltd.	433003	245723	-43%
	Total debt	A.Baumann & Company Ltd.	119653	121309	1%
42	Total share capital	City Trust Ltd	20830	20830	0%
	Reserves	City Trust Ltd	175214	182757	4%
	Total debt	City Trust Ltd	24644	6488	-74%
43	Total share capital	Eaagards Ltd.	8039	10049	25%
	Reserves	Eaagards Ltd.	176062	143897	-18%
	Total debt	Eaagards Ltd.	48222	34377	-29%
44	Total share capital	Express Kenya Ltd	24000	160925	571%
	Reserves	Express Kenya Ltd	332199	38154	-89%
	Total debt	Express Kenya Ltd	504105	410729	-19%
Alternative Segment (Kshs.'000')					
45	Total share capital	Kapchorua Tea Company Ltd	19560	19560	0%
	Reserves	Kapchorua Tea Company Ltd	370978	653085	76%
	Total debt	Kapchorua Tea Company Ltd	150394	320388	113%
46	Total share capital	Kenya Orchards Ltd	3000	57228746	1907525%
	Reserves	Kenya Orchards Ltd	-2201	-52845974	2400898%
	Total debt	Kenya Orchards Ltd	89881	114535603	127330%
47	Total share capital	Limuru Tea Company Ltd	4000	12000	200%
	Reserves	Limuru Tea Company Ltd	27728	33937	22%
	Total debt	Limuru Tea Company Ltd	19234	22753	18%
48	Total share capital	Standard Newspapers Grp Ltd	64152	325769	408%
	Reserves	Standard Newspapers Grp Ltd	27095	-148378	-648%
	Total debt	Standard Newspapers Grp Ltd	356567	686117	92%
49	Total share capital	Williamson Tea kenya Ltd	43782	43782	0%
	Reserves	Williamson Tea kenya Ltd	1193079	2235870	87%
	Total debt	Williamson Tea kenya Ltd	446068	878680	97%

WHISTLE-BLOWERS AND TECHNOLOGY: A CROSS-CULTURAL FRAMEWORK FOR EFFECTIVE CORPORATE MALFEASANCE REPORTING SYSTEMS

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ABSTRACT

Although the literature has suggested that transnational organizations should consider cross-cultural implications when designing internal control systems, no theoretically-based guidance has been proposed. This paper combines research findings from the areas of sociology and psychology regarding organizational members who report corporate malfeasance (“whistle blowers”), with accounting and information technology research concerning cultural differences in technology acceptance, to provide a suggested framework for matching various cultures with appropriate corporate malfeasance reporting systems. The goal is to provide accountants and information technology professionals in global corporations with a theoretically-based guide for selecting and assisting in the development of corporate malfeasance reporting systems, and to increase management’s awareness of the need to educate organizational members about the importance of using these systems appropriately.

INTRODUCTION

Information technology is never a neutral addition to an organization (Cutcliffe, 2006). The choices top management makes about what, when and how to implement new technologies, whether as extensive as an enterprise system (Pozzebon and Titah, 2006) or as individual as decision support tools (Kersten et al., 2002), will have consequences on how organizational members function, either for better or for worse. The functioning of organizational members, in turn, affects how well the organization succeeds in accomplishing its mission. One type of information technology of concern to all levels of management as well as society in general (Zelby, 1989) is that which provides for employee reporting of corporate malfeasance within transnational corporations.

Highly publicized incidents of corporate wrongdoing have resulted in legislation in several countries and brought the issue of employees reporting internal corporate problems to the forefront of management’s concerns. For example, in the U.S., the Sarbanes-Oxley Act of 2002 (SOX) mandated a focus on the internal controls used in an organization’s financial reporting system,

demanding much of the attention of accountants and information systems (IS) professionals (Holmes, 2007). Much of this attention has been focused on complying with Sections 302, 404, and 409 of SOX (Daigle and Lampe, 2005) which relate specifically to the financial reports of the organization. However, also important but receiving far less attention, are the requirements in Section 301 to provide mechanisms for the anonymous reporting of corporate misconduct. Section 301 requires that publicly-traded corporations in the United States establish procedures for the confidential and anonymous reporting by employees of questionable corporate activities (corporate malfeasance), and Section 1107 provides for criminal penalties in the event of corporate retaliation against said employee. Similarly, the U.K. Combined Code on Corporate Governance of July 2003 requires audit committees to ensure that employees have means by which they can report corporate malfeasance. [See Schmidt (2005) for a complete listing of common law countries that have used legislation to address whistle blowing activities.] Even in the absence of national legislation, organizations that develop and maintain effective internal corporate malfeasance reporting systems (CMRS) have the added benefit of containing or reducing rising insurance premiums (Jernberg, 2003) as well as possibly preventing (Schmidt, 2005), containing and/or correcting potentially damaging situations. Furthermore, unlike other corporate information systems (for which exists extensive research) that primarily support specific organizational levels such as decision support systems and executive information systems, CMRS, in order to be effective, must be acceptable to and utilized by each organizational member regardless of level within the hierarchy. Therefore, international and domestic organizations, public and private, can benefit from the development and implementation of IT-based CMRS that are culturally compatible with its employees.

This conceptual paper seeks to inform both researchers and practitioners regarding the cultural aspects of using information technology to enhance CMRS and to support responsible whistle-blowing activities. It builds upon and adds to the body of research that examines how employees in different cultures accept information technologies and respond to various information sharing tasks (Chow et al., 1999) by providing a theoretically grounded approach to developing effective cross-cultural CMRS.

The paper begins with a review of research findings regarding the role of whistle-blowers in organizations, and then discusses the cultural issues facing transnational organizations. Based on this research, it next provides a suggested framework for matching information technology choices for reporting corporate malfeasance to those cultural dimensions, and concludes with suggestions for future research.

WHISTLE-BLOWERS

Organizations, including governments and professional associations, are concerned with finding ways to encourage and allow employees to report acts, both of omission as well as commission (Near and Miceli, 1995), of corporate malfeasance or wrongdoing. Such reporting is

commonly known as whistle-blowing (Near and Miceli, 1995) although this term has developed a negative connotation associated with reporting such acts to external entities (the media, government, etc.) rather than to management (Wrage, 2004). For the purposes of this paper, the term “whistle-blower” will refer to individuals within an organization who report their knowledge of acts that they deem to be illegal, unethical, or illegitimate to someone with the means to effect change inside the organization. Although outside of the scope of this paper, additional research has explored the reasons *why* an individual chooses to report observed wrongdoings by examining contextual factors (seriousness of the act, group norms, and management’s response) and individual factors (religious values, moral standards, and locus of control) (Chiu and Erdener, 2003), as well as cultural differences in ethical reasoning (Cohen et al., 1996; Tsui, 1996; Swaiden and Hayes, 2005).

Near and Miceli (1996) note that “whistle-blowing is a dynamic process *involving at least three social actors*, each of whom takes actions in response to others” (p. 508). This includes: the “wrongdoer”, the one who observes the wrongdoing, and the one receiving the report of the wrongdoing. While there are different perspectives, based on culture (Sims and Gegez, 2004) as well as profession (Near and Miceli, 1996), of what constitutes wrongdoing, it appears clear that whistle-blowing takes place “when there is some reasonable supposition of success” (Near and Miceli, 1996, p. 510) by the whistle-blower of having the wrongdoing stopped. One concern of whistle-blowers has been the possibility of corporate retaliation (Miceli and Near, 1994), which, under Section 1107 of Sarbanes-Oxley, is punishable by fines or imprisonment. However, research has shown that attempts to increase whistle-blowing through legal mandates that include non-retaliation provisions such as this, have not had the desired result, and suggests that providing organizational mechanisms perceived to provide procedural justice (Near et al., 1993) or improving situational factors (open-door policies, formal procedures) would be more effective (Chiu and Erdener, 2003).

An effective corporate malfeasance reporting system should include the following attributes (Wrage, 2004, pg. 7):

- ◆ It is accessible to all employees in all locations, in various languages, and around the clock
- ◆ It is culturally appropriate so that it works within the constraints of local cultures and practices
- ◆ It is available to relevant 3rd parties, for example, suppliers, consumers, etc.
- ◆ It provides for the option of anonymity where appropriate, and insures the confidentiality of the reports
- ◆ It collects data in a format to support follow-up, data collection and analysis, etc.

