EXAMINATION OF MULTINATIONAL CORPORATE CAPITAL STRUCTURE DECISIONS IN ZIMBABWE

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Abstract: This study uses a balanced panel data set from 2000 to 2008. The objectives of this study are to; (i) synthesize the theory on multinational companies with the orthodox corporate finance theories (ii) analyse the explanatory power of some of the theories that have been proposed to explain variations in capital structures across firms and, (iii) empirically examine the major determinants of capital structure decisions of multinational corporations listed on the Zimbabwe Stock Exchange. It utilizes panel data regression analysis (fixed effects {within} estimator) to empirically examine the impact of different determinants on leverage. The general findings are that tax, tangibility and size have a significant positive relationship with debt ratio while the pay-out-ratio; non-debt-tax-shields and profitability have a significant negative relationship with debt ratio. The results are broadly consistent with theory.

Key words: Multinational, Corporate Capital Structure

INTRODUCTION

Generally, economists do not agree as to how multinational corporations should be defined. Consequently, multinational corporations can be viewed from several perspectives (ownership, management, strategy and structural, among others). From the ownership perspective, a firm becomes multinational only when the parent company is effectively owned by nationals of two or more countries while from nationality mix of headquarter managers, an international company is multinational if the managers of the parent company are nationals of several countries. Business strategy perspective suggest that an MNC is a parent company that engages in foreign production through its affiliates located in several countries, exercises direct control over the policies of its affiliates, implements business strategies in production, marketing, finance and staffing that transcend national boundaries. This lack of agreement over definitions leaves room for flexibility in the use of definitions for research purposes. For the purpose of this research a multinational corporation is defined as a firm that reports business activity from other than Zimbabwean sources (that is, a non-Zimbabwean geographical segment).

Multinational corporations play a major role from both the national and global perspective. For example, multinationals are a source of foreign direct investment and provide employment to the host country. About 65000 multinationals held total foreign assets of US$25 trillion, this is about 78% of world GDP while foreign affiliates of multinationals employed more than 53 million workers worldwide. Their importance in terms of employment varies, but for countries with open investment regimes, multinationals typically account for between one third and one half of total employment. Operating in many countries, multinational corporations (MNCs) are subject to multiple
tax jurisdictions, that is, they must pay taxes to several countries. Thus when tax rates differ, firms with subsidiaries located in relatively low-tax countries may benefit vis-à-vis firms in higher-tax locations. On the other hand, firms can use leverage in their capital structures to reduce the “tax bite” on corporate earnings. Thus, according to Modigliani and Miller (1961), firms can effectively reduce their taxes via capital structure decisions. However, the extensive use of leverage can create problems when earnings are uncertain. In these circumstances, borrowing can increase tax shields; but it also increases costs such as the possibility of losing tax shields as well as agency costs and financial distress costs.

MNCs can also reduce tax differentials and influence the costs of leverage by shifting income and/or tax shields across subsidiaries, that is, they can use leverage to reduce the negative valuation effects of operating in a high-tax environment. For example, MNCs with subsidiaries in countries with different tax rates on interest payments can benefit by borrowing through foreign affiliates exposed to high tax rates, thus increasing their interest tax shields. This could involve sale-and-lease-back arrangements, back-to-back loan structures, transfer-pricing adjustments, cross-guarantees of subsidiary debt, or a variety of other mechanisms. Although shifting income can be very costly, the benefits for the firm may outweigh the costs.

Modigliani and Miller (1958), in their ground breaking paper, and Modigliani and Miller (1961) argue that the value of the firm is independent of its capital structure choice, assuming a perfect capital market. However, a relaxation of the perfect market assumption indicates that taxation, asymmetric information and agency costs play an important role in determining corporate financial policy. Following the work of Modigliani and Miller (1958), several perspectives on capital structure were introduced. Of particular prominence are: the tradeoff theory, the agency theory framework and the pecking order hypothesis. In the tradeoff theory, firms move towards a targeted capital structure that reflects a trade-off between the benefits of leverage such as asset type, profitability, tax savings or mitigation of agency problems against the costs of leverage such as the expected deadweight costs of bankruptcy. In the pecking order theory, financial market imperfections are crucial. Due to adverse selection, firms prefer to finance their activities using retained earnings if possible. If retained earnings are inadequate, then they turn to the use of debt. Equity financing is only used as a last resort. The agency theory framework focuses on information asymmetry problem at both the firm and market level and thus defines agency costs as the sum of the monitoring expenditures by the principal, bonding costs by the agent, and a residual loss.

