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Full Length Research Paper

Impact of financial liberalisation on capital structure: Evidence from the Johannesburg Securities Exchange

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This study tested the impact of financial liberalisation on a panel of non financial firms listed on the Johannesburg Stock Exchange. Using fixed, random effects and instrumental variable models, it was found that the removal of international sanctions and stock market liberalisation have a significant negative impact on most measures firm leverage. Capital account liberalisation has a direct and significant impact on firm leverage and the impact of domestic financial sector liberalisation on capital structure is weak. Firms increase their debt maturity structure following stock market liberalisation. The effects of financial liberalisation are more pronounced on larger firms.

Key words: Financial liberalisation, removal of international sanctions, stock market liberalisation, capital account liberalisation, domestic financial sector liberalisation, capital structure.

BACKGROUND AND MOTIVATION

Financial liberalisation is a process that involves the removal of several impediments that bring the emerging market in line with the developed world. This leads to the development of financial markets thereby providing new financing opportunities within the economy. McKinnon (1973) argues that financial liberalisation provides an incentive for domestic investors to accumulate more equity capital, thus lowering the costs of borrowing. Shaw (1973: 9) further demonstrates, theoretically, that financial liberalisation in emerging markets "... increases rates of return by widening exploitable investment opportunities...". These propositions have sparked a renewed interest in the study of financial liberalisation and its effects on economic growth. Given this backdrop, firm financing behaviour should be viewed as a phenomenon that can be influenced by the process of financial liberalisation. Therefore, incorporating the notion of financial liberalisation into the dynamics of modern day capital structure provides a good framework for empirical work.

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There are a number of unresolved issues regarding the implications of financial liberalisation on the capital structure of South African firms. The first issue relates to the implications of the lifting of international sanctions on South Africa. By the end of 1992, most of the economic sanctions on South Africa were lifted. This removal of sanctions provided a more active trading environment for domestic firms, thus increasing the financing options for investment. It is at this stage not clear how the financing behaviour of firms unfolded due to these economic developments. What has been documented so far is that proxies for the cost of equity capital experienced a significant decline during this period (Makina and Negash, 2005a). This could have led firms to access more of equity finance relative to debt. However, the development of the banking sector could have mitigated this effect.

The second issue relates to the implications of stock market liberalisation. Consistent with Stapleton and Subrahmanyam (1977), Stulz (1990), Henry (2000a) and Bekaert and Harvey (2003), Makina and Negash (2005a) conclude that stock market liberalisation lowers the cost of equity capital. This result is evident for most of the firms in their sample. The plausible explanation for this finding is provided by Henry (2000a), who argues that the

liberalisation of the stock market provides a basis for risk sharing between domestic and foreign agents.

This finding has important implications for this study. Firstly, assuming that future cash flows are held constant, the lower cost of equity capital should increase equity prices. The observed change in the equity weighting should affect the listed firms' capital structure. Secondly, because of the reduction in the aggregate cost of equity capital, investment in projects should increase (Henry, 2000b). In particular, some of the projects with a negative net present value will be accepted because of the lower cost of capital. The expected increase in the investment could be financed by, *inter alia*, an issue of equity. This dynamic shift in financing should affect the capital structure of firms listed on the JSE. Finally, because of the lower cost of equity capital, it should be easier for firms to issue more equity capital (Bhaduri, 2000). These implications provide an opportunity to empirically test whether the capital structure of listed firms is affected by financial liberalisation.

The third implication is associated with domestic financial sector liberalisation. The series of reductions in the reserve requirements in the 1990s may have provided opportunities for banks to lend more finances to the domestic private sector. For example, in February 1991, the monetary authorities abolished the basic requirement of 2% of all medium term liabilities. At the same time, the requirement against short term liabilities was reduced from 5 to 4%. In April 1993, a further drop of 1% of short term liabilities was effected. The supplementary minimum cash reserve requirement of 1% of short term liabilities was eventually withdrawn in April 1998 (Nel, 2002). Holding all other things constant, these developments could have led to an increase in credit extension to the domestic private sector. It is not clear, however, whether the net lending effect could be significant, owing to the following two reasons: firstly, despite the lowering of reserve requirements, there are some dates in between the decreases when marginal increases were effected. Secondly, the resulting increase in lending by banks could have been mitigated by the significance of the development of the stock market.

The fourth issue that needs to be resolved relates to the effect of capital account liberalisation on capital structure. Starting from March 1995, several exchange control relaxations were effected. In March 1997, corporations were permitted to repatriate more funds for investment, and at the same time, domestic firms were permitted to borrow from abroad. Further controls were eased in March 1998, thus allowing corporations to repatriate more amounts of cash to other countries in the world. The limit on foreign investment was later increased in March 2001. These developments allowed corporations to participate more in foreign repatriations. However, the increased repatriations could have been financed by domestic equity, debt or even foreign debt. Consequently, the empirical association between capital account liberalisation and leverage is a matter that needs to be examined carefully.

Fifthly, there is some documented evidence that if markets are segmented, then firms operating in the same macro economic framework will respond differently to the process of financial liberalisation. For example, Schmukler and Vesperoni (2006) show that firms with access to international equity markets respond differently to stock market liberalisation compared to domestically financed firms. Furthermore, compared to large firms, smaller firms have been shown to respond differently to the process of financial reforms. For example, Harris et al. (1994) show that the market based allocation of credit increases borrowing costs for small firms. However, Gelos and Werner (2002) find a reduction in credit constraints for smaller firms. Bhaduri (2000) showed that larger firms are more responsive to the process of financial liberalisation than their smaller counterparts. There is therefore, a need to test whether these issues apply in the South African context.

Lastly, the debt maturity structure of the different categories of firms is an important policy issue that needs to be clarified. Specifically, one would like to see smaller firms and other firms accessing longer term finance following financial liberalisation. Schmukler and Vesperoni (2006) find an increase in the debt maturity structure for firms with access to international debt and equity markets. On the other hand, Galego and Loayza (2000) find that the size of the banking sector is directly related to debt maturity for Chilean firms. In this respect, it is not clear whether the significance of the banking sector is associated with a longer debt maturity for listed firms in South Africa.

To resolve these issues, panel data estimation techniques are utilised for a sample of 100 non financial firms listed on the Johannesburg Stock Exchange. The results show that the lifting of international sanctions and stock market liberalisation exert a negative influence on the book and market value of the debt ratios for all the firms. The effect is more pronounced for larger firms. Capital account liberalisation has a significant and direct impact on firms' leverage. Again, the impact is more pronounced for larger firms. The effect of domestic financial sector liberalisation is mildly supported. The size of the stock and the banking sector has a significant impact on firm financial choices. In particular, stock market development is positively related to leverage, and banking sector development is negatively related to leverage. Furthermore, stock market liberalisation causes firms to increase their debt maturity structures.

The rest of this paper is organised as follows: data and measurement issues were discussed. It also develops the econometric methods. It later discusses the basic results. The paper reports the regression outputs. The paper further discusses the results of the regression models and finally the study is concluded.

DATA AND MEASUREMENT ISSUES

Choice of firms and data treatment

The sample consists of JSE listed firms that operated prior to and after the financial liberalisation phase. Balance sheet and income statements are obtained from the I-Net Bridge and McGregor Bureau for Financial Analysis databases. Information on cross listed firms and ADR issuers is obtained from the JSE. The firms should have reported consecutively on their financial position on an annual basis for the period from 1989 to 1999. This period is examined because the reforms that are being examined were implemented during this period. Furthermore, the specified period is used to include, in the analysis, as many firms as possible. Financial firms and insurance companies are excluded from the sample because their reporting of leverage is different from the reporting of non financial firms. To minimise confounding effects, all companies with market to book values exceeding 20 are removed from the analysis. Some leverage ratios are extremely high, especially for the years prior to 1992. Following Falkender and Peterson (2006), ratios with a value greater than 1 are reset to 1. This exercise is carried out in order to prevent the means from being distorted by a few extremely high observations.