Therefore, management's goal is to encourage and support responsible internal whistleblowing through the use of well-designed information systems that will be used by employees. Having the wrongdoing reported through internal channels rather than to external entities provides management the opportunity to correct problems without suffering the losses, both of finances and reputation which would result from public exposure of the problems.

Despite the potential for the creative application of various technologies to support CMRS, the most commonly used technology is a hotline phone number (Mohr and Slovin, 2005; Schneider, 2003). Unfortunately, the use of hotlines often carries specific problems. For example, a study of 30 companies in 10 countries found that hotlines are typically manned during the normal business hours of the call center (Wrage, 2004), which in a transnational organization will be in a time zone than is not feasible for a certain percentage of employees. According to the Wrage (2004) study, employees who report serious wrongdoing are more likely to report them late at night while away from the office. In cases such as these, the hotline is likely to be answered by a voice mail system which, again, has been reported as not being well accepted in all cultures (Buckman, 2005). Other hotline problems include an inability to follow-up on the report, and an inability to create a discoverable record, all of which may expose the organization to extensive liability claims (Jernberg, 2003). Finally, the use of a hotline has simply been found to be unacceptable in certain cultures (Maher, 2004).

In the Wrage (2004) study, "[t]he single greatest obstacle cited by companies to the effective implementation of internal reporting systems world-wide was 'cultural resistance'. In some countries, historical memories associate reporting to the authorities with being a traitor or a snitch. To combat this perception, companies need to be sensitive about both content and delivery" (pg. 10). Practitioners have observed that multi-national organizations with reporting systems that provide for more than one reporting option are more likely to be successful, and that cultural effects should be considered as a key variable in that success (Straub, 1994; Devine et al., 2000; Wrage, 2004). Regardless of the technology used, it should be noted that although SOX requires that companies *provide* for anonymous reporting, employees and companies need to be aware of the risks inherent in *guaranteeing* anonymous reporting. As Jernberg (2003) and Wrage (2004) note, corporate follow-up on a malfeasance report will require interacting with the employee, rendering true anonymity impractical. In fact, an Italian company in the Wrage (2004) report did not offer employees the option of anonymous reporting, saying that it "undermines trust between management and employees", while a Russian company cites the employee's safety as justification for its offering the option of anonymity. Furthermore, if a company offered a hotline system that purported to be anonymous, such anonymity could be eliminated if the call came from or involved a division of only two or three people, leaving the employee vulnerable to a retaliation outside of management's control. In this case, by misleading the employee to believe that the hotline was anonymous, the company may be exposed to "a far broader liability than would flow from the retaliation claim itself"

(Jernberg, 2003, pg. 11). For these reasons, Wrage (2004) notes that corporations must emphasize and develop trust in the confidentiality of the reports rather than guaranteeing anonymity.

One key element of a successful reporting system that goes beyond the technology is that the whistle-blower must trust the organization (Gupta, 2000) as well as the reporting system. Therefore, the cultural dimensions of trust should also be considered when designing transnational systems. Research has shown that trust is higher between those of similar ethnicity, socioculture (Gefen, et al., 2005) and appearance (the in-group), although similar trust can be gained if an outsider is presented through an in-group third party (Corbitt et al., 2003). Therefore those responsible for developing the systems must incorporate culturally sensitive elements that encourage the user to trust the technology, the process and the outcomes. Fortunately, extensive research has been conducted on cultural issues in the application and use of technology. The following section discusses highlights of relevant research available on cross-cultural issues that can inform the design of information systems for reporting corporate malfeasance in global corporations.

CULTURAL ISSUES

Extensive research indicates that culture affects an employee's work behavior (Awasthi et al., 2001; Hunter, 2001), through management, communication and collaboration (Kersten et al., 2002). Internal control systems (Patel, 2003) and information technology systems (Dirksen, 2001) created in one country may not be accepted in another due to differences in cultures and values. It has been shown that problems attributed to cultural differences are likely to result when a multinational organization implements information technology for organizational communications designed to support the host culture (headquarters) without taking into account the culture of the subsidiaries (Deans and Ricks, 1993). However, some have suggested that the headquarters' corporate culture can override local country cultures through socialization (Guo and D'Ambra, 2003). Therefore, it is important to recognize the various levels of culture and relative influence on individual behaviors (Karahanna et al., 2005). These levels include national, organizational, and group cultures. Research indicates that national culture has the strongest effect in matters of moral values and behaviors while task behaviors are more strongly influenced by organizational and professional cultures (Karahanna et al., 2005). Reporting corporate malfeasance involves an individual's moral values and behaviors and therefore would be more closely tied to what has been described as national culture, although some have found that at times corporate culture may have a moderating effect on national cultural norms (Tan et al., 2003)

There are two contrasting hypotheses upon which one might consider cultural factors when examining the introduction of a reporting system into an organizational unit. One is the assumption that with the globalization of organizations and education, cultures will converge and distinctions will become irrelevant in the workplace. This viewpoint is one in which "ethnic or cultural differences were often treated as hierarchically linear disparities, where one ethnicity should follow

the cultures and customs of “others” in order to adopt a modernized lifestyle in order to advance” (Kim et al., 2007, p. 284). A contrasting assumption is that cultures will strive to retain their distinctiveness and resist such dilution (Hunter, 2001; Usoro and Kuofie, 2006). This paper is premised on the assumption that while over time some convergence of cultures will be manifest in transnational organizations, in the interim as current research indicates (Spreitzer et al., 2005; Kim et al., 2007; Phelps, 2007), cultural distinctions will remain. Accordingly, these cultural differences will be a factor in the acceptance and use of information technology in the workplace, and should be acknowledged and accommodated when implementing information systems for reporting corporate malfeasance. As a result, employee empowerment will be facilitated by matching the appropriate technology with the culture with the user (Downing et al., 2003).

In addition, there are several theories of technology design that could lead to different organizational outcomes. These are the instrumental perspective, the substantive perspective, and the critical perspective (Kersten et al., 2002). The instrumental perspective focuses on the technology as being separate from the users and their environments, a perspective that ignores cultural issues by assuming a universal standard of rationality. The substantive perspective sees technology as a control mechanism for improving the users through new values and systems. The critical perspective recognizes that information technology is not neutral but changes the system into which it is introduced; in the case of CMRS the system provides a means by which the whistleblower’s voice, regardless of organizational level, can be heard by management. Thus this paper uses the critical perspective in that it expects the effect of introducing a corporate malfeasance reporting system will not be neutral (Dirksen, 2001) but will be effective only if it is compatible with and supportive of the cultural environment of its users.

There are over 400 ways to define culture (Ferraro, 1994; Merchant, 2002), but it is generally accepted that without losing our individuality, we share with others of our social group a set of common beliefs, symbols, rituals and values. Culture is a collective phenomenon that is a “useful variable in discussing differences in how people behave, and . . . communication is central to culture and the management of organizational behavior” (Merchant, 2002, p.1035). Culture may or may not have national boundaries (Baskerville-Morley, 2003). One of the most cited, albeit not universally embraced (Baskerville-Morley, 2003; Gernon, 1993), works on cross-cultural attributes is Hofstede’s (1980, 1991, 2001) research into how culture affects the workplace and effectiveness of management directives. The significant amount of research in both the accounting (Doupnik and Richter, 2004; Patel, 2003, 2004; Cohen et al., 1996) and information technology (Katz and Townsend, 2000; Leidner and Kayworth, 2006) literature indicates that Hofstede’s well-known cultural dimensions provide a useful lens through which to begin developing a framework for understanding the interactions between cultural differences and the use of information technology to report instances of corporate malfeasance. Hofstede (1993) proposed four major bipolar dimensions along which cultural differences can be organized and can assist in predicting how organizational workers in various countries will respond to management initiatives. These

dimensions are: Power Distance (the amount of inequality people consider normal), Individualism (the degree to which people put self above the group), Masculinity/Femininity (valuing assertiveness and competitiveness versus relationships and solidarity), and Uncertainty Avoidance (preference for structured environments). Although Hofstede's work connected these dimensions to specific countries, such diverse dimensions are not exclusively geographically bound in today's mobile society, and cultural distinctions can be found within single geographic areas (Kim et al., 2007). Thus the paper's suggested framework has wide applicability for organizations.