The research centres on Zimbabwe mainly because studies of this nature (on capital structure) have been relatively scanty and, from the literature available, no study has been done on multinational corporations to date. Mutenheri and Green (2002) did a study exclusive to Zimbabwe. However, the study examined the impact of the economic reform programme on the financing choices of Zimbabwean listed companies. This research differs from Mutenheri and Green in that it considers only MNCs and goes to the extent of synthesizing the theory on multinational companies with the orthodox corporate finance theories of capital structure.

**Macroeconomic Background** In this modern world, more and more companies...
are setting up operations in different countries as a means to expand their business in new and rapidly growing markets. However, these operations need to be financed in order to grow in an environment with high interest rates, constantly changing taxes and regulations, uncertain political and economic outlook, high inflation and permanent currency volatility. Against this background, financing decisions have to be made based on a large number of variables that affect the net final cost of such decisions for multinational companies and/or subsidiaries in different parts of the world.

The period 2000 to 2008 was one similar to that which obtained during the Unilateral Declaration of Independence (UDI) era of 1965. The country had been subjected to both official and unofficial sanctions which included a halt of balance of payments (BOP) support and financial aid from both the International Monetary Fund (IMF) and the World Bank, negative publicity from western countries and several calls from western countries to reduce business with Zimbabwe. It was a period fraught of political instability on the domestic scene, which led to the disengagement of Zimbabwe on the international community (at least unofficially).

The high inflation rates recorded for the period have often been described as hyperinflationary. High inflation levels (above 600%) were recorded in 2007, which could have been, inter alia, the result of shortages of basic commodities, fuel price increases, a loose monetary policy, general contraction in economic activity and indexation. The high rates of inflation experienced would mean that much of the cash generated by companies was required to fund inflationary increases in working capital requirements and little left for reinvestment with a potential negative effect on economic growth while less profitable firms would have to resort to borrowing for survival. In theory, inflation is expected to have a positive effect on leverage based on the view that inflation reduces the “real cost” of employing debt by eroding the repayment of the principal.

Overview of the Financial System
Following the work of Modigliani and Miller (1958), the value of a firm is equal to the sum of the market value of all its securities (common shares and debt). This implies that firms can finance their assets (physical) using debt or equity over and above their internally generated funds. Debt and equity constitute an external source of finance, which, in the case of less developed financial systems, can lead to constrained investment. Well-developed financial systems should be able to meet the financial demands of the corporate sector (to avoid constrained investment with its negative impact on economic growth) such that poor economic performance by firms reflects managerial and labour market, not financial market, and deficiencies. An advantage of well-developed financial systems is that these financial systems have the ability to internalize the externalities associated with information collection and coordination of control to the extent that they are better able to sustain the higher levels of external funding. In this regard, better-functioning financial systems ease the external financing constraints that impede firm and industrial expansion and, hence, lead to growth.

An exploration of the development of the financial system was done, from 2000 to 2008, using indicators of banking system development and stock market development. It is, however, important to note that in this period, the banking sector was now serving a bigger corporate sector as witnessed by a
rise in the number of indigenous companies as compared to past periods when a few foreign owned corporations dominated the sector. This could imply that the banking sector had problems meeting the credit demands of the corporate sector. The financial system grows substantially faster than both GDP and wealth at the earliest stages of development. While financial development may have an effect on economic growth, it is important to note that the direction of causality is by no means one-way. Financial development is partly a response to the growing demands for its services by the rest of the economy. Thus, there are two competing views about the impact of financial development on growth; the finance leads growth nexus and the growth leads finance nexus. Financial development is important for two major reasons; it promotes capital formation by increasing the supply of investible resources, while capital markets exert pressure on investors to use resources for the maximum in order to repay loans and qualify for new financing.

Recent studies have focused on the impact of bank development and stock market development on economic growth. Empirical literature supports the hypothesis that there is a relationship between stock markets and banks and economic growth. To sum up, the study of financial development is important for this research because local financial development increases the chance that an individual starts his/her own business, increases competition and promotes the growth of firms through the provision of external finance.

The Formation of the Zimbabwe Stock Exchange Equity markets are important for several reasons. First, an equity market provides investors and entrepreneurs with a potential exit mechanism. Second, capital inflows – both foreign direct investment (FDI) and portfolio investments – are potentially important sources of investment funds for an emerging market like Zimbabwe. Finally, the existence of a stock market provides important information that improves the efficiency of financial intermediation generally. For traded companies, the stock market improves the flow of information from management to owners. Equity markets also help public enterprises to ‘go public’ and raise capital, or to be privatised.

Realizing the economic importance of securities markets, the first stock exchange in Zimbabwe was established in 1896, shortly after the arrival of the Pioneer Column in Bulawayo. It was however only operative for about 6 years. A second floor was opened in Salisbury (Harare) in December 1951. In common with other stock exchanges, the objectives of the ZSE include the followings:

i. Providing a link between investors (deficit units) and savers (surplus units).
ii. The regulation, organization and control of the issue of securities in the primary market.
iii. The organization of the transfer of ownership in the secondary market.