The leverage measurement problem

The use of the appropriate measure of leverage has been a contentious issue. On this note, Murinde and Suppakitjarak (2003) identify four key issues that have been the subject of debate; first, whether to use aggregate sector accounts or individual firm balance sheet data. Secondly, whether to use firm balance sheet data or flow of funds data. Thirdly, whether to use book or market values of leverage ratios and fourthly, if the flow of funds approach is used, the question is whether to use gross or net flows.

Corbett and Jenkinson (1996) argue that the flow of funds approach is more appropriate for international comparisons than balance sheet data, principally because flow of funds data address how financial markets have performed in funding investments. Because of this, Cobham and Subramaniam (1998) note that international comparisons have utilised the flow of funds approach thus making comparables more readily available.

Because this study focuses on a single country, the use of balance sheet data is adequate. Analysis of data at the firm level provides reliable insights which may not be captured at the aggregate level. Schmukler and Vesperoni (2001) contend that balance sheet data allow inter firm comparisons within the same macro economic framework. This micro analysis can help explain how individual firms' access to international bond and equity markets affect capital structure. Schmukler and Vesperoni (2006) further advise that if markets are segmented, financial liberalisation may open opportunities only for some firms. The changes in capital structure for firms with and without access to international markets may not be captured effectively by a market level analysis.

The broadest measure of leverage is the ratio of total liabilities to total assets. Rajan and Zingales (1995) caution that this ratio may overstate leverage, simply because the total liabilities includes accounts payables which may be used for transactions rather than financing purposes. However, the appropriate measures of leverage depend on the object of the study. In this study, several measures of leverage are studied, principally because the study explores the effect of financial liberalisation on capital structure in a broad sense. Following Bhaduri's (2000) argument that different measures of leverage may respond differently to the reform process, the behaviour of various combinations of leverage ratios should be examined. These include the debt to equity, total debt and short term debt ratios.

Book versus market value ratios

Having established the appropriate measures of leverage, it is important to draw a distinction between the use of book and market values as reliable measures of leverage. Corporate finance literature advocates the use of market values in determining the capital structure of firms. The question is whether market values provide an accurate measure of the firm's financial position as compared to book values. The determination of market value ratios may require several calculations which in some instances may be onerous. Bowman (1980) argues that many debt instruments are quoted at variable interest rates, subject to restrictions and conditions. One of the conditions is the requirement of compensating balances in a non interest bearing account. The possible solution would be to raise the effective interest rate above the stated rate. Such reinstatements can be onerous.

Another problem arises when the debt is convertible. The quoted price on the convertible debt may not be the market value of the debt. This is because the quoted price consists of the portion of the market price which is attributable to debt, and the portion attributed to equity. Weil et al. (1968) and West and Largay (1972) attempted to address this problem by isolating the market value of the debt from the quoted price. Bowman (1980) argues that this is not necessary because most convertible bonds have no ascertainable market value. Furthermore, if the market value could be determined, the difference would be marginal.

Prasad et al. (2001: 44) justify the use of book value measures because market values are subject to a number of "... factors orthogonal to the firm. Consequently,

any changes in the leverage ratio when using the market values may not reflect any underlying alteration within the firm ...". Where market values are obtained, Bowman (1980) demonstrates that these two measures are highly correlated; hence the misspecification of using the book values is probably insignificant. Marsh (1982), Boyle and Eckhold (1997) and Hovakimian et al. (2001) use both the book and market values of leverage ratios to model capital structure. Both methods yield similar results.

Having the preceding caveats in mind, this paper considers the effect of financial liberalisation on the book values of leverage ratios. However, *quasi* market value measures of leverage are used for comparison purposes. In this case, book value measures are scaled by market values of equity.

The dating of financial liberalisation

Bekeart and Harvey (2003) acknowledge that existing economic models are not adequate to capture the whole process of financial liberalisation. However, the dynamic nature of integration has been captured by other studies thereby rendering the focus on a single break date to be less reliable. Hence, this paper focuses on capturing some of the gradual aspects of financial liberalisation in South Africa. Because this study does not focus on the removal of restrictions on one part of the financial market, it is necessary to include several financial liberalisation dates.

To date, the individual firm's access to international markets dummy variables are used. These variables take on the value of one for firms that have participated in international equity issues and zero otherwise. Therefore, each firm that participated in international equity issues is considered in the regression model. To date the removal of international sanctions, a dummy that takes on the value of one is used for the period from 1995 going forward and zero otherwise. A similar approach is used to date the lifting of international sanctions and stock market liberalisation. A dummy variable takes on the value of one for the year 1993 and beyond and zero otherwise for the lifting of international sanctions, and the value of one for the years 1995 and beyond and zero otherwise, for stock market liberalisation.

In terms of capital account liberalisation, the years 1995, 1997 and 1998 are used to capture the impact of exchange control deregulation on firm capital structure. These dates represent the years when exchange controls were relaxed. Following Loots (2003), a progressive dummy is created which takes on the value of zero for the period before 1995. The variable increases by 0.5 for each subsequent exchange control relaxation.

Domestic financial sector liberalisation is captured through identifying post apartheid deregulation of reserve requirements. Despite the general trend towards decreasing reserve requirements, there are three notable dates associated with the decrease in reserve requirements. These are February 1991 when the basic requirement on short term liabilities was lowered from 5 to 4%. In April 1993, a subsequent decrease to 3% was effected and in April 1998 when the requirements were simplified to include a 2.5% rate on total liabilities (Nel, 2000).

Control and stock and banking sector development variables

The challenge in the econometric approach is to be reasonably sure that the process of financial liberalisation is isolated from other confounding events. Given this caveat, the study considers firm level controls as confounding firm specific effects that need to be isolated. Corporate finance literature has advocated for several firm specific characteristics that affect the choice of capital structure (Gupta, 1969; Marsh, 1982; Rajan and Zingales, 1995; Booth et al., 2001; Schmukler and Vesperoni, 2006; Eriotis et al., 2007).

Research on factors that are correlated with leverage identifies four main firm specific characteristics that may affect leverage. These are size, asset tangibility, profitability and growth prospects. Although there are several other factors that are correlated with leverage, Rajan and Zingales (1995) argue that these four factors have consistently showed up to be correlated with leverage. We therefore include these four variables in our regressions.

Since financial liberalisation leads to the increased financial market activity, it is plausible to include in the analysis variables that capture the level of financial market development. Hence, two ratios are used; the ratio of stock market capitalisation to GDP (SMC/GDP) and the ratio of domestic credit to the private sector to GDP (DC/GDP). SMC/GDP measures the ability of the stock market to allocate capital for investment projects. DC/GDP measures the resources channelled to the private sector by domestic commercial banks.

ECONOMETRIC APPROACH

Panel data analysis

The use of panel data is appropriate due to the ability to combine the cross sectional and time series nature of data and to analyse the dynamics of changes over a short period of time (Ozkhan, 2001; Ngugi, 2008; Gwatidzo and Ojah, 2009). This enhances the quality of the data being analysed.

Since panel data incorporates a cross section of firms over a period of time, there is bound to be heterogeneity in the observed firms. Panel data techniques can take such heterogeneity into account by incorporating individual specific variables. This powerful combination provides less collinearity between variables and more degrees of freedom.