The following section reviews research on the interaction of these cultural dimensions and the use of information technology as support for the suggested CMRS.

CULTURE AND INFORMATION TECHNOLOGY

As noted earlier, researchers have long acknowledged the influence of cultural dimensions not only on the individual's ethical perceptions (Brody et al., 1998) but also on the acceptance and use of information technology (Leidner and Kayworth, 2006). CMRS are vehicles for communicating and sharing knowledge with management on topics of concern to the employee and of importance to the organization. Therefore studies reviewed below of the interactions of these cultural dimensions with technology can provide guidance in designing CMRS and provide testable hypotheses for future research.

High Power Distance-Low Power Distance

A culture's development of power distance norms begins in the family hierarchy and carries over into the workplace (Hofstede, 2001). Persons in high power distance (HPD) cultures expect unequal power distribution, accept situations in which organizational superiors make the major decisions without input from subordinates, and are unlikely to disagree with these decisions (Ford et al., 2003), with the reverse being characteristic of low power distance (LPD) groups. The power distance dimension can influence individual preferences for and use of communication technologies. For example, Huang et al. (2003) found that technology such as e-mail may not be as acceptable to HPD individuals because of its perceived equalizing effect. Lim (2004) found that HPD individuals were more influenced by software that included an explanatory feature whereas LPD individuals deemed this less important. Therefore it is suggested that HPD cultures would be more likely to use a CMRS such as intranet web pages that provide management's message regarding the importance of reporting observed wrongdoing, and provide formal, structured steps and directives for reporting the information. The web page design formats would reflect cultural nuances identified by Chau et al. (2002). LPD individuals would be more likely to respond to less structured and directive information gathering systems such as corporate blogs which support informal communications and

allow for individual control of the format for inputs. [Hofstede, (1993) observed HPD in Russia and China and LPD in the U.S., Netherlands, and Germany.]

Individualism-Collectivism

Hofstede (2001) observed that the extent to which a given society expects its members to demonstrate individualism versus collectivism in turn affects their relationships with organizations. Individualist cultures value personal time, have loose ties between individuals, and value personal achievements and recognition while collectivist cultures have high social needs, put group concerns over individual desires and value group cohesion (Ford et al., 2003; Triandis, 2004). Research on knowledge sharing found that collectivist cultures were less willing than were individualistic cultures to share knowledge with outgroup members and more likely to view them with hostility and distrust, although both groups were equally willing to share when it did not involve a conflict between self-interest and collective-interests (Chow et al., 2000). This cultural dimension impacts employee choices for empowerment (Downing et al., 2003), with collectivist groups preferring more information rich means of communicating and individualistic more lean and efficient means. In collectivist cultures, the context (how it is conveyed) is more important than the content (what is conveyed). Therefore, it could be expected that individualistic cultures would respond to corporate blogs, possibly with a reward system for successful reporting, and one that provides the option of not being anonymous while retaining the confidentiality of the report. Conversely, individuals in collectivist cultures would be expected to respond more openly to chat rooms in which they could develop trust in the group and find social support for concerns, with the option of anonymous postings. [Hofstede, (1993) found high individualism in the U.S., Netherlands, and Germany and high collectivism in China, West Africa, and Indonesia.]

Masculinity-Femininity

The masculine dimension values assertiveness, performance, success and competition versus relationships, service to others, and solidarity (Hofstede, 1993). In the few research studies on the interaction of this cultural dimension and information technology, the findings indicate that cultures high in masculinity will focus on technology for its own sake (Hasan and Ditas, 1999) and use it to respond to challenges that result in individual rewards and acknowledgement (Downing et al., 2003), while cultures lower in masculinity will be more comfortable with systems that focus on supporting the end user (Hasan and Ditas, 1999). Therefore it is suggested that for cultures high in masculinity, a corporate malfeasance reporting system that uses a corporate blog with a reward system for successful reporting and the option of not being anonymous would be effective, while cultures lower in masculinity may respond better to a chat room system with anonymous reporting that helps develop trust and offer social support for concerns being reported. [Hofstede, (1993) found high

preponderance of the masculinity dimension in Japan, U.S., and Germany in contrast to the Netherlands and Russia which are at the lower end of the scale.]

Uncertainty Avoidance

This dimension reflects the degree to which a culture prefers structured situations with clear rules, both written rules and those imposed by tradition, over unstructured ones, (Hofstede, 1993). Individuals in a high uncertainty avoidance (HUA) culture will be uncomfortable when faced with ambiguities, avoiding such interactions when possible, while individuals in low uncertainty avoidance (LUA) have no such qualms about the same situations, and are more likely to make up their own rules (Kim and Peterson, 2002). Liu et al. (2004) theorized that HUA would be positively correlated to a need for increased privacy assurances, but was not able to support this in a study of online purchasing. HUA cultures would be supported by web pages with structured procedures for reporting inputs, clear and specific information regarding how the information will be used, and the option of either anonymous or identified. On the other hand, LUA has been correlated to increased risk-taking as well as reduced risk perception (Keil et al., 2000), suggesting a preference for corporate blogs that allow for unstructured input formats and ad hoc reporting of incidents, including the option of anonymous or identified postings. [Countries in Hofstede's research found to have HUA include Russia, France, and Japan while LUA was observed in the U.S., Hong Kong, and Indonesia (Hofstede, 1993).]

SUGGESTED FRAMEWORK FOR TECHNOLOGY CHOICES

Table 1 summarizes findings from prior research involving cultural dimensions as a basis for suggesting information systems to support effective CMRS. Although the effects of a country's culture on information sharing and other organizational activities are well documented (Pook and Fustos, 1999), concerns have been raised regarding using country names to denote cultural dimensions (Baskerville-Morley, 2003). In addition, although some research has found that corporate cultures can have moderating effects on national cultures (Guo and D'Ambra, 2003; Tan et al., 2003), other studies show cultural distinctions remain even as individuals live and work far from their cultural roots (Kim et al., 2007). Therefore the research findings and suggested technologies in Table 1 have been grouped by cultural dimension, rather than by country names, allowing the framework to be applied by the organizational unit under consideration, whether at the country level, subsidiary level, or functional group level. Using Hofstede's research on cultural perspectives, this framework guides the development of CMRS that are not tied to a specific geographic location and highlights the need to support highly mobile and diverse employees with multiple, theoretically grounded avenues of reporting their concerns.

Table 1		
Dimension	HIGH	LOW
Power Distance	Tend to accept the decisions and demands made by superiors (Awasthi et al., 2001)	Are less satisfied when rewards are imposed rather than self-selected (Awasthi et al., 2001)
	Subordinates subjugate their opinions to that of superiors and are less likely to confront, but are likely to feel that “solving the problem is everyone’s responsibility” (Chow et al, 1999, p. 576)	Will challenge other opinions including superiors (Chow et al, 1999)
	Will respond to and have more trust in systems that incorporate explanation facility because they see the system as the authority (Lim, 2004)	Does not respond to systems that incorporate explanation facility (Lim, 2004)
	Recommended Technology:	Recommended Technology
	<i>Intranet web pages that provide management’s message regarding the importance of reporting, and provides structured steps for reporting the information</i>	<i>Corporate blogs for unstructured and ad hoc postings that allow individual control of input format and provide recognition for contributions</i>
Individualism	Can state opinion without worrying about loss of relationship, but prefer not to face superior directly. Have a high concern for not losing face for self. (Chow et al., 1999).	Hesitant to express a challenge or criticism directly to superior due to fear of damaging the relationship but will share uncomfortable information if doing so for the good of the company, even at a cost to self (Chow, et al 1999).
	Corporate culture of retribution will override willingness to report bad news while promises of rewards encourages reports (Tan et al., 2003)	Will follow social norms of top management to accept technology (Loch et al., 2003)
	Will use technology to seek own self-interest and does not see need for information-rich technologies (Downing et al., 2003)	Will report bad news in situations where the news is expected to come out anyway in order to save face for the group (Tan et al., 2003)
		Will rely on group motivation and share information through social networks (Downing et al., 2003)
	Recommended Technology:	Recommended Technology
	<i>Corporate blogs with reward system for successful reporting. Provide option for not being anonymous but retain confidentiality of reports.</i>	<i>Chat rooms for anonymous postings to develop trust and find social support for concerns.</i>