The Zimbabwe Stock Exchange was formalized in 1974 following the passing out of the Zimbabwe Stock Exchange Act in the statute book. The exchange uses a call over system of trade and the shares listed on the Zimbabwe Stock Exchange include ordinary shares, preference shares, bonus issue, rights issue and debentures, while bonds are also traded on the same exchange.

Market capitalization/GDP measures the value of domestic equities listed on the domestic exchange as a share of GDP while
Turnover value/GDP measures the total value of trades of shares on the domestic exchange as a share of GDP, that is, it measures trading relative to the size of the economy. The number of listed companies shows the increasing/decreasing requirements for long-term external finance as reflected by the increasing/decreasing number of listed companies. The ratios of Market capitalization/GDP and Turnover value/GDP show a modesty increase. On the other hand, the number of listed companies has been increasing. All these observations point to the increasing needs for long-term external finance.

**Transaction Costs** The costs of trading on the Zimbabwe Stock Exchange are in the form of charges or commissions and taxes. These include a basic charge (on both buy and sell transactions), stamp duty (on shares purchased or sold) and a transfer fee on purchases.

Taxes are in the form of Withholding Tax on dividends (deducted at source) and Capital Gains Tax (with a 30% per annum allowance for inflation). Defining all these transaction costs as a tax on equity added to the ordinary taxes (Withholding Tax on dividends and Capital Gains Tax), they would create a tax bias against equity in favour of debt financing which offer interest expense deductibility. This will also include the brokerage commissions.

**Foreign investment regulations on ZSE** The exchange was opened for foreign participation on 1 June 1993. However, individual foreign investors can only purchase up to 10% of the total shareholding while they can collectively own 40% of the shareholding on each listed company. Repatriation of income and capital is free but subject to deduction of capital gains tax whenever applicable. Companies are, however, required to apply for permission to remit dividends under the current Exchange Control policy. While the ratios above show a remarkable improvement in the financial system, it is important to note that the rate at which companies go public is not rapid relative to other developing countries, like some East Asian countries. This might be due to the high listing requirements, which, according to the 2004 Zimbabwe Stock Exchange, include a minimum of 300 public shareholders entitled to at least 10000 shares, among other requirements. Thus it is recommended that the exchange come up with listing requirements that are in line with these companies such as the Alternative Investment Market Segment (to cater for those firms which do not meet the current listing requirements, for example small and medium enterprises) along side the Main Investment Market Segment (the current one). The Nairobi Stock Exchange (NSE) and the Johannesburg Stock Exchange (JSE) are leading examples. To sum up, countries with high Market capitalization/GDP, Turnover value/GDP, bank Assets/GDP, loans/GDP and Domestic credit to private sector/GDP imply that a large proportion of firms are growing at a level that requires access to external sources of capital.

**Problem Statement** Most researches on capital structure have been confined to developed countries at the expense of developing countries. As such the question of how firms choose the debt, equity or hybrid securities they issue remain a mystery to many in the context of developing countries. What can be said is that capital structure changes convey information to investors (Myers, 1984). This problem is further aggravated by the fact that capital structure theories do not seem to explain actual financing behaviour. For example, Modigliani and Miller (1958) argue that the value of a firm is independent
of its capital structure, suggesting that a firm can decide to finance its assets using debt or equity only. However, it is rare to find a firm that is entirely debt financed and to assume that corporate tax rate is the only determinant of capital structure choice would be an understatement of the problem - corporate income tax came a long way after the existence of debt. In reality, however, firms tend to pursue different financing patterns based on their characteristics (size, profitability, among others). The major questions that this thesis will seek to answer is ‘If firms are not 100% debt or equity financed, what then influence their capital structure decisions? Are the factors that influence capital structure decisions similar in both developing and developed countries?’

**Objectives**

The main objectives of this research are to synthesize the theory on multinational companies with the orthodox corporate finance theories of capital structure, to analyse the explanatory power of some of the theories that have been proposed to explain variations in capital structures across firms and to empirically examine the major determinants of capital structure decisions of multinational corporations listed on the Zimbabwe Stock Exchange.

**MATERIALS AND METHODS**

We use the debt ratio (the ratio of total borrowing to total assets) as a measure of leverage. This is the broadest definition of leverage used as a proxy for what is left for shareholders in case of liquidation.