Furthermore, Ozkhan (2001) advises that panel data techniques are more flexible in the choice of variables to control for endogeneity, a situation where unobservable factors affecting financing decisions may affect some of the firm specific characteristics such as the market value of equity. The other advantage that is

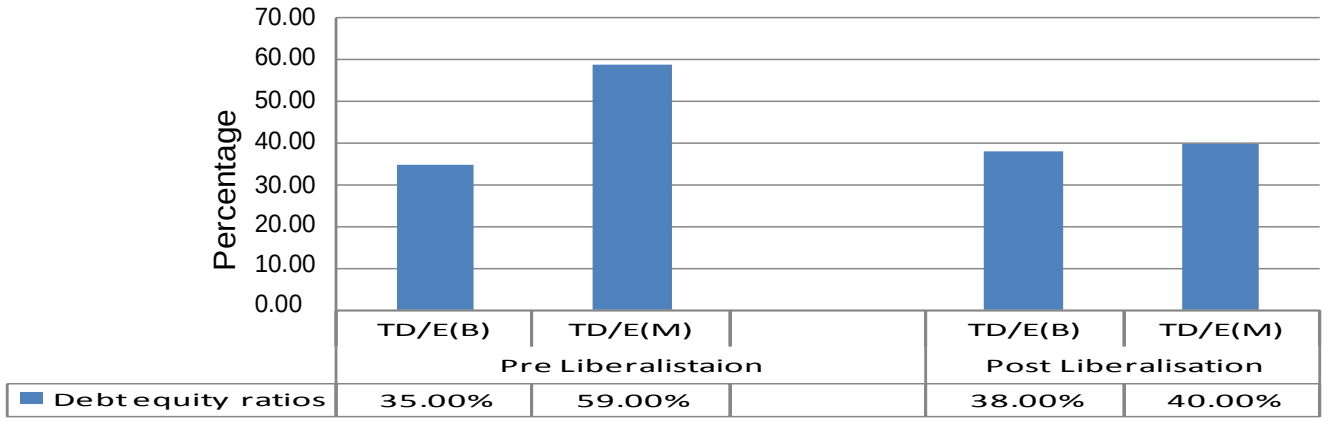

Figure 1. Book and market value debt ratios for all firms (pre and post liberalisation).

particularly suited to this study is that panel data analysis is well suited to detect the dynamics of change. The three widely used applications of panel data are the pooled ordinary least squares (Pooled OLS), fixed and the random effects models (Mutenheri and Green, 2003; Eriotis et al., 2007; Gwatidzo and Ojah, 2009). The pooled OLS model assumes that there is no observed hetero-geneity among the units of analysis. However, the fixed (within) and random effects control for firm specific effects. Hence this analysis is restricted to the later two estimation techniques.

Estimation technique

The classical regression model follows, *inter alia*, the assumption of homoscedasticity. If this assumption is dropped and replaced with the assumption of heteroscedasticity, then the proposed model estimation may yield spurious correlations. Regressing leverage on the various independent variables would imply the assumption that there is inter firm variability in leverage. The plausible approach is to estimate the model in such a way that observations with greater variability in leverage are given less weight than those coming with smaller variability in leverage. Thus the usual ordinary least squares (OLS) does not follow this convention as it assigns equal weight to each observation. The method of generalised least squares (GLS) takes this inter-firm variability into account. Therefore, to model the effects of financial liberalisation on capital structure, the GLS estimation technique with standard errors that are robust to heteroscedasticity is used. The following general specification is estimated for each dependent variable:

$$Lev_{i,t} = \alpha + \beta' X_{i,t} + \gamma DFF_{i,t} + \varphi(SMC/GDP)_t + \varphi(DC/GDP)_t + \theta RIS_t + \theta SML_t + \theta DFSL_t + \theta CAL_t + \mu_{i,t}$$

Where: $i = 1, \ldots, N$, and $t = 1, \ldots, T$.

$X_{i,t}$ is a vector of firm specific controls. These controls are size, profitability, asset tangibility and growth opportunities. *IFF* is a dummy that takes the value of one if the firm is internationally financed and zero otherwise. *DFF* is a dummy that takes the value of one if the firm is domestically financed and zero otherwise. *SMC/GDP* captures the effects of stock market development on leverage. *DC/GDP* captures the effects of the significance of the banking sector on leverage. R*IS, SML, DFSL* and *CAL* are time variant and firm invariant macroeconomic dummies capturing the lifting of international sanctions, stock market liberalisation, domestic financial sector liberalisation and capital account liberalisation respectively. $\mu_{i,t}$ is the disturbance term. The assumption is that $\mu_{i,t}$ is characterised by an independently distributed random variable with a mean value of zero and variance, $\sigma^2_{i,t}$.

BASIC RESULTS

Figure 1 reveals the impact of financial liberalisation on the book and market values of the debt to equity ratios for all the firms. It appears that financial liberalisation has a significant effect on the market value debt equity ratios. The average market value of the debt to equity ratio declines by 19%. Schmukler and Vesperoni (2006) report a similar reduction but for book value ratios for a sample of firms in emerging market economies. This observation suggests that the opening up of the JSE and further participation of local firms in the international equity markets increases the average market value of equity relative to debt. The increase in the average book value of the debt to equity ratio is only marginal. To show the effects of participation in international equity markets, the data set is divided into internationally and domestically financed firms. Figure 2 shows the difference in the debt to equity ratio for both sets of firms. Internationally financed firms have lower average book and market value debt to equity ratios compared to domestically financed firms. The average book value of the debt to equity ratio for domestically financed firms is 11% higher than that of the internationally financed firms. The market value ratio difference between the two sets of firms is even higher by 21%. This observation is indicative that domestically financed firms rely principally on domestic debt; hence, they have higher debt ratios. Similarly, internationally financed firms are expected to exhibit lower debt ratios due to their ability to access more equity through the process of cross listing and ADR issuing

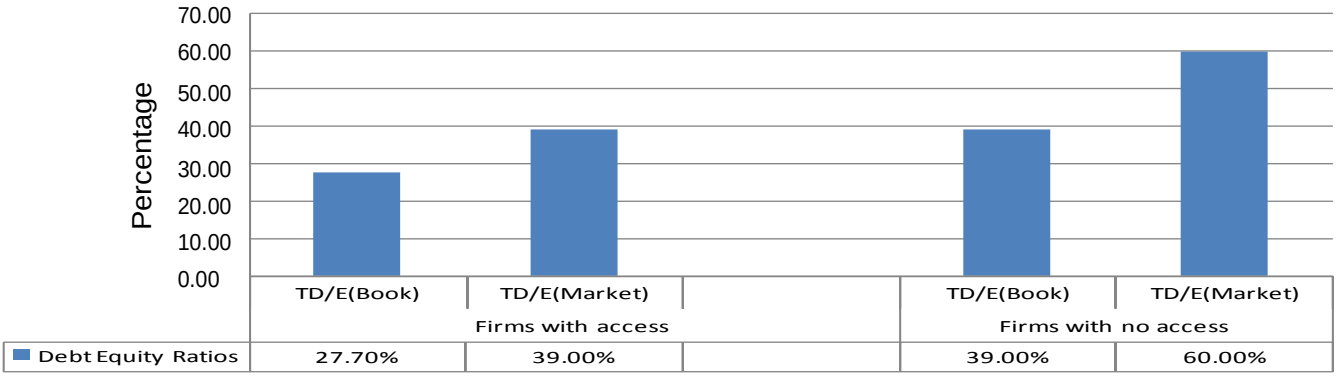

Figure 2. Debt to equity ratios for internationally and domestically financed firms.