Table 1		
Dimension	HIGH	LOW
Masculinity	Will focus on technology for its own sake (Hasan and Ditsa, 1999)	Will be more comfortable with user friendly systems that focus on the end user and stresses cooperation (Hasan and Ditsa, 1999)
	Individuals respond to challenges that result in individual rewards and acknowledgements (Downing et al., 2003)	
	Recommended Technology:	Recommended Technology:
	<i>Corporate blogs with reward system for successful reporting. Provide option for not being anonymous but retain confidentiality of reports.</i>	<i>Chat rooms for anonymous postings to develop trust and find social support for concerns.</i>
Uncertainty Avoidance	Prefer to communicate via media high in social presence and information richness, including fax (Straub, 1994)	Are less concerned with media richness (Straub, 1994)
	Will need formalized procedures to avoid uncertainty (Downing et al., 2003; Kim and Peterson, 2002) and provide assurance of not being misunderstood.	Uniformity of processes is less important (Garfield and Watson, 1998).
	Will be uncomfortable with collaborative technologies (Downing et al., 2003) that may lead to ambiguities in outcomes	More likely to be risk-seeking with reduced risk perceptions (Keil et al., 2000)
		Are more willing to experiment with (Thatcher et al., 2003) and accept (Shore et al., 1996) new technology.
	Recommended Technology:	Recommended Technology:
	<i>Web pages with structured procedures for reporting inputs, clear and specific information regarding how the information will be used</i>	<i>Corporate blogs that allow for unstructured input formats and ad hoc reporting of incidents, providing for anonymous or identified postings, as specified by individual</i>

CONCLUSION

Given the global nature of organizations today, with employees in multiple countries of diverse cultures, it is known that one size will not fit all when it comes to CMRS (Wrage, 2004). Some have noted that information technology is primarily the product of a Western culture and therefore often not appropriate in other cultures unless carefully chosen to match those respective cultures (Hasan and Ditsa, 1999). Thus, managers of global organizations, as well as organizations

that provide products and services to a culturally diverse customer base, require guidance in matching the appropriate CMRS with the intended cultural population. Although the literature has recognized that transnational organizations should consider the cross-cultural implications when designing internal control systems (Brody et al., 1998), and reporting systems (Schultz et al., 1993; Patel, 2003), no specific guidance has yet been proposed for the design of CMRS which will continue to grow in importance to organizations and society. Using Hofstede's (1993) cultural dimensions as a starting point, this paper combines research findings from the areas of sociology and psychology regarding organizational members who report corporate malfeasance ("whistle blowers"), with accounting and information technology research concerning cultural differences in technology acceptance, to provide a suggested framework for matching national cultures with creative and appropriate corporate malfeasance reporting technologies. As such, it complements earlier works that examined the culture-based ethical issues faced by organizations (Cohen et al., 1996). The goal is to provide international managers with a theoretically-based guide for designing CMRS, and to increase awareness of the need to educate organizational members about the importance of using these systems appropriately. It is provided as a starting place for further research to test the applicability of each, and as guidance for information technology professional recommending and assisting in the development of corporate malfeasance reporting technologies, whether in-house or outsourced to a third-party (Schneider, 2003).

Additional research would further enhance these findings. For example, given the importance of the communication aspect reporting corporate malfeasance, another lens through which to examine the selection of technology (Zakaria et al., 2003) might include Hall's (1976) and Trompenaars (1994) concepts of the contextual attributes of communication. In addition, Loch, et al (2003) found that despite cultural beliefs that might keep one from embracing a technology, technological cultivation through formal and informal exposure can provide new social norms to make the technology acceptable. Therefore, it is important to consider the role of corporate training so that employees recognize management's commitment to the processes and outcomes. Finally, regardless of how sophisticated, creative, or well-planned the information technology, it is still critical that management engender employee trust in the system and its processes.

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MANAGING MEXICAN WORKERS: IMPLICATIONS OF HOFSTEDE'S CULTURAL DIMENSIONS

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ABSTRACT

In Mexico, manufacturing plants (i.e. maquiladoras) employ assembly-line workers whose functional needs must be known by management in order to motivate and retain workers in an industry known for its high turnover. Mexican workers carry a set of common values that constitutes their particular culture which in turn dictates their attitude and behavior. Hofstede's dimensions are widely used in cross-cultural management research to explain and understand different cultures. In this study, Hofstede's cultural dimensions are applied to interpret the responses given by maquiladora workers based on personal interviews. To gain more detailed knowledge on their responses, a series of one-way ANOVA's are performed on the workers' demographic variables. Observations and management implications are given.

INTRODUCTION

The way an employee chooses to think, feel, and act on the job can be a function of the culture from which he or she comes. Thus, applying a single management approach in all work settings around the world may be ineffective in motivating and leading workers to be more productive and successful in their job. Cultural research indicates that Western-based theories of management may fail in some countries and in some societies because countries have unique views of job satisfaction and motivation. Management literature has revealed that an individual's job interests and the importance with which these interests are viewed vary from country to country; and the significance of an individual's needs is influenced by his/her values and beliefs within a given culture (Ronen, 2001).

For a company to achieve maximum success when entering a new country in the international arena, management should evaluate and understand the country's culture prior to establishing a toehold there. For this reason, multinational corporations cannot simply transfer U.S. management practices (i.e. reward systems, incentives, benefits) to subsidiaries without taking into account the local setting and culture. In this research, we specifically attempt to uncover what is on the minds of Mexican maquiladora workers and what matters to them as they work in the manufacturing plants of Mexico. The main purpose of this study is to determine what maquiladora workers are talking about in relation to their job and then to break the results down by such

demographic categories as sex, education, marital status, number of dependents, tenure, and age to determine if these variables matter in the dialogue. Hofstede and Hofstede (2005), based on their research, have established a framework in relating the Mexican culture to work factors. The results of this study are presented in light of Hofstede and Hofstede's (2005) work in an effort to determine how the outcomes of the study match their framework.

HOFSTEDE'S DIMENSIONS

Cultural dimensions by Hofstede and Hofstede (2005) as well as socio-economic status are used as the framework in explaining the Mexican culture and the key factors that may explain why some work factors are more important than others. Culture may be the underlying factor in the discovery of their positive statements. Cultural factors that will be discussed are collectivism, socio-economic status, masculinity/femininity, socio-economic status, and uncertainty avoidance.

Collectivism and Mexican Culture

According to Hofstede (1983), Mexico is shown as being a collectivist country where the "group" (family) is preferred over individualistic roles. Mexican tradition greatly displays "familistic" values: Mexican cultural principles of male dominance (machismo) and age-based authority in decision making are considered the core of Mexican families. The Mexican household is rooted in an intricate extended system of families and friends, based entirely on their collectivist beliefs. Mexican families are also said to be familistic in that solidarity arrangements are not focused on the nuclear family. Instead, the family of origin and the "*compadre*" ties are supposed to be more important to Mexicans (Teagarden, Butler, & Von Glinow, 1992). Extended families have been the prevailing form of family arrangement in Mexico. It is common for grandparents and other relatives to live with an extended Mexican family. Relatives may also include immediate family members, distant relatives, close family friends (compadres), long-standing neighbors, in-laws, and god-parents (padrinos). In addition, nuclear households, even though they are physically distanced and not part of the household production, remain part of the extended web of family. Mexican families assist extended family members with monetary assistance like lodging, work, money; as well as, non-monetary, like emotional support, advice, or reassurance. As a result, financial responsibilities are shared among family members, thus individual concerns are overlooked for the sake of the family.