**Data and Sample description**

Data for the analysis were obtained from the Zimbabwe Stock Exchange Handbooks, companies’ annual reports and the Central Statistical Office (CSO). The data obtained from the CSO was for the calculation of the implicit price deflator (that is, data for real Gross Domestic Product and nominal Gross Domestic Product). The data to be used is annual data and total assets for the calculation of size are converted into 1995 dollars using the GDP deflator. Other data will be historical since these are ratios and will not be affected by inflation. All firms that had missing observations for any variable in the model during the period were dropped. Thus two firms were dropped based on this criterion (missing data) yielding a final sample of 21 firms.

In common with other empirical studies on capital structure choice, regulated and financial firms (banks, insurance companies and investment trusts) are not included in the study.

There is a need to classify firms into those that are multinationals. Several classification criteria have been suggested in literature, including the foreign tax ratio (Lee and Kwok, 1988) and the number of countries in which the firm operates (Stanley and Stanley, 1983), among other criteria. We therefore classify a company as a multinational company if a firm reported business activity from other than Zimbabwean sources (that is, a non-Zimbabwean geographical segment based on information obtained from the various Zimbabwe Stock Exchange Handbooks for the period).

**Methodology adopted**

The literature on capital structure suggests a number of factors that may influence capital structure decisions/choice. We employed the panel data estimation technique (static model) for the sample of firms in Zimbabwe.
**Empirical Model** A linear relationship between leverage and its determinants is assumed for the purpose of this research. Accordingly the empirical model is expressed as:

$$DebtR_{it} = \alpha + \beta' X_{it} + \mu_{it} \quad \text{............... (1)}$$

where:

- $DebtR_{it}$ = debt ratio (Leverage) is the dependent variable, expressed as the ratio of total borrowing to total assets. This is the broadest definition of leverage used as a proxy for what is left for shareholders in case of liquidation.

- $\mu_{it}$ = is a composite residual comprised of a firm-specific component, $\eta_i$, a time-specific component, $\lambda_t$, and a component that varies across firms and over time, $\upsilon_{it}$. Thus, $\mu_{it} = \eta_i + \lambda_t + \upsilon_{it}$

The general regression model is as follows:

$$DebtR_{it} = \alpha + \beta_1 \text{TANG}_{it} + \beta_2 \text{SIZE}_{it} + \beta_3 \text{TAX}_{it} + \beta_4 \text{PROF}_{it} + \beta_5 \text{POR}_{it} + \beta_6 \text{NDTS}_{it} + \beta_7 \text{LIQ}_{it}$$

$$+ \beta_8 \text{GROWTH}_{it} + \mu_{it} \quad \text{................................................... (2)}$$

i = 1……..21; t = 2000…2007

In other words, this is the general model that we estimated for the sample. The explanatory variables and the expected signs of their coefficients are given as follows:

- $\text{TANG}_{it}$ (+) = tangibility, is defined as the ratio of fixed assets to total assets and is expected to enter the model with a positive coefficient. Tangibility is one among the measures of asset structure.

- $\text{SIZE}_{it}$ (+) = Size. This relates to size of the firm, computed as log (total assets/GDP deflator). Firm size is expected to have a positive impact on debt because the risk of bankruptcy is lower for large firms due to diversification.

- $\text{TAX}_{it}$ (+) = Tax. Defining tax variables for individual firms is difficult because the marginal tax shield should be either zero or positive for all firms. To define a proxy for these interactions, an average tax rate will be calculated from data using tax paid and earnings before tax. Tax is defined as tax paid divided by net income before tax. Ozkan (2002) used this same measure. The main advantage of the average tax rate is that it includes the impact of tax loss carry-forwards and the use of corporations as a conduit for income flows. Tax is expected to have a positive effect on leverage.

- $\text{PROF}_{it}$ (+/-) = Profitability (Return on assets is here a proxy for profitability) is here defined as the ratio of net income before tax (NIBT) to total assets. Profitability enters the model as a proxy for the pecking order theory.

- $\text{POR}_{it}$ (-) = Pay-out-ratio (POR $i_t$) defined as dividend per share/earnings per share. The Pay-out-ratio is expected to enter the model with a negative sign.

- $\text{NDTS}_{it}$ (-) = Non-debt tax shield is defined as the ratio of deferred tax to net income before interest and tax (NIBIT), is included as a proxy for the trade-off theory, and in particular as an inverse proxy for the benefits of debt. It is expected to enter the model with a negative coefficient, because deferred tax is a substitute for tax benefits of debt financing in shielding profits from tax liabilities.

- $\text{LIQ}_{it}$ (+) = liquidity is defined as the ratio of current assets to current liabilities and is a proxy for the trade-off theory. It is expected to enter the model with a positive coefficient because the ability to meet short-term obligations increases the firm’s debt capacity. Here, the definition of Ozkan (2001) is utilised.