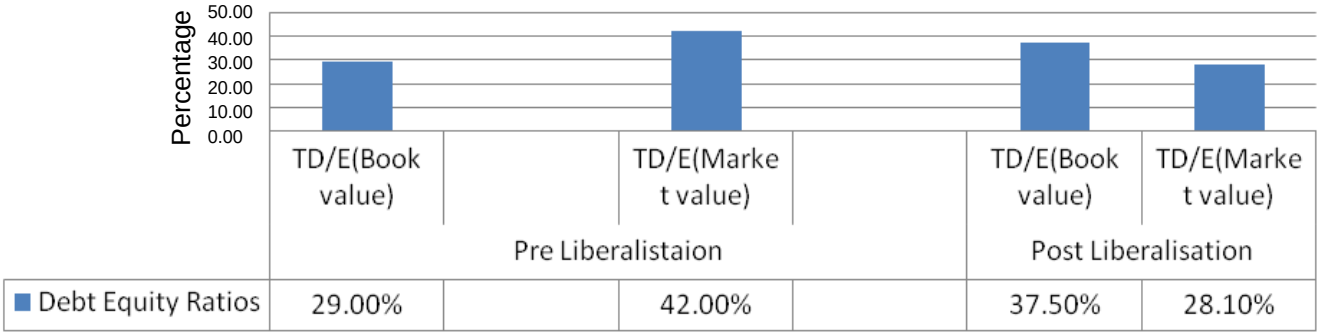

Figure 3. The effects of financial liberalisation on debt to equity ratios of internationally financed firms.

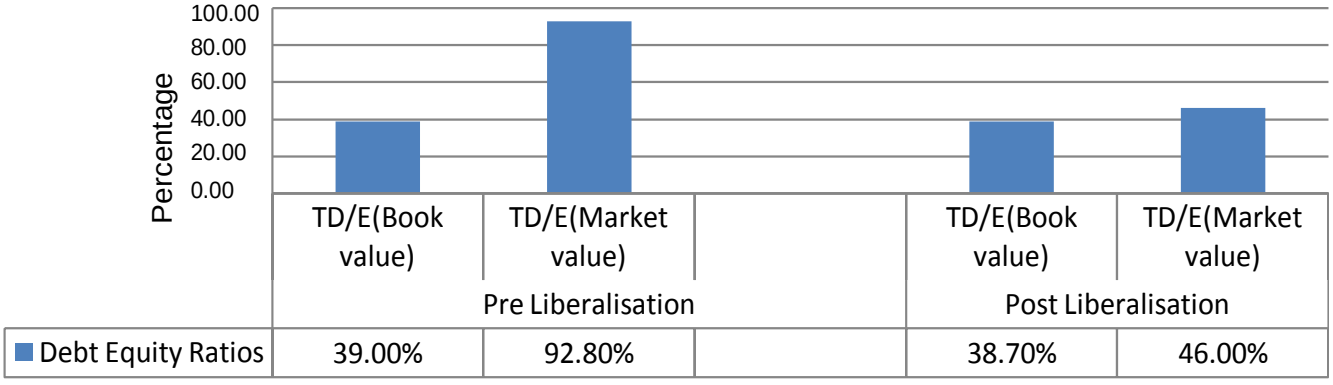

Figure 4. The effects of financial liberalisation on debt equity ratios for domestically financed firms.

activity.Figure 3 reports average debt to equity ratio for internationally financed firms. The average book value debt to equity ratio increases with financial liberalisation, whereas the average market value debt to equity ratio reduces with financial liberalisation.

An increase in the average book value ratio could suggest that firms are taking advantage of the lower cost of borrowing associated with financial liberalisation.

As a result, debt becomes more appealing relative to equity.

Figure 4 shows a decline in the average debt to equity ratio for domestically financed firms. Although the average book value ratio did not change, the average market value ratio declined substantially by 46.8%. This result confirms Makina and Negash's (2005) observation that the cost of equity capital lowers following financial liberalisation. Consequently, financially constrained firms experience a rise in the market value of their equity,

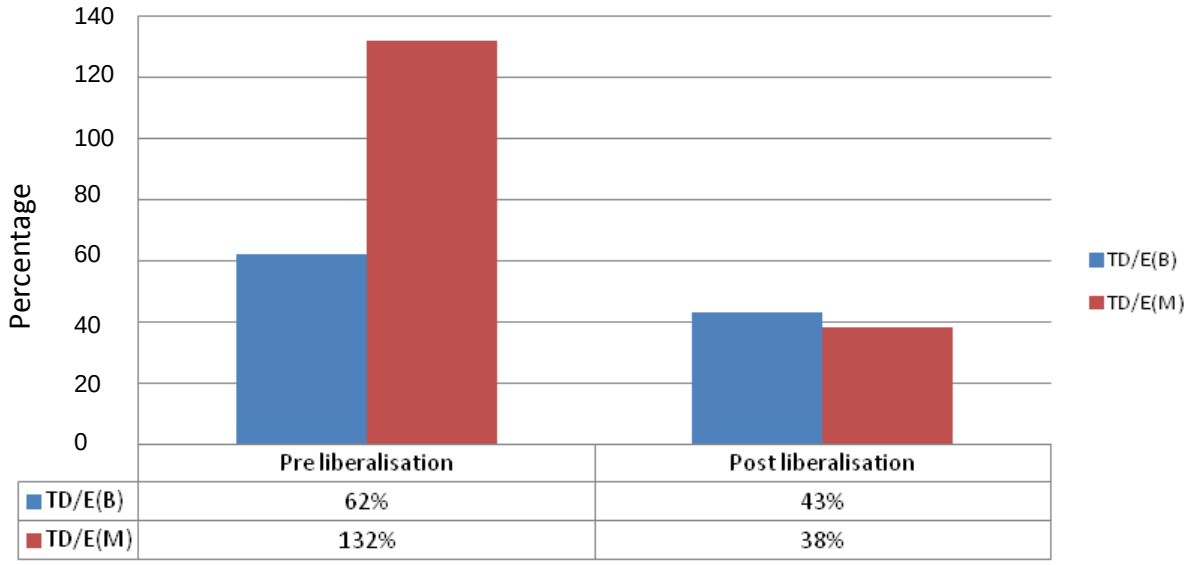

Figure 5. Average book and market value ratios for small firms.

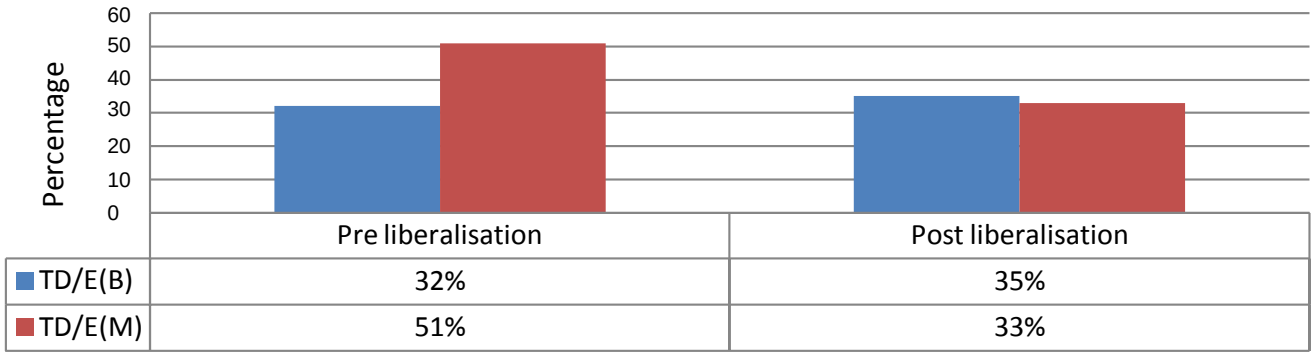

Figure 6. Average book and market value debt to equity ratios for large firms.

thereby experiencing a reduction in their average debt ratios. Figure 5 shows that both book and market values of the debt to equity ratio for small firms reduce following financial liberalisation. Figure 6 reveals a reduction of the average market value debt to equity ratio for large firms. The average book value of debt to equity ratio increases marginally. The descriptive statistics presented in this section suggest that financial liberalisation may be associated with the lower average market value debt to equity ratio for all firms and firms without access to international equity markets. Generally, the average book value of the debt to equity ratio increases marginally for all sets of firms. However, a marginal reduction is observed for domestically financed firms. This observation can be attributed to the lower borrowing costs associated with debt in a liberalised economy. The next step is to establish whether these effects are significant while controlling for other factors.