Masculinity/femininity and Mexican Culture

In the Mexican family, "familismo" describes family pride, loyalty, and sense of belonging. The need for survival strengthens the familial bond, because the problem of one becomes a problem

for the entire family. Despite the collectivist view of “all for one, and one for all,” a distinct definition of roles is in existence within the family, with an authoritative husband-father who ideally is the breadwinner and a submissive wife-mother who cares for the home and rears the children (Kras, 1995). This statement describes the Mexican culture’s belief in Mexican male superiority (machismo). Hofstede (1983) labeled this dimension: “masculinity versus femininity” and found Mexico to be “masculine” with male and female roles clearly delineated in society. In Mexico, machismo does not refer only to ideas, but also to morals and values bestowed on a male (Mirande, 1997). Macho men believe that nature has given authority to them and they act accordingly. This authority makes it “customary” for men and women to believe that “a woman should not work,” “that she should obey,” among other machismo attitudes (Mirande, 1997). The economic and intellectual dependence to the male, assigns a woman a particular role that places her in an inferior position in Mexico’s society. In primary research with 105 Latino men, Mirande (1997) found that Latino men “stressed the importance of being responsible and providing for the needs of the family” (Falicov, 2001, p. 323).

In Mexico, the machismo culture represents not only a view, but a way of life. In masculine dominant societies, males are expected to be more aggressive and controlling than women. This includes the total control of financial matters. As stated earlier, Mexican women are the keepers of the home, but they may make only small daily decisions, depending entirely on the husband for money. Even when Mexican women are employed outside the home, the man is in charge of all major financial decisions, and the woman is left to fulfill her full-time responsibilities at home as well as at work. With the established roles clearly defined in the Mexican family, there appears to be no conflict concerning the issue of money and power (Falicov, 2001). But conflicts may originate when a Mexican male cannot provide for the family, thus losing his position of respect and authority in the family. In the meantime, the woman out of necessity may seek work outside the household making the adjustment for both partners difficult (Falicov, 1998). The male may exhibit more machismo, or aggressive dominant behavior, and upon finding suitable work may force the woman to quit her job (Guendelman, Samuels, & Ramirez, 1998).

Power Distance and Mexican Culture

Hofstede (1983) described the concept of “power distance” as the index that indicates that people in a society are unequal. In the workplace, Mexican workers clearly see that inequality between them and their manager. Even though they know that their boss has power, they want to be treated with respect by employers and coworkers. There have been cases where Mexican employees leave their positions due to employers’ failure of respect or verbal abuse towards the worker (Falicov, 1998). Once respected, Mexicans create a strong emotional relationship with their supervisor. Mexican workers respect their managers and see them as “paternal” often seeking their advice on personal issues and dealing with other institutions (Kras, 1995; Falicov, 1998; deForest,

1981, Schuler, Jackson, Jackofsky, & Slocum, 1996). Mexican workers see their boss as the individual that respects them, looks for their best interest, as well as the source that provides for the family's well-being (Kras, 1995). The Mexican worker worries about how work is going to impact family time in pursuit of higher productivity. Thus, the Mexican worker may frown upon the idea of working longer hours or working during undeclared religious holidays. Managers have often instilled changes to the workplace environment with the purpose of increasing motivation and productivity; however, they do so with no inference about the goals and outcomes valued by the workers. Mexican workers perceive outcomes differently. Some workers may work simply for the money involved. Others work for the status and respect given to them by reason of their employment. Still others may work just to bring meaning to their lives.

Uncertainty Avoidance and Mexican Culture

Defined as "uncertainty avoidance" by Hofstede (1983), the manner that Mexico deals with the concept of uncertainty and risk avoidance, characterizes them fairly high in this dimension. In Mexican culture, familiarity and security become apparent when emphasis is placed on upholding traditions and preserving family values as well as the attitude of living for today. Mexicans seek present satisfaction and prefer "known" results to "unknown" future outcomes.

Socio-economic Levels and Mexican Culture

In recent statistics, Mexico's population is 97,483,412 where 33,730,210 are employed. In addition, of the employed population 17,201,178 (51%) earn less to 2 times the minimum wage (Estadísticas Economicas, 2007). As far as education level, the percentage of population (15 years and over), without instruction and who have not completed elementary school is approximately 30% and the average schooling of the population aged 15 years and over is 7.6 wage (Estadísticas Economicas, 2007). Considering these facts, many Mexican assembly workers belong to the lowest socio-economic level.

As stated by Falicov (1998), poverty often strengthens the Mexican family. The exchanging of money serves also as a way of enhancing the interaction with family or friends. Money earned among family members is often combined to be used in various ways. As stated earlier, when the extended family lives in close physical distance, there lies the opportunity to share resources daily. However, this idea is also apparent when family members are not in close proximity. Even though monies may be low, the Mexican family members send financial support for elderly parents left behind in other parts of the country. During initial stages of migration, children are sometimes left with their grandparents. This action increases the already present burden in providing financial assistance for relatives physically not in the immediate household.

Mexicans value time and leisure with family, thus money is seen as contributing to the enhancement of family-shared concepts like picnics or watching television together (Falicov, 2001). Based on these issues, the Mexican's socio-economic status coupled with collectivistic views brings different beliefs and attitudes in the workplace.

In summary, the purpose of addressing foundations of culture is to be knowledgeable and equipped to diagnose a culture. Upon understanding a specific culture can we attempt to understand the impact of culture on a particular management practice in this case, motivating and leading maquiladora workers. Societies differ not only in their motivational patterns, but also in values and norms. Thus, the particular need of members to belong, to work, and to advance in the organization may be different in different places, and the problem of motivating members will differ from one society to another. For the Mexican culture, work is considered a "necessary evil" (Kras, 1995, p. 43). While the US culture view work as a reward based on their work production, the Mexican culture see work as necessary to live in order to enjoy worldly pleasures with family and friends (Kras, 1995). Thus, work is seen entirely different from the view of the Mexican worker and as a result may cause difficulties in the organizational setting (Hulin & Triandis, 1981).

Like Hulin and Triandis (1980, p. 338) stated, "...it is misleading to assume that all workers want "X" out of their jobs-whatever "X" is". This statement cannot be emphasized enough when dealing with workers from Mexico. This observation supports the following investigation of what exactly Mexican workers feel is important. As a result, an organization may then implement the right motivational and leadership practices for this particular group of workers.

METHODOLOGY OF THE STUDY

Sample

The participants in this study were a sample of 75 lower-level production workers randomly obtained from five maquiladora plants in Mexico using a systematic sampling methodology. The five maquiladoras selected were assembly plants whose parent company was in the United States. According to Estadísticas Económicas (2007) the female to male ratio in maquiladora employment is 3 to 2. Thus, to attain a comparable ratio in sample, purposive sampling was used. Working with the plant managers from each plant, a total of 46 women and 29 men were randomly selected as study participants. A total of 75 employees were selected. The mean age of the sample was 24.7 years and the mean number of years with the company was 2.4 years. Forty-one percent of the workers were married and forty-four percent had at least one dependent. The bulk of the sample participants (59%) had a junior high level of education.

Interview Procedure

In an effort to probe deeper into issues that are important to maquiladora workers, in-depth personal interviews were conducted with each study participant. Open-ended interview questions were asked. As recommended by Patton (2002, p. 343), these questions only served as an “interview guide,” in which the participants’ responses determine the course of the interview. The goal was to uncover manager and work-related issues deemed important to the workers. While the interviews were conducted in Spanish an English version is in Appendix A. Interviews for each plant took an average of two to three weeks each. The researcher/interviewer assured each of the workers full confidentiality and anonymity. The researcher/interviewer indicated to the worker that no affiliation existed between the plant and the researcher/interviewer. Prior to each interview, employees were asked if tape-recording was permissible. All 75 workers allowed for tape-recording of interviews. All observational notes and pertinent information was gathered after interview was over. Each interview conducted took between 40 and 55 minutes.

DATA ANALYSIS

Upon completion of all interviews, a content analysis of the raw statements directly received from the respondents was performed; and from this, topical categories such as bonuses, job availability, or networking that were on the minds of the workers were identified. Shown below in Table 1 is a complete listing of the twenty-four resulting categories derived from the analysis. Appendix B contains the definitions of each of these categories.