- $\text{GROWTH}_{it}$ (-) = Growth, defined as
Beran and Danbolt (2002) and Ozkan (2001) also employed this definition. Growth is included to represent agency cost of debt. Growth gives managers greater opportunities to engage in risk shifting and thus growth is expected to enter with a negative coefficient. Furthermore, consistent with the agency theory of debt, highly levered firms tend to pass up profitable investments thus growing firms prefer equity to debt.

**Estimation Procedure** We estimate the model using a balanced sample of 21 firms, each of which has data for the entire period from 2000 to 2008. The model can be estimated in several ways, but the appropriate technique depends on the structure of the error term, $\mu_{it}$, and the correlation between the components of the error term and the observed determinants of leverage. Assuming that there are no firm- or time- specific effects, that is, $\eta_i = \lambda_t = 0$, Ordinary Least Squares (OLS) becomes an appropriate technique. However, it might be expected that both unobservable firm-specific and time specific-factors will have an effect on leverage.

Unobservable effects can be accommodated using one of two techniques: the “random effects” estimator and the “fixed effects” estimator. These estimators are designed to handle the systematic tendency of $\mu_{it}$ to be higher for some individuals than for others (individual effects) and possibly higher for some time periods than for others (time effects). The fixed effects estimator does this by using a separate intercept for each individual or time period. Since the sample size (N) is usually large, this is done by subtracting out individual and/or time means.

**Tests for the significance of firm and time effects.**

<table>
<thead>
<tr>
<th>Period 2000 – 2008</th>
<th>Null hypothesis</th>
<th>Test statistic</th>
<th>Statistic distribution</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>All variables (8)</td>
<td>$\eta_i = \lambda_t = 0$ $\forall i, t = 1 \ldots 20$</td>
<td>190.3</td>
<td>$\chi^2(24)$</td>
<td>[0.000]</td>
</tr>
<tr>
<td>Firm and Time effects</td>
<td>$\eta_i = \lambda_t = 0$ $\forall i, t = 1 \ldots 20$</td>
<td>551.9</td>
<td>$\chi^2(20)$</td>
<td>[0.000]</td>
</tr>
<tr>
<td>Firm effects</td>
<td>$\eta_i = 0$ $\forall i, t = 1 \ldots 20$</td>
<td>4.327</td>
<td>$\chi^2(3)$</td>
<td>[0.228]</td>
</tr>
<tr>
<td>Time effects</td>
<td>$\lambda_t = 0$ $\forall i, t = 1 \ldots 3$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

We also use the Hausman (1978) specification test to examine whether or not the firm effects are uncorrelated with the regressors. The Hausman statistic is 63.01 with a p-value of 0.0000. This suggest that the explanatory variables are correlated with
the unobservable firm effects such that the random effects estimator becomes inconsistent, hence, we use the one way fixed effects (within) estimator. The Hausman statistic, on the comparison between the fixed and random effects models where time effects are included, also rejects the null hypothesis of exogeneity. The Hausman statistic is 0.59 with a p-value of 0.9997.

Since our aim is to examine the extent to which the debt ratio is explained by the eight characteristics, we adopt a general-to-specific estimation procedure. First we estimate the general model including all explanatory variables. In the second step, all insignificant variables are dropped one by one to get the specific model starting with the most insignificant variable. This approach is adopted from Ozkan (2002).

**DESCRIPTIVE STATISTICS AND CORRELATIONS**

Table below shows the summary of descriptive statistics and correlations.

**Descriptive Statistics table**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std.Dev.</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Skewness</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEBTR</td>
<td>0.2384</td>
<td>0.2187</td>
<td>0.0040</td>
<td>0.8700</td>
<td>1.2511</td>
<td>3.7054</td>
</tr>
<tr>
<td>TANG</td>
<td>0.4205</td>
<td>0.5143</td>
<td>0.0000</td>
<td>4.5620</td>
<td>6.2583</td>
<td>50.7590</td>
</tr>
<tr>
<td>SIZE</td>
<td>6.7504</td>
<td>0.6387</td>
<td>5.6800</td>
<td>8.4210</td>
<td>0.6581</td>
<td>2.9346</td>
</tr>
<tr>
<td>TAX</td>
<td>0.1859</td>
<td>0.1702</td>
<td>-0.8010</td>
<td>0.6870</td>
<td>-2.2535</td>
<td>15.3506</td>
</tr>
<tr>
<td>PROF</td>
<td>0.2820</td>
<td>0.4266</td>
<td>-0.2690</td>
<td>2.7110</td>
<td>3.3567</td>
<td>17.0032</td>
</tr>
<tr>
<td>POR</td>
<td>0.1089</td>
<td>1.2317</td>
<td>10.5000</td>
<td>1.8570</td>
<td>-7.6239</td>
<td>66.4005</td>
</tr>
<tr>
<td>NDTs</td>
<td>0.6210</td>
<td>2.8190</td>
<td>-2.6230</td>
<td>25.0010</td>
<td>7.8008</td>
<td>67.4532</td>
</tr>
<tr>
<td>LIQ</td>
<td>2.2192</td>
<td>2.1005</td>
<td>0.1550</td>
<td>16.2070</td>
<td>4.2588</td>
<td>25.7856</td>
</tr>
<tr>
<td>GROWTH</td>
<td>1.7723</td>
<td>2.1897</td>
<td>-0.9900</td>
<td>8.5320</td>
<td>1.6301</td>
<td>4.8181</td>
</tr>
</tbody>
</table>