Regression outputs

Table 1 reports fixed effects and random effects regression outputs for the impact of financial liberalisation on the capital structure of all firms. TD/E (B) is calculated as the book value of total interest bearing debt divided by the book value of equity. TD/E (M) is calculated as total interest bearing debt divided by the market value of equity. The control variables are growth, tangibility, profitability and size. IEI is a dummy variable capturing individual firm access to international equity markets. RIS is a dummy variable capturing the lifting of international sanctions. SML is a dummy variable representing stock market liberalisation. CAL is a dummy variable capturing capital account liberalisation. DFSL is a dummy variable representing domestic financial sector liberalisation. SMCGDP and DCGDP are measures of stock and banking sector development respectively.

Table 1. Panel data regression results for all firms.

Explanatory variables	Fixed effects model		Random effects model	
	Td/e(book)	Td/e(market)	Td/e(book)	Td/e(market)
Growth	0.01464	-0.06177	0.012149	-0.02328***
Tangibility	0.527163**	0.454448	0.31646***	0.251919**
Profitability	-0.13973	5.51497*	-0.02038	0.090308***
Size	0.438301*	-1.81533	-0.18108	-0.31927
IEI	(omitted)	(omitted)	-0.01309	-0.01753
RIS	-0.20215***	0.610091**	-0.02812**	-0.06498***
SML	-0.20215	-1.10143**	-0.09819	-0.10241***
CAL	-0.09915*	1.118458*	-0.00735**	-0.16636**
DFSL	0.250977*	-1.45157	0.131676	0.197373
SMCGDP	0.205855***	-0.33555	0.100752***	0.053846
DCGDP	0.347038***	0.311675	0.168439**	0.117311
Constant	-0.19859	1.104962	-0.11543***	-0.0424***
F(11,99)	3.6	4.74		
Prob > F	0.000	0.0000		
R^2	0.0876	0.2549	0.094	0.2321
Wald $chi^2(11)$			41.4	119.97
$P>chi^2$			0.0000	0.0000
Hausman test				
$Chi^2(11)$	49.5	40.86	49.5	40.86
$Prob>chi^2$	0.0000	0.0000	0.000	0.0000
No. of observations	1029	1029	1029	1029

***, **,* indicate levels of significance at the 1, 5 and 10% levels of significance.

Table 2 reports fixed effects and random effects regression outputs for the impact of financial liberalisation on the capital structure of all firms. TD/TA (B) is calculated as the ratio of the book value of total interest bearing debt to total assets. TD/TA (M) is calculated as the ratio of the book value of total interest bearing debt divided by total assets minus the book value of equity plus the market value of equity. STD/TA is the ratio of the book value of short term interest bearing debt to the book value of total assets. Table 3 reports fixed effects and random effects regression outputs for the impact of financial liberalisation on the capital structure of small firms. Table 4 reports fixed effects and random effects regression outputs for the impact of financial liberalisation on the capital structure of small firms.

Table 5 reports fixed effects and random effects regression outputs for the impact of financial liberalisation on the capital structure of large firms. Table 6 reports fixed effects and random effects regression outputs for the impact of financial liberalisation on the capital structure of large firms.

DISCUSSION

Due to perfect collinearity, the dummy variable *IFF*, which represents firm participation in international equity markets, is dropped by the fixed (within) effects model. However, both the random effects and pooled OLS models report negative and insignificant coefficients for this variable. Furthermore, the *SML* dummy is interacted with both the *IFF* and *DFF* variables for all regressions, and the results are insignificant. It appears that firms with access to international equity markets and domestically financed firms are not significantly affected by stock market liberalisation. Hence, there is no need to include interaction dummies in the regression output. The Hausman (1978) specification test is used to test the suitability of the fixed over the random effects model.

Stock market liberalisation

The empirical relationship which has been tested is whether stock market liberalisation has a significant impact on firm leverage. Makina and Negash (2005a) find that stock market liberalisation is associated with a significant decline in the cost of equity capital for most of the South African listed firms. If this is the case, then leverage ratios are expected to decline due to the subsequent increase in equity prices. Given the observation in Figure 1, financial liberalisation, in general, is associated with a general decline in the average value of the market value of the debt to equity ratio. However this observation needs to be assessed further while controlling for other factors in the robust regressions.

Table 2. Panel data regression results for all firms.

Variable	Fixed effects model			Random effects model		
	Td/Ta(book)	Td/Ta(market)	Std/Ta	Td/Ta(book)	Td/Ta(market)	Std/Ta
Growth	0.003*	-0.0063**	0.001	0.0044**	-0.0075**	0.001
Tangibility	0.244***	0.248***	0.011	0.1960***	0.2067***	-0.017
Profitability	-0.2295**	-0.2012**	-0.1919*	-0.2229**	-0.1820**	-0.1834*
Size	0.0388	0.0154	-0.0021	0.0010	-0.0208	-0.0255**
IEI				-0.0079	-0.0261	0.0148
RIS	-0.0346**	-0.0467***	-0.0036	-0.0325**	-0.0489***	-0.0027
SML	-0.0258	-0.0631***	-0.0317**	-0.0214	-0.0608***	-0.0288*
CAL	0.0487**	0.0404	0.0389	0.0405	0.0325	0.0328
DFSL	0.0166	0.0084	-0.0350	0.0173	0.0189	-0.0340
SMCGDP	0.0617**	0.0325	0.0434**	0.0549*	0.0403	0.0390*
DCGDP	-0.035**	0.0038	-0.005	-0.027*	0.0057	0.0001
Constant	-0.0378	0.0502	0.125	0.1684	0.2576***	0.251***
F(11,99)	5.24	8.91	4.6			
Prob > F	0.0000	0.0000	0.000			
R^2	0.1021	0.2022	0.1108	0.1280	0.1957	0.2319
Wald $chi^2(11)$				42.65	79.56	33.88
P>chi2				0.0000	0.0000	0.0004
Hausman Test:						
$Chi^2(11)$	54.44	24.69	13.73	54.44	24.69	13.73
Prob>chi^2	0.0000	0.0101	0.248	0.0000	0.0101	0.248
No. Of observations	1029	1029	1029	1029	1029	1029

***, **,* indicate levels of significance at the 1%, 5% and 10% levels of significance.

Regression results for all the firms

Tables 1 and 2 report the regression results for the full sample of firms using the fixed (within) and random effects models. The impact of stock market liberalisation on leverage for the full sample reveals some important facts. Figure 1 showed that the average market debt to equity ratio declined from 59% in the pre liberalisation period to 40% in the post liberalisation period. This observation is confirmed by the regression results. The *SML* variable is inversely correlated with the debt to equity ratios. The relationship is significant at the 5% level for the market value debt to equity ratio. This observation confirms the notion that market values are more sensitive to book value measures of leverage.

Similarly, the SML variable is negatively associated with the market value of the total debt ratio. This correlation is significant at the 1% level. These findings corroborate favourably with Galego and Loayza (2000), Bhaduri (2000), Schmukler and Vesperoni (2006) and Flavin and O'Connor (2010) that stock market liberalisation is associated with a significant reduction in leverage for firms in emerging markets.