Sample participants statements relating to the twenty-four categories were then labeled as positive and negative (i.e. appreciation-positive, appreciation-negative; bonuses-positive, bonuses-negative) by the researcher who read all 3,644 statements and labeled them as either “positive” or “negative. In this study, we focus on the positive statements in an attempt to determine what motivates and drives such workers.

RESULTS AND ANALYSIS FOR SAMPLE

Which Categories Were More Prevalent?

Frequencies of positive responses were recorded and tallied on the twenty-four categories. The results of this analysis are displayed in Table 2 which contains a listing of the twenty-four categories, the frequency of positive statements made about, and the ranking of that category according to the number of positive statements.

Table 1: Listing of Categories (in alphabetical order)

Appreciation	Medical
Benefits	Networking
Bonuses	Overtime
Cafeteria	Pay
Co-workers	Plant Conditions
Education	Plant Policies
Family	Promotion
Flexibility	Security
Health	Shifts
Job	Social Events
Job Availability	Supervisor
Learn	Transportation

DISCUSSION OF FREQUENCIES

The table of frequencies illustrates the categories of factors most positively mentioned. As noted by Weber (1990), higher category counts reflects a higher concern with the topic. A review of the three highest concerns will be discussed.

Based on the frequencies, the category with the highest number of positive statements is that of “Supervisor”. The quantity of 200 positive statements given by the maquiladora workers had to do with their supervisor. The large quantity of “supervisor” statements given by the workers is not surprising. A number of maquiladora researchers have concluded that the supervisor is an important part of the worker’s life. Based on their research, Teagarden, Butler, and Von Glinow (1992) state that the worker expects the supervisor to “care” for them. In addition, the “workers become a manager’s extended family” (p. 42). Thus, it is a reciprocal situation for both the supervisor and the worker. That being the case, it is not uncommon for workers to be upset when their supervisor is less than “caring” or shows no interest in them. Teagarden et al., (1992), Stephens and Greer (1995), and de Forest (1994) also mention not only the significance in the workers showing respect towards the supervisor but the supervisor also returning the respect to the worker. In return for their dedication to their supervisors, the workers expect a certain level of emotional support and trust. This type of patronage relationship goes back to traditional agrarian communities common throughout Central and Latin America. Like Lindsley (1999, p. 8) writes, “Workers’ dedication to their patrons resulted not only in workers’ sustenance needs, like housing and food being met, but their emotional and familial support needs being fulfilled as well.” This type of relationship between the supervisor and the worker has deep ingrained roots in the Mexican work culture.

The second highest category with 146 positive statements is “Appreciation.” The act of recognizing and appreciating of employees is a must. Workers claimed that they only heard from the supervisors when they were performing at a substandard performance level. They never heard from the supervisors when they were doing a good job. This sentiment was heard throughout the maquiladoras that a gesture of appreciation was necessary. Celebrations on holidays, for instance, costume contest on Halloween, Mother’s day celebration, and a “Posada” on Christmas were mentioned throughout the interviews. The workers mentioned the formation of soccer and volleyball leagues within plants. Unfortunately, for many maquiladoras, the economy really affected their ability to show their appreciation to their workers. Where there used to be monthly and annual celebrations, there were none due to monetary constraints. For the workers, they look forward for these gatherings and feel unappreciated when other plants who are also in an economic crisis still manages to have at least cake and soda for its employees in celebrating the plant’s anniversary. As small as it could be, the act of appreciation must continue.

Category	Frequency	Ranking
Supervisor	200	1
Appreciation	146	2
Co-workers	129	3
Bonuses	111	4
Job	103	5
Flexibility	96	6
Social Events	94	7
Promotion	85	8
Job Availability	81	9
Benefits	75	10
Education	66	11
Plant Policies	61	12
Learn	54	13
Cafeteria	41	14
Pay	38	15
Networking	34	16
Transportation	33	17
Family	30	18

Category	Frequency	Ranking
Overtime	22	19
Health	21	20
Plant Conditions	19	21
Shifts	15	22.5
Security	15	22.5
Medical	14	24

The third highest category with 129 positive statements is “Co-workers.” The need for relationships and friendship among workers was evident based on the high number of statements regarding coworkers and social events. For many of the maquiladora workers, relationships and camaraderie amongst each other is of major importance. For especially the female workers, the friendships gained with their co-workers are most essential to their job satisfaction. A female worker states her motivation to come to work, “I’m already getting used to the job and especially my friends. That’s what makes me get up early and come to work.” Coworkers have influence in making the workplace a good or bad place to work in. A female worker echoes this sentiment, “I look forward to coming to work because of my friends.” Another worker states, “I like to work and also my coworkers. I look forward to talking to them.” Another worker mentions the following regarding social events, “Any type of activity that involves the workers outside of work is fun and needed for the worker to feel excited about working here.” Thus, in this respect, a good relationship with co-workers is indeed high and definitely important to this particular sample of lower-level workers.

RESULTS AND ANALYSIS BY DEMOGRAPHICS

In this study, information was gathered about workers on six demographic variables: Gender, Education, Marital Status, Number of Dependents, Tenure, and Age. The research question is: Is there a significant difference in the number of positive statements given by workers on various categories by demographics? In an effort to study this question, a series of one-way ANOVA’s were run on each of the twenty-four categories with the dependent variable being the number of positive responses given by the worker on a category and the independent variable being the demographic variable. Where significant overall differences were obtained, Tukey’s HSD multiple comparison tests were run to determine which, if any, pairs of classifications were significantly different. In cases where a demographic variable had only two classifications, the analysis was conducted using a *t* test for independent samples assuming unequal variance. The results of these analyses follow and are presented by demographic variables.

Gender

There were 29 males in this study and 46 females. A *t* test was conducted comparing the mean number of positive statements by males to the mean number of positive statements by females on each of the twenty-four categories. The significant results are displayed in Table 3.

Category	<i>t</i>	p-value	significance
Family	2.63	.010	***
Health	1.85	.069	*
Plant Policy	2.93	.005	***
*denotes significant at $\alpha = .10$ **denotes significant at $\alpha = .05$ ***denotes significant at $\alpha = .01$			

As shown in Table 3, out of the twenty-four categories, there were significant differences between males and females on only three categories: Family, Health, and Plant Policy. The *t* values were significantly different at the .01 level for both Family and Plant policy but only for an alpha of .10 for Health. Further examination of sample means indicates that in all three cases, females yielded a significantly higher mean number of positive statements on these categories.

As stated by Hofstede's Masculinity/Femininity dimension, the Mexican culture maintains strict role behavior in relation to men and women. It is of no surprise to see differences in family, health, and plant policies between the two groups. Cultural expectations for Mexican women include being responsible for the family and health concerns when a child or family member gets ill. The plant policies as described indicate more a concern to women due to importance of providing and caring for their families as well as the concept of equality in the workplace. In this research, plant policies included regulations and rules concerning tolerance time, breaks, wage deductions, hiring policies, and anything else where a rule or policy was initiated. While de Forest (1994, p. 38) made the implication that the Mexican way of life is "less disciplined" with "loosely applied set of guidelines" in the workplace; this ideal is what made this topic surface continuously during the interviews. As mentioned in Stephens and Greer (1995), the workers interviewed seemed to be eager for policies to be better explained and adhered to. For instance in the "tolerance" time, one particular maquiladora had no tolerance for late workers; however, some workers were not penalized while others were. Due to responsibility of their children, the women workers were the more likely to be late. They demanded to know the policies regarding the excused and unexcused but were either afraid to confront either their supervisor or human resources or if they did ask, they were not given adequate explanation. The workers felt that the "said" rules should apply to everyone equally.

Education

Study participants possessed a variety of education levels. Twelve of the workers had only an elementary school education, forty-four had an intermediate school education, and eighteen had some high school education. One-way ANOVA's were conducted comparing the mean number of positive statements by each of these three groups on each of the twenty-four categories. In each of these ANOVA's, the independent variable was education with three levels of classification: elementary, intermediate, and high school. The significant results are displayed in Table 4.