**Correlation Matrix table**

<table>
<thead>
<tr>
<th></th>
<th>DebtR</th>
<th>TANG</th>
<th>SIZE</th>
<th>TAX</th>
<th>PROF</th>
<th>POR</th>
<th>NDTs</th>
<th>LIQ</th>
<th>GROWTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>DebtR</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TANG</td>
<td>0.174</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>0.217</td>
<td>-0.056</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAX</td>
<td>0.334</td>
<td>-0.060</td>
<td>0.122</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROF</td>
<td>0.001</td>
<td>0.265</td>
<td>0.214</td>
<td>0.033</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POR</td>
<td>0.050</td>
<td>-0.086</td>
<td>0.141</td>
<td>0.645</td>
<td>0.098</td>
<td>1.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NDTs</td>
<td>-0.033</td>
<td>0.043</td>
<td>0.117</td>
<td>0.020</td>
<td>-0.098</td>
<td>0.069</td>
<td>1.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LIQ</td>
<td>-0.096</td>
<td>0.089</td>
<td>0.012</td>
<td>-0.02</td>
<td>0.085</td>
<td>-0.007</td>
<td>0.018</td>
<td>1.000</td>
<td></td>
</tr>
<tr>
<td>GROWTH</td>
<td>0.159</td>
<td>-0.199</td>
<td>0.776</td>
<td>0.154</td>
<td>0.048</td>
<td>0.113</td>
<td>0.022</td>
<td>0.052</td>
<td>1.000</td>
</tr>
</tbody>
</table>

In general, we find that MNCs are less leveraged (23.84%, as shown in table above) compared to Japanese firms (69%, in 1991). However, Booth, Aivazian, Demirguc-Kunt and Maksimovic (2001) use a different measure of leverage (total liabilities/ {total liabilities + net worth}) but even so concluded that Zimbabwe is a low debt country (30.3%) compared to Japanese firms (69%). Based on this result, Zimbabwean
firms are much more similar to Germany and Italian firms with leverage ratios around 21% (according to Rajan and Zingales, 1995). The low debt ratio levels of firms can be explained in part by the absence of an active bond market for corporate securities and rationing by banks. Therefore, to increase the number of alternatives to borrowing there is a need to put measures that encourage confidence in the corporate bond market such as engaging bond rating agencies (national/international) with good reputation.

With respect to the explanatory variables, the average tax rate is 18.59%, while average tangibility is 42.05%. The average profitability is 28.20%, the average pay-out-ratio (POR) is 10.89% and the average non-debt-tax-shield (NDTS) is 62.3%. Tax and pay-out-ratio are negatively skewed while the other variables are positively skewed.

Correlation Matrix table shows the correlation matrix for the pooled sample of 84 observations. We observe that POR, profitability, liquidity (LIQ), tax, growth and NDTS are positively related to size, while tangibility has a negative relationship with size. This implies that large firms tend to pay more in terms of dividends and are more profitable, but they also have fewer tangible assets relative to their size. All the other independent variables are positively correlated with tax with the exception of liquidity and tangibility. This could be because larger amounts of tangible assets entail more non-debt-tax shields, which are deductible for tax calculation.

Non-debt-tax-shields and liquidity are negatively correlated with the debt ratio. All the other explanatory variables have positive correlations with debt ratio. This implies that firms increase their debt as their profitability; size and tax increase, but reduce debt as liquidity and the level of non-debt-tax-shields (deferred tax/NIBIT) increase. This implies that firms tend to increase debt when they pay taxes than when they defer taxes.

**ESTIMATION RESULTS**

Results from the static one way fixed effects regression with robust standard errors is reported in the table below. We get the Specific Model from the General Model by excluding all the insignificant variables one by one starting with the most insignificant variable.