Regression results for small firms

Figure 5 suggests that the average book and market value ratios for small firms reduce following financial liberalisation. Further analysis as reported in Tables 3 and 4 confirm this reduction but it is statistically insignificant. The random effects model documents that stock market liberalisation is associated with a reduction in all measures of leverage, but the relationship is insignificant. Overall, there is a consistent negative correlation between stock market liberalisation and small firm leverage, but the significance of this impact is mildly supported.

Regression results for large firms

Figure 6 shows that the average market value of the debt to equity ratio declines by 18% over the period of financial reforms. This observation has been confirmed by the regression analysis. Furthermore, Tables 5 and 6 show that large firms are more responsive to the process of financial liberalisation than small firms. The coefficients for the market values of leverage are statistically significant at the 1% level. The coefficient for the book value of the total debt ratio is negative and significant at the 5% level. However, the correlation for the book value of the debt to equity ratio is negative and insignificant.

These results compare favourably with the findings from studies of the impact of financial liberalisation on corporate capital structures in emerging markets. One

Table 3. Panel data regression results for small firms.

Variable	Fixed effects model		Random effects model	
	Td/e(book)	Td/e(market)	Td/e(book)	Td/e(market)
Growth	0.033987	-0.07556	0.037045	-0.07849
Tangibility	0.434063	0.10683	0.316305	0.403763
Profitability	-0.73802	-0.37329	-0.72396	-0.31073
Size	0.433828	0.23433	0.223923	-0.28579
IEI	(omitted)	(omitted)	0.387232	0.290314
RIS	-0.30986**	1.168157	-0.29607**	1.162152
SML	-0.23808	-1.66766	-0.20874	-1.5648
CAL	0.241043	1.296722	0.196812	1.106659
DFSL	0.178543	-2.66196	0.17464	-2.6193
SMCGDP	0.477031**	-0.96705	0.437845**	-1.10077
DCGDP	-0.23642**	0.775519	-0.18646*	0.916073
Constant	-1.28233	-0.25961	-0.35097	2.154151
F(11,48)	3.25	2.72		
Prob > F	0.0012	0.0083		
R^2	0.0840	0.084	0.0778	0.1996
Wald chi2(11)			19.11	100.99
P>chi^2			0.0591	0.0000
Hausman Test:				
chi^2(11)	12.02	1.04	12.02	1.04
Prob>chi^2	0.3620	0.9999	0.3620	0.9999
No. of observations	539	539	539	539

***, **,* indicate levels of significance at the 1, 5 and 10% levels of significance.

notable study by Demirguc-Kunt and Maksimovic (1996) finds a significant decrease in leverage ratios for large firms in developing countries. Bhaduri (2000) finds that financial liberalisation reduces the marginal propensity to debt, and the effect is more pronounced for larger firms. This evidence seems to imply that the opening up of the stock market causes foreign investors to prefer larger firms over their smaller counterparts.

Removal of international sanctions

Regression results for all the firms

The *RIS* variable which represents the impact of the removal of international sanctions is associated with a significant reduction in the book value of the debt to equity ratio for all the firms in the analysis. As shown inTable 1, an increase of 1% in the *RIS* variable is associated with a 20.2% reduction in the book value of the debt to equity ratio. The relationship for the market value of the debt to equity ratio is insignificant. Table 2 reports a significant negative association between the RIS variable and the book value of the total debt ratio. The coefficient is statistically significant at the 5% level for the book value of the debt to equity ratio. The same negative association is revealed for the market value of the total debt ratio, and the associated coefficient is significant at the 1% level.

This result implies that the removal of international sanctions is associated with a reduction in leverage for the full sample. This inverse correlation is expected due to the detection of a structural break in the cost of equity variable at the end of 1992 by Makina and Negash (2005b). The removal of international sanctions could have reduced the risk associated with the sanctions, and hence lowered the required rate of return on equities. The reduction in leverage at this point indicates that besides direct legal barriers, economic and political impediments are significant constraints to firm access to equity.

Regression results for small firms

The lifting of international sanctions has a statistically significant negative impact on small firms' leverage. As seen in Tables 3 and 4, the coefficient of the *RIS* variable is significant at the 5% level for the book value of the debt to equity ratio and both measures of the total debt ratio. The picture that is emerging out of this finding is that economic and political factors (particularly, the lifting of international sanctions) seem to have a stronger impact on leverage for small firms than direct legal barriers (particularly, the opening up of the stock market).

Table 4. Panel data regression results for small firms.

Variable	Fixed effects model		Random effects model	
	Td/Ta(book)	Td/Ta(market)	Td/Ta(book)	Td/Ta(market)
Growth	0.002808	-0.00743*	0.003278	-0.00746*
Tangibility	0.263763***	0.307206***	0.239002***	0.224448***
Profitability	-0.09276	-0.08524	-0.07658	-0.08042
Size	0.079165*	0.003116	0.042042	-0.01933
IEI	(omitted)	(omitted)	0.144354*	0.187191**
RIS	-0.0453**	-0.07426**	-0.04259**	-0.06866**
SML	0.000389	-0.01741	0.006117	-0.01674
CAL	-0.03566	-0.08492	-0.04482	-0.08184
DFSL	0.009805	0.022224	0.01	0.016897
SMCGDP	0.001419	0.008526	-0.00759	0.008274
DCGDP	-0.01331	0.02761	-0.00408	0.031219
Constant	-0.20101	0.111973	-0.0395	0.209091
F(11,48)	5.42	4.60		
Prob > F	0.0000	0.0001		
R^2	0.1899	0.149	0.1838	0.1406
Wald $chi^2(11)$			51.39	48.76
P>chi^2			0.0000	0.0000
Hausman Test:				
$Chi^2(11)$	38.48	28.29	38.48	28.29
Prob>chi^2	0.0001	0.0029	0.0001	0.0029
No. of observations	539	539	539	539

***, **,* indicate levels of significance at the 1, 5 and 10% levels of significance.

Table 5. Panel data regression results for large firms.

Variable	Fixed effects model		Random effects model	
	Td/e(book)	Td/e(market)	Td/e(book)	Td/e(market)
Growth	-0.01282	-0.01607	-0.01165	-0.02426
Tangibility	0.508597*	0.095511	0.360823*	-0.22785
Profitability	1.412357***	-3.1075***	1.302839**	-3.01285***
Size	0.210367***	-0.23251	0.146251**	-0.11084
IEI	(omitted)	(omitted)	-0.13255	-0.01368
RIS	-0.15872***	0.114562	-0.15827***	0.120288
SML	-0.01343	-0.55543***	-0.00414	-0.55625***
CAL	0.158736	1.02522***	0.150755	1.021253***
DFSL	0.234635*	-0.2523	0.238432*	-0.24554
SMCGDP	0.356991***	0.093612	0.347219***	0.098856
DCGDP	-0.16191**	-0.16962**	-0.15475**	-0.18894**
Constant	-1.2353**	2.745832*	-0.73532*	2.120165**
F(11,48)	3.67	11.56		
Prob > F	0.008	0.0000		
R^2	0.2648	0.2013	0.2622	0.1996
Wald $chi^2(11)$			36.83	100.99
P>chi2			0.0002	0.0000
Hausman Test:				
$Chi^2(11)$	99.98	4.61	99.98	4.61
Prob>chi^2	0.0000	0.9488	0.0000	0.9488
No. of observations	539	539	539	539

***, **,* indicate levels of significance at the 1%, 5% and 10% levels of significance.

Table 6. Panel data regression results for large firms.