Category	F	p-value	significance
Appreciation	5.27	.007	***
Cafeteria	3.00	.056	*
Family	4.43	.015	**

*denotes significant at a = .10
 **denotes significant at a = .05
 ***denotes significant at a = .01

As shown in Table 4, out of the twenty-four categories, there were significant differences by education on only three categories: Appreciation, Cafeteria, and Family. The *F* values were significantly different at the .01 level for Appreciation, at the .05 level for Family, and at the .10 level for Cafeteria. For each of these three categories Tukey's HSD tests were run to determine which pairs, if any, of the three levels of education were significantly different. The results of this analysis showed that workers with an elementary level of education yielded significantly higher mean numbers of positive statements about appreciation than did workers with either an intermediate level of education or workers with a high school level. Both workers with an elementary level of education and workers with an intermediate level of education yielded significant higher mean numbers of positive statements about family than did workers with high school levels of education. For Cafeteria, there were no significant multiple comparisons.

In Mexican culture, there is a fairly large power distance where superiors and subordinates consider each other as existentially unequal, thus relationships are consistently filled with emotions. In Hofstede and Hofstede (2005), they indicate that in large power distance countries as Mexico is, the need for dependence decreases as more education is attained. As mentioned earlier, workers see their supervisors as the "father-figure," and thus not surprising to see that workers with the lowest level of education placed more importance on "Appreciation" which comes from supervisors than the other groups. For instance, this worker stated the following, "I like that I can talk to my friends and even the supervisors. My supervisor talks good to me, he is not yelling like others. I can also

talk to him about anything. He tells us when we are doing wrong but also when we are doing right. That makes us feel good. He treats us all the same. And I like to work for him. That's why I sometimes don't want to move to other lines.” In explaining the importance of family with the workers possessing the two lower levels of education, it is also a fact that workers that possess the highest form of education (i.e. some high school) are single and thus not very particular when it comes to “Family” issues.

Marital Status

There were 37 single workers in this study and 31 married workers. A *t* test was conducted comparing the mean number of positive statements by single workers to the mean number of positive statements by married workers on each of the twenty-four categories. The significant results are displayed in Table 5.

Category	t	p-value	significance
Bonuses	2.22	.032	**
Co-Workers	1.97	.054	*
Medical	2.26	.030	**
Overtime	1.87	.068	*

*denotes significant at $\alpha = .10$
 **denotes significant at $\alpha = .05$
 ***denotes significant at $\alpha = .01$

As shown in Table 5, out of the twenty-four categories, there were significant differences between single and married workers on four categories: Bonuses, Co-Workers, Medical, and Overtime. The *t* values were significantly different at the .05 level for both Bonuses and Medical but only for an alpha of .10 for Co-Workers and for Overtime. Further examination of sample means indicates that in all four cases, married workers yielded a significantly higher mean number of positive statements on these categories than did single workers.

In the Mexican culture, being married involves a greater responsibility in regards to providing for oneself and a family. Hofstede's dimension of collectivism clearly portrays the Mexican culture and its focus on the family. Categories like bonuses, medical, and overtime indicate more resources that can assist in providing necessities for the family. When an organization is providing these opportunities, the workers will be more than appreciative and indicated that in their responses. Married workers have additional responsibilities and do not have the option of quitting if unhappy. For instance, this married worker states the following, “It's not that if we like

it, but it is a necessity. The necessities that each one of us has. As for me, I have kids in school and family in other states. (when asked if he likes the job).” This worker cannot just leave a job, while single workers will be more willing to take the chance for another opportunity if he/she is unhappy. The “Co-worker” variable also indicated differences between the two groups. Married women, in particular, look forward to their time at work, mostly to maintain relations with other women. A married woman when asked what she liked about her job stated the following, “I get along with my coworkers and my supervisor. I look forward to coming to work because of my friends.” Married women, in particular are appreciative of good co-worker relationships and will happily convey that.

Number of Dependents

The independent variable, Number of Dependents, contained four classifications: workers with 0 dependents, workers with 1 dependent, workers with 2 dependents, and workers with 3 or more dependents. Forty-three of the workers had 0 dependents, thirteen had 1 dependent, ten had 2 dependents, and nine had 3 or more dependents. One-way ANOVA’s were conducted comparing the mean number of positive statements by each of these four groups on each of the twenty-four categories. In each of the ANOVA’s, the independent variable was Number of Dependents with four levels of classification: 0, 1, 2, and 3 or more. The significant results are displayed in Table 6.

Category	F	p-value	significance
Family	2.40	.075	*
Medical	3.65	.016	**
Overtime	4.13	.009	***

*denotes significant at $\alpha = .10$
 **denotes significant at $\alpha = .05$
 ***denotes significant at $\alpha = .01$

As shown in Table 6, out of the twenty-four categories, there were significant differences by Number of Dependents on only three categories: Family, Medical, and Overtime. The *F* values were significantly different at the .01 level for Overtime, at the .05 level for Medical, and at the .10 level for Family. For each of these three categories Tukey’s HSD tests were run to determine which pairs, if any, of the four levels of number of dependents were significantly different. The results of this analysis showed that workers 3 or more dependents yielded significantly higher mean numbers of positive statements about Overtime than did workers with either no dependents or workers 1 dependent. In analyzing positive responses about Medical, workers with no dependents barely

mentioned the category but workers with 1 dependent yielded a significantly higher number of positive responses. For the category, Family, there were no significant multiple comparisons.

As mentioned earlier, the dimension of “Collectivism” is greatly portrayed in the Mexican workers’ need to earn resources to support family. Being married in the Mexican culture usually includes additional responsibility of providing for children. Additional monies that “overtime” brings is of utmost necessity in providing basic necessities for the family. Thus, when overtime is received the workers with children will be openly appreciative of the company. Workers without dependents, while they do enjoy the additional monies, are not “dependent” on it. As one single worker stated, “Overtime is not regularly given, so I plan not to get it. When it is offered I see it as a bonus.” Despite the low pay and living conditions apparent in maquiladora workers, the overtime earnings, while they may be small, are vital to the household well-being.

Tenure

The independent variable, Tenure, is defined as the number of years that a worker has with the company; and in this study, it contains three classifications: workers with less than one year tenure, workers with one year tenure, and workers with two or more years of tenure. Twenty-two of the workers had less than one year of tenure, twenty-two had one year of tenure, and thirty-one workers had two or more years of tenure. One-way ANOVA’s were conducted comparing the mean number of positive statements by each of these three groups on each of the twenty-four categories. In each of these ANOVA’s, the independent variable was Tenure with three levels of classification: 0 years, 1 year, and 2 or more years. The significant results are displayed in Table 7.

Category	F	p-value	significance
Benefits	7.73	.001	****
Job Availability	2.63	.079	*
Plant Policies	4.42	.015	**
Promotion	4.97	.009	***
Security	4.54	.014	**
Social Events	4.04	.022	**
Transportation	3.09	.051	*

*denotes significant at $\alpha = .10$
 **denotes significant at $\alpha = .05$
 ***denotes significant at $\alpha = .01$
 ****denotes significant at $\alpha = .001$

As shown in Table 7, out of the twenty-four categories, there were significant differences by Tenure on seven categories: Benefits, Job Availability, Plant Policies, Promotion, Security, Social Events, and Transportation. The F values were significantly different at the .001 level for Benefits; at the .01 level for Promotion; at the .05 level for Plant Policies, Security, and Social Events; and at the .10 level for Job Availability and for Transportation. For each of these seven categories Tukey's HSD tests were run to determine which pairs, if any, of the three levels of tenure were significantly different. The results of this analysis showed that workers with less than one year of tenure yielded significantly higher mean numbers of positive statements about Benefits than did workers in either of the other two classifications (more tenure). The only significant difference on the category, promotion was between workers with less than a year of tenure and those with one year. In this case, the workers with less than a year of tenure yielded a significantly higher mean number of positive responses than did those workers with one year of tenure. On Plant Policies, there was a significant difference between workers with less than one year of tenure and those with two or more years with the group with less than one year of tenure yielding a significantly higher mean number of positive responses. On Security, there was a significant difference between workers with less than one year of tenure and each of the other two groups with the group with less than one year of tenure yielding a significantly higher mean number of positive responses. On Social Events, the group with 2 or more years of tenure yielded a significantly higher number of mean positive responses than did the group with just one year of tenure. For the categories of Job Availability and Transportation, there were no significant multiple comparisons.