<table>
<thead>
<tr>
<th>Results of the static one-way fixed effects regression</th>
<th>Period 2000 – 2008</th>
<th>General Model</th>
<th>Specific Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variable</td>
<td>Expected sign</td>
<td>Coefficient</td>
<td>t-statistic</td>
</tr>
<tr>
<td>Constant</td>
<td></td>
<td>-0.4903</td>
<td>-1.17</td>
</tr>
<tr>
<td>TANG (+)</td>
<td></td>
<td>0.0936</td>
<td>7.65</td>
</tr>
<tr>
<td>SIZE (+)</td>
<td></td>
<td>0.0689</td>
<td>1.03</td>
</tr>
<tr>
<td>TAX (+)</td>
<td></td>
<td>0.3991</td>
<td>2.44</td>
</tr>
<tr>
<td>PROF (+/-)</td>
<td></td>
<td>-0.0637</td>
<td>-2.66</td>
</tr>
<tr>
<td>POR (-)</td>
<td></td>
<td>-0.0367</td>
<td>-2.50</td>
</tr>
<tr>
<td>NDTS (-)</td>
<td></td>
<td>-0.0026</td>
<td>-1.57</td>
</tr>
<tr>
<td>LIQ (+)</td>
<td></td>
<td>-0.0003</td>
<td>-0.075</td>
</tr>
<tr>
<td>GROWTH (-)</td>
<td></td>
<td>0.0015</td>
<td>0.106</td>
</tr>
<tr>
<td>No.</td>
<td></td>
<td>84</td>
<td>84</td>
</tr>
</tbody>
</table>
All the statistically significant coefficients are consistent with our predicted hypothesis. The parameter estimates and test statistics for the significant variables in the Specific Model are different from those of the General Model; hence, in the following discussion we comment on the results of the Specific Model.

INTERPRETATION OF RESULTS AND DISCUSSIONS

The $\chi^2$ value (416.9) was significant at 1 per cent level. The $\chi^2$ value tests for the significance on all variables. The following is the discussion on how the explanatory variables affect leverage.

**Tangibility** Strong and positive correlation between tangibility and the debt ratio emerges from the empirical analysis. The estimated coefficient is positive and significant at the 1 per cent level. The positive association between tangibility and the debt ratio is consistent with the trade-off theory, and the agency theory according to which leverage will be higher for firms with many tangible assets because it is more difficult to engage in risk shifting when tangible assets are already in place. In addition, firms with high quality collateral can access debt at lower costs because of the greater security for creditors. This is because the proportion of tangible assets can be used as a signal of firm “quality” by lenders to reduce non-payment of debt.

**Size** Consistent with the agency cost hypothesis that smaller firms are more likely to face severe agency problems in accessing debt finance, debt ratio is positively related to firm size (we use log (total assets/GDP deflator) as a proxy). The estimated coefficient is positive and significant at the 1 per cent level. These results also offer strong support for the trade-off theory. This is in line with the view that large firms are less risky and more diversified, and therefore the probability of distress and the expected costs of financial distress are lower. This also supports the view that the various costs (agency costs and expected financial distress costs) associated with the use of external funds may be mitigated by size and collateral. Thus, it is important to note here that the size factor may capture the finance distress effect (but inversely). If we take size to be a proxy for the inverse likelihood of financial distress, then this positive relationship imply that the costs of financial distress are low for these MNCs and that there may still be significant informational asymmetries between firm insiders and firm outsiders. These findings are consistent with Mutenheri and Green (2002). With regard to Zimbabwe, this result point to the fact that public debt markets are mostly accessible to large firms and that large firms use debt to better control management behaviour as described by Williamson (1988).

**Tax** The results indicate that there is a positive relationship between tax and the debt ratio. We also observe that tax has the greatest explanatory power than any other determinants of capital structure. For example, a unit increase in taxes increases the debt ratio by 40%. The estimated coefficient is significant at 5 per cent level. A positive link between tax and the debt ratio is consistent with Modigliani and Miller (1963) hypothesis that corporate
taxation has a positive effect on firm borrowing decisions.

**Profitability** Our results provide considerable support for the pecking order hypothesis according to which firms will prefer to raise capital from retained income, then from debt and finally from issuing new equity due to transaction costs, and the agency theory when the market for corporate control is inefficient. We find a significant negative relation between profitability and debt ratio at 1 per cent level. For example, there are claims that the negative correlation between profitability and leverage implies evidence for the pecking order hypothesis. Firms may be motivated by the desire to minimise the flow of information to outsiders.

**Pay-out ratio (POR)** Consistent with the agency theory that leverage and dividend pay-out are substitutes in reducing agency costs, we find a negative correlation between pay-out-ratio and debt ratio. The estimated coefficient is significant at 5 percent level. This result is, however, inconsistent with Adedeji (1998) who found a positive relationship between dividend payout and financial leverage.

**Non-debt tax shield** As expected, we find a negative relationship between debt and non-debt tax shields. The coefficient is significant at 5 per cent level. This result is consistent with the trade-off theory view that firms that have other tax shields, tax carryforwards (deferred tax), have less need to exploit the debt tax shield because by issuing excessive debt the firm may become “tax-exhausted”.

The results show that tax, tangibility and size have a significant positive relationship with debt ratio while the pay-out-ratio has a significant negative correlation with debt ratio. We also observe that non-debt-tax-shields and profitability have a negative relationship with debt ratio. The results are broadly consistent with theory. Liquidity and growth plays an insignificant role in the determination of MNC’s borrowing decisions. Apart from this, we observe that the capital structure decisions of MNCs listed on the Zimbabwe Stock Exchange are affected by the same variables/determinants as in developed countries.

**POLICY IMPLICATIONS AND RECOMMENDATIONS**

Much of the focus of this section is on the tax policy considerations implied by our findings bearing in mind its impact on financial development and economic development. We find a positive and significant (5 per cent level) relationship between tax and the debt ratio. This implies that as taxes increase, firms tend to use more debt. But there should obviously be an optimal debt level to avoid getting into bankruptcy, which draws us to the tax implications.

Financial transactions are easier to tax and provide an efficient source of tax revenue compared to any other source. As a result, most developing countries have opted to come up with an efficient, easy and fast way to implement and generate additional revenues by taxing financial transactions of market participants (companies). Based on chapter three, we observe that: firstly, taxation affects investment directly through its effect on the cost of capital (by increasing the pre-tax required rate of return) thus causing a tax bias against company investment. If investors choose to invest in companies, they will demand compensation for these increased costs in the form of higher rates of return on debt. Secondly, all taxes reduce the expected net present value (NPV) of a project and make investment less
tractive, thus negatively affecting economic growth on the aggregate.

Third, debt serves to increase the expected return to equity in the usual case where interest rates are less than the supply price of equity. A loan serves as a tax shelter for the firm because debt repayment is tax deductible, while dividends often are not. On the other hand, withholding taxes on declared dividends act as an additional tax on income leading investors to demand a higher return on the firm’s equity, and these taxes leads to double taxation (that is, earnings are taxed at corporate level and in the hands of investors).

Based on these views, we therefore recommend for a neutral corporate tax policy with respect to financing options because a system that favours debt at the expense of equity may have a negative effect on the allocation of resources. This should involve a tax relief on investment financed with retained earnings. The misallocation of resources comes about because a higher level of leverage increases the perceived uncertainty of the firm’s ability to pay its interest and equity obligations raising fears of financial distress, which is costly. On the other hand, firms that struggle to raise debt

CONCLUSION
The motivation behind this study has been three-pronged. Firstly, to synthesize the theory on multinational companies with the orthodox corporate finance theories of capital structure. Secondly, to analyse the explanatory power of some of the theories that have been proposed to explain variations in capital structures across firms. Thirdly, to empirically examine the major determinants of capital structure decisions of multinational corporations listed on the Zimbabwe Stock Exchange. In this chapter, we give an organic summary of our main findings and give a digression of the policy implications and proceed to suggest areas for further research.

In our review of the capital structure debate we find that the pecking order hypothesis (based on information asymmetries) predicts preference for internal over external finance such that profitable firms will resort to debt financing less often compared with unprofitable firms. In contrast, the static trade-off theory predicts profitability to enhance the use of debt financing because profitable firms have access to cheaper debt. The Irrelevance theory argues that the value of the firm is independent of its capital structure choice, assuming a perfect capital market. The agency theory, however, focuses on information asymmetry problem at both the firm and market level and thus defines agency costs as the sum of the monitoring expenditures by the principal, bonding costs by the agent, and a residual loss.

The literature on capital structure choice of multinational companies suggests that multinational corporations are subject to higher agency costs in comparison to domestic firms suggesting that MNCs’ leverage should be inversely related with agency costs of debt. On the other hand, MNCs are expected to rely more on internal than external financing and, therefore, have lower leverage if internal capital markets work efficiently.

This research provides new evidence on the determinants of multinational corporate capital structure choice, it being the first of its nature to be carried out in Zimbabwe. In this regard, all the statistically significant coefficients were consistent with our predicted hypothesis. Only the results from the Specific Model were discussed in the
wrap up of the empirical determinants of multinational corporate capital structure.

The results show that tax, tangibility and size have a significant positive relationship with debt ratio while the pay-out-ratio has a significant negative correlation with debt ratio. We also observe that non-debt-tax-shields and profitability have a negative relationship with debt ratio. The results are broadly consistent with theory. However, this should not dissuade further theoretical work. Apart from this, we observe that the capital structure decisions of MNCs listed on the Zimbabwe Stock Exchange are affected by the same variables/determinants as in developed countries.

REFERENCES