Variable	Fixed effects model			Random effects model		
	Td/Ta (book)	Td/Ta (market)	Std/Ta	Td/Ta(book)	Td/Ta (market)	Std/Ta
Growth	0.006973***	-0.00179	0.00346	0.007601***	-0.00383	0.004101
Tangibility	0.125984	0.124632	-0.1222	0.099602	0.108937	-0.07856*
Profitability	-0.36259***	-0.3131***	-0.3164***	-0.36618***	-0.31458***	-0.3065***
Size	0.003189	0.039495	-0.04375	0.009908	0.024533	-0.03346
IEI	(omitted)	(omitted)	(omitted)	0.004325	-0.0387	0.024792
RIS	-0.02766*	-0.01498	0.012684	-0.0261*	-0.01618	0.013079
SML	-0.047**	-0.10667***	-0.04053**	-0.04657**	-0.10305***	-0.04225**
CAL	0.119013***	0.171853***	0.066033	0.120283***	0.165267***	0.069618*
DFSL	0.036441	0.003635	-0.03188	0.035736	0.005916	-0.03397
SMCGDP	0.100071***	0.031984	0.047792*	0.097774***	0.030931	0.048285*
DCGDP	-0.05336***	-0.02099	-0.00794	-0.05482***	-0.01921	-0.00946
Constant	0.206016	-0.05812	0.43174**	0.167903	0.047738	0.34072**
F(11,48)	65.48	13.19	7.37			
Prob > F	0.0000	0.0000	0.000			
R^2	0.2370	0.1081	0.189	0.2355	0.1495	0.1861
Wald $chi^2(11)$				726.78	151.9	64.03
$P>chi^2$				0.0000	0.0000	0.0000
Hausman Test:						
$Chi^2(11)$	6.64	5.67	6.52	6.64	5.67	6.52
$Prob>chi^2$	0.8274	0.8944	95.83	0.8274	0.8944	95.83
No. of observations	539	539	539	539	539	539

***, **,* indicate levels of significance at the 1, 5 and 10% levels of significance.

Regression results for large firms

The correlations reported in Tables 5 and 6 show mild support for the impact of the removal of international sanctions on large firm financial structure. The only strong correlation reported is for the book value debt to equity ratio. The associated p value is statistically significant at the 1% percent level. The book value total debt ratio is negatively correlated to the *RIS* variable at the 10% level of significance. All market value measures of leverage are insignificant. This observation leads to two conclusions. Firstly, large firms do not respond to the lifting of economic sanctions as much as small firms do. Secondly, large firms are less affected by economic sanctions than they are to direct legal barriers, particularly with stock market liberalisation.

Capital account liberalisation

Regression results for all firms

The results shown in Tables 1 and 2 indicate that there is a direct relationship between exchange control relaxations and leverage for the full sample set. The variable of importance here is *CAL* which captures the effect of exchange control relaxations on firm leverage. The results show that exchange control relaxations are associated with an increase in most measures of leverage for the full sample. The relationship is significant at the 10% level for the market value of the debt to equity ratio. In terms of the total debt ratios, only the book value of total debt ratio is statistically significantly correlated to the exchange control relaxations. The coefficient is statistically significant at the 5% level.

This outcome may suggest that as exchange controls are relaxed, domestic firms respond by repatriating more investment funds abroad. These funds could be sourced from the domestic financial institutions. Given the fact that debt is cheaper than equity, firms will issue debt to finance foreign investment. Hence an increase in leverage is observed for the full sample. Schmukler and Vesperoni (2006) document a positive but insignificant association between capital account liberalisation and leverage for a sample of firms in emerging marketeconomies.

Regression results for small firms

Tables 3 and 4 show that exchange control relaxations are associated with an increase in leverage for small firms but this relationship is statistically insignificant. The *CAL* variable is positive and statistically insignificant for

all the measures of leverage. The insignificant correlations are an indication that small firms do not take advantage of exchange control relaxations as much as large firms. Perhaps, small firms lack the credibility to negotiate for domestic and foreign funding on favourable terms compared to larger firms.

Regression results for large firms

The effect of exchange control relaxations on leverage is more pronounced for large firms. According to Tables 5 and 6, the *CAL* variable is strongly significant for most measures of leverage with the exception of the book value of debt to equity ratio. The high levels of significance reported suggest that larger firms benefit most from exchange control relaxations compared to their smaller counterparts. This finding is plausible because larger firms have the capacity to borrow more funds compared to smaller firms (Eriotis et al. 2007). Therefore, as firms are permitted to repatriate more funds, larger firms take advantage of their credit worthiness to borrow from the domestic banking sector and even from abroad.

Domestic financial sector liberalisation

Regression results for all firms

Domestic financial sector liberalisation is captured by the lowering of reserve requirements that were effected in the early 1990s. Examination of correlations reported in Tables 1 and 2 reveals that the lowering of reserve requirements has no significant impact on leverage of all the firms. The only exception is the book value of the debt to equity ratio. A positive and significant relationship is observed at the 10% level of significance. From this, it appears that there is mild support for the impact of the lowering of reserve requirements on firm leverage.

Regression results for small firms

Tables 3 and 4 show that domestic financial sector liberalisation is associated with an increase in leverage for small firms with the exception of the market value of the debt to equity ratio. However, all correlations for the small firm sample are statistically insignificant. The lack of significance in these correlations shows that small firms are not significantly affected by the lowering of reserve requirements.

Regression results for large firms

The results reported for large firms are similar to those reported for the firms in the full sample. An examination of the correlations reported in Tables 5 and 6 reveals that the lowering of reserve requirements has no significant impact on leverage for large firms with the exception of the book value of debt to equity ratio. A positive and significant relationship is observed at the 10% level of significance.

Debt maturity structure

Table 6 shows that stock market liberalisation is associated with a significant reduction in the short term debt ratio. The coefficient is significant at the 10% level. For large firms, similar results are observed. Table 6 reports that stock market liberalisation is associated with a reduction in the short term debt ratio. The coefficient is statistically significant at the 5% level. This finding suggests that the debt maturity structure of the average firm and large firms increases following stock market liberalisation. The results of the debt maturity structure for small firms all yield insignificant correlations. It appears that smaller firms fail to increase their debt maturity structure following financial liberalisation.

Stock and banking sector development

The general finding from all sets of regressions is that there is a strong and positive correlation between stock market development and leverage and a strong and negative association between the size of the banking sector and firm leverage. The plausible explanation for the first observation is that stock market development promotes good corporate governance and transparency rules thereby improving the credibility of listed firms. This improved outlook provides creditors with the incentive to lend more money to listed firms (Dermiguc-Kunt and Maksimovic, 1996).

The second observation is surprising. However, the negative correlation could be associated with the signalling theory of capital structure. The growth in credit extensions to the private sector shows that firms are capable of taking on more debt. As the signalling theory goes, the market value of equity increases with an issue of debt. Overall, these observations are consistent with the arguments postulated by Demirguc-Kunt and Maksimovic (1998) that differences in capital structures can be attributed to the development of stock markets and banks.

Robustness checks

The results estimated by the static model could be biased due to the possibility of endogeneity in the explanatory variables. Endogeneity occurs when the explanatory variables are correlated with the error term. This

Table 7. Instrumental variable estimates.

Variable	Coefficients				
	TD/E(Book)	TD/E(market)	TD/TA(book)	TD/TA(market)	STD/TA(book)
Growth	0.0059	-0.0874***	0.0018	-0.0270***	0.0008
Tangibility	0.3164***	0.1643**	0.1995***	0.1519***	-0.0203
Profitability	-0.6078***	-0.6388***	-0.2370***	-0.2125***	-0.0886**
Size	-0.0282	-0.0346	-0.0053	-0.0121	-0.0303***
IFF	0.0128	0.0026	-0.0014	-0.0132	0.0218
RIS	-0.0543	-0.0385	-0.0237	-0.0297	0.0074
SML	-0.0612	-0.1290***	-0.0276	-0.0504**	-0.0373**
CAL	0.2139**	0.2969***	0.0785**	0.0720	0.0655**
DFSL	0.0061	-0.0030	0.0060	-0.0087	-0.0494**
SMCGDP	0.2009***	0.1558**	0.0613**	0.0614*	0.0372
DCGDP	-1.4203	-1.2686***	-0.4682***	-0.2200	-0.0703
Constant	0.7249***	0.9339***	0.2431***	0.3044***	0.2995***
R^2	0.10	0.25	0.13	0.16	0.14
Wald $chi^2(11)$	57.04	43.86	18.06	142.76	43.23
Prob > chi^2	0.0000	0.0000	0.0000	0.0000	0.0000
No. of observations	912	912	912	912	912

***,**,* indicate the levels of significance at the 1, 5 and 10% levels respectively.

correlation may occur when there is reverse causation in the regression equation, some omitted variables or some measurement error. Ozkhan (2001) demonstrates that shocks affecting firm financing behaviour may also likely affect the market value of equity. The resulting change in the market value of equity could affect some regressors such as the market to book value of equity. Schmukler and Vesperoni (2006) advise that regressors with cross-firm variation may also cause endogeneity, due to the likely exogeneity of the macro variables in firm level estimates.

To resolve this potential problem, the instrumental variable technique is used to control for endogeneity biases in the reported results. Lagged explanatory variables are used for control and continuous variables. The object here is to use variables that are uncorrelated with their contemporaneous error terms and at the same time, correlated with their contemporaneous values. An examination of the instrumental variable regression results reported in Table 7 show that the causal relationships in the analysis are not affected by the endogeneity problem. Furthermore, Bekaert et al. (2005), Mitton (2006), Schmukler and Vesperoni (2006) and Flavin and Oconnor (2010) controlled for potential endogeneity in their analyses. They all conclude that controlling for endogeneity does not affect the causal relationships in their estimations.

Table 7 reports instrumental variable results for the impact of financial liberalisation on capital structure. The instruments used are lagged values of the explanatory variables. Standard errors are robust to heteroscedasticity.

Conclusions

This study has examined the unresolved issues relating to the interaction between financial liberalisation and capital structure for listed non financial firms in South Africa. The results show that the lifting of international sanctions and the opening of the JSE to foreign investment lowers the book and market value of the debt ratio for all firms. The effect is more pronounced for larger firms. This observation is consistent with the Myers and Majluf (1984) assertion that information asymmetries are lower for larger firms; hence, it is not surprising that large firms respond more to stock market liberalisation.

Exchange control relaxations have a significant and direct impact on firms' leverage. Again, the impact is more pronounced for larger firms. Because of reputational capital, large firms are more capable of obtaining domestic and foreign debt at lower cost. As firms are permitted to repatriate funds and to borrow funds from abroad, large firms will benefit more since they have the capacity to negotiate debt on favourable terms. The size of the stock and the banking sector has a significant impact on firm financial choices. Stock market development is positively related to leverage and banking sector development is negatively related to leverage. This result is a direct confirmation of Demirguc-Kunt and Maksimovic's (1998) assertion that the differences in firm capital structures are attributed to the development of the stock market and the banking sector.

Stock market liberalisation causes firms to access more long term finance. This finding suggests that the improved corporate governance and transparency laws

associated with the development of the capital markets provides more credibility for firms to borrow on a longer term basis. Furthermore, it is noted that the globalisation process causes a wedge between large and small firms. It is quite clear that small firms do not benefit from financial liberalisation as much as the large firms. This disparity is indicative that, as the economy is liberalised, investors prefer larger and more stable firms.

The observation that the size of the banking sector is statistically significantly negatively correlated to leverage warrants further attention. Further analysis should be performed to assess the underlying impetus behind the negative correlation. At the moment, it can only be assumed that as the banking sector develops, so does the stock market. Given the significance of the stock market, it is possible that the evolution of private credit could have been mitigated by the size of the stock market. Furthermore, the signalling theory suggests that as firms take on more debt, the markets view this as a credible signal that firm managers are confident about their future cash flows. This has the effect of increasing the market value of equity relative to debt. These conjectures could provide insight into future investigations regarding this caveat.

REFERENCES

Bekaert G, Harvey CR (2003). Emerging markets finance. J. Empir. Finan., 10(1-2): 3-55.

Bekaert G, Harvey CR, Lundblad C (2005). Does financial liberalisation spur growth? J. Financ. Econ., 77(1): 3-55

Booth L, Aivazian V, Demirguc-kunt A, Maksomovic V (2001). Capital structures in developing countries. J. Finan., 56(1): 412-430.

Bhaduri SN (2000). Liberalisation and firm's choice of financial structure in an emerging economy: the Indian corporate sector. Dev. Pol. Rev., 18(4): 413-434.

Boyle W, Eckhold KR (1997). Capital structure choice and financial market liberalisation: evidence from New Zealand. Appl. Finan. Econ., 7(4): 427-437.

Bowman RG (1980). The importance of a market-value measurement of debt in assessing leverage. J. Acc. Res., 18(1): 242-254.

Corbett J, Jenkinson T (1996). The financing of industry, 1970-89: an international comparison. J. Jpn. Int. Econ., 10(1): 71-96.

Cobham D, Subramaniam R (1998). Corporate finance in developing countries: new evidence for India. World Dev., 26(6): 1023-1047.

Demirguc-Kunt A, Maksimovic V (1996). Stock market development and firm financing choices. World Bank Econ. Rev., 10(2): 341-369.

Demirguc-Kunt A, Maksomovic V (1998). Law, finance and firm growth. J. Financ., 53(6): 2107-2137.

Eriotis N, Vasiliou D, Ventoura-Neokosmidi Z (2007). How firm characteristics affect capital structure: an empirical study. Manage. Finan., 33(5): 321-331.

Falkender M, Petersen MA (2006). Does the source of capital affect capital structure? Rev. Financ. Stud., 19(1): 45-79.

Flavin T, O'Connor T (2010). The sequencing of stock market liberalisation dates and corporate financing decisions. Emerg. Mark. Rev., 11(3): 183-204.

Gupta MC (1969). The effect of size, growth, and industry on the financial structure of manufacturing companies. J. Financ., 24(3): 517-529.

Galego F, Loayza N (2000). Financial structure in Chile: macroeconomic developments and microeconomic effects, Central Bank of Chile Working Paper, No. 75.

Gelos RG, Werner AM (2002) Financial liberalisation, credit constraints, and collateral: investment in the Mexican manufacturing sector. J. Dev. Econ. 67(1): 1-27.

Green CJ, Murinde V, Suppakitjarak J (2003). Corporate financial structures in India. S. Asia. Econ. J. 4(2): 245-273.

Gwatidzo T, Ojah K (2009). Corporate capital structure determinants: evidence from five African countries. Afr. Finan. J., 11(1): 1-23.

Harris JR, Schiantarelli F, Siregar MG (1994). The effect of financial liberalisation on the capital structure and investment decisions of Indonesian manufacturing establishments. World Bank Econ. Rev., 8(1): 17-47.

Hausman JA (1978). Specification tests in econometrics. Econometrica, 46(6):1251-1272.

Henry PB (2000a). Stock market liberalisation, economic reform, and emerging market equity prices. J. Financ., 55(2): 529-564.

Henry PB (2000b). Do stock market liberalisations cause investment booms? J. Financ. Econ., 58(1-2): 301-334.

Hovakimiam A, Opler T, Titman S (2001). The debt-equity choice. J. Financ. Quant. Anal., 36(1): 1-24.

Loots E (2003). Globalisation and economic growth in South Africa: do we benefit from trade and financial liberalisation? South Afr. J