In the maquiladora industry there is a problem with retention of workers. The fact that maquiladoras are located within a few yards of each other in industrial parks, allows for quick movement by workers. Workers are not concerned on gaining seniority or experience in a particular plant, but what the plant has to offer concerning financial resources and benefits. Due to their low social-economic status, maquiladora workers are known to leave one plant for another simply because of an additional benefit or even as little as a \$ 0.10 increase an hour. For instance, this recently hired worker states, "I really liked my (previous) job at the other plant, but a better opportunity came along, and I had to take it because of necessity." The workers whose tenure is less than a year were particularly impressed with the benefits, plant policies, promotion, and security. These factors are reasons that made them come to this plant so they are talking positive about them. Recently hired workers are eager to see financial security and that the particular plant that they are employed in is "taking care" of their needs. It is not surprising that low-tenured workers are accepting of their new work environment.

Another interesting finding is workers with longer than two years made more positive comments about social events than the other two groups. Some maquiladoras engage in meeting the social needs of the workers. Their collectivistic nature indicates their need to engage with their coworkers and family in a social setting. Workers with at least two years of tenure have seen their share of "Posadas", Mother's day celebrations, birthday celebrations, soccer leagues, and many

others. A worker states her approval of events catered for women. She states, “They also have volleyball for girls and beauty contests. Any type of activities that involves the workers outside of work is fun and needed for the worker to feel excited about working here.” Thus, their positive comments demonstrated their satisfaction with the maquiladoras’ attempts to fulfill their social expectations.

Age

The independent variable, Age, contains three classifications: workers younger than 20-years old, workers 20 to 30 years of age, and workers 31 to 40 years of age. Sixteen of the workers were less than 20-years old, forty-five workers with in the 20-30 year age bracket, and fourteen workers were between 31 and 40 years of age. One-way ANOVA’s were conducted comparing the mean number of positive statements by each of these three groups on each of the twenty-four categories. In each of these ANOVA’s, the independent variable was Age with three levels of classification: less than 20 years, 20 to 30 years of age, and 31 to 40 years of age. The significant results are displayed in Table 8.

Category	F	p-value	significance
Benefits	2.61	.080	*
Overtime	3.23	.045	**

*denotes significant at a = .10
 **denotes significant at a = .05

As shown in Table 8, out of the twenty-four categories, there were significant differences by Age on only two categories: Benefits and Overtime. The *F* values were significantly different at the .05 level for Overtime and at the .10 level for Benefits. For each of these two categories Tukey’s HSD tests were run to determine which pairs, if any, of the three levels of tenure were significantly different. On neither category were there significant multiple comparisons.

According to Maquila Portal.com, in Aug 2007, there were 2,817 maquiladoras employing 1,191,250 assembly-line workers earning \$1.98 an hour. The results based on “age” show the importance benefits and overtime are to workers. Considering the low economic status of the workers, benefits and overtime are the only additional sources of income besides their hourly wage. It is of great significance to earn additional monies that come as a result of their hard work and dedication to the plant. As one worker said, “Every year they raise the pay a little bit more but it’s never enough.” Another worker remarked on the importance of “extra” income, “As for the operators we work just to live day by day. Anything extra given to us is appreciated.”

OBSERVATIONS AND MANAGERIAL IMPLICATIONS

First, the outcome of this investigation reveals that Mexican culture, coupled with Hofstede's dimensions, does affect a worker's perception of what they constitute as being "positive" in working at a particular maquiladora. The most significant feature of this study was the actual conversations with the workers themselves. Their feelings, opinions, and beliefs regarding positive factors in maquiladoras were openly expressed and used to derive the given conclusions.

Through the positive statements it is evident that certain categories are more important to the workers than others. As shown in Table 2, statements that mentioned their "supervisor" were on the top of the list. This revelation confirms the important role that the supervisor plays in the work life of a maquiladora worker. In the global arena, managers must avoid imposing domestic American management practices and theories on their international business practices (Adler, 2008). Since motivation and work behavior issues are not restricted to cultural boundaries, the effect of motivational aspects on an individual's job performance needs to be reexamined.

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APPENDIX A

Interview Questions (English version)

Demographics

- Gender
- Age
- Marital status
- Children or dependents
- Education

Previous Employment

1. How many jobs and types of jobs have you had including this one?
2. Is this your first maquiladora job? If not, how many have you worked in?
3. What was your previous job? How long was your stay?
4. What did you like about your previous job?
5. What did you dislike about your previous job?
6. Why did you leave?

Current Employment

7. Why did you want to work in a maquiladora?
8. How long have you worked in this maquiladora?
9. How did you hear about this job?
10. Why did you want to work at this particular maquiladora?
11. What did you find attractive about this particular maquiladora?
12. Tell me some things you like about your job.
13. Tell me some things you do not like about your job.
14. If you could change something about your job, what would it be?
15. Do you have relatives/friends working in this firm?
16. Why do you think they work here?
17. Have you had friends/relatives that have left this maquila?
18. If yes, why did they leave?
19. Do you have relatives/friends working in other maquiladoras?
20. Why do you think they work there?
21. What are some good things that they have mentioned about their jobs?
22. What are some bad things that they have mentioned about their jobs?
23. Do you have relatives/friends working in other types of jobs instead of maquiladoras?
24. What are some good things that they have mentioned about their (non-maquila) jobs?
25. What are some bad things that they have mentioned about their (non-maquila) jobs?

Organization

26. What are some things that you like about the maquila you work at?
27. What are some things that you do not like about the maquila you work at?
28. If you could make changes, what would they be?
29. Regarding friends or relatives that have left the maquila, what could the organization have done to keep them from leaving?

Future

30. How likely is it that you will stay in this maquila?
31. Where do you see yourself in three years?
32. What would you like to learn?
33. What would your friends in the maquila like to learn?
34. What position would you like to have?
35. What position would your friends like to have?

APPENDIX B

Definition of Categories of Inducements

APPRECIATION	These are events involving individual and/or group recognition involving both performance and other factors: awards for best team, birthday cakes, Mother's Day, etc
BENEFITS	Legally required benefits such as aguinaldo, social security, etc. as well as other benefits such as savings plans and reimbursement for transportation.
BONUSES	Related to both work performance and other factors, i.e. production, attendance, food coupons, etc.
CAFETERIA	Anything having to do with the cafeteria and/or food, including quality and variety of food, how long people have to eat, whether the person is charged, brings food from home, etc.
CO-WORKERS	Made friends, working with friends, stay with my own group, etc.
EDUCATION	Includes views towards taking additional classes, and other forms of self improvement and skill development, including in and out of the plant.
FAMILY	Including parents, children, spouse, siblings
FLEXIBILITY	Views towards job rotation, changing lines, etc.
HEALTH	Feet hurt, dust in the air, get nauseated, extractors for the fumes don't work, earplugs.
JOB	Easy, difficult, hard, interesting, boring, any comments related to their particular job they are performing
JOB AVAILABILITY	Specifically in why a person is at a particular plant; fast hiring, etc.
MANAGEMENT	Exempt employees (office staff, engineers)
NETWORKING	Includes statements relating to a person getting a job or staying at his or her job due to involvement of friends and family.
OVERTIME	Includes views towards being forced to work overtime, wanting to work move overtime, etc.
PAY	Pay is good, bad, more here than elsewhere, etc
PLANT CONDITIONS	Comments about the plant's working conditions
PLANT POLICIES	Including tolerance time, policy towards breaks, special policies for pregnant women, etc
PROMOTION	Anything having to do with advancing in their Position; getting a higher position
SECURITY	Includes lack of security, comments about "being laid off, and feeling secure on the job
SHIFTS	Views/comments about working different shifts
SOCIAL EVENTS	Generally outside of the workplace, i.e. posada, picnics, soccer games, etc.
SUPERVISOR	Treat the workers well, yell at workers, take workers ideas into account, etc., includes "jefe del grupo".
TRANSPORTATION	Issues in getting to the plant (excluding transportation bonuses)

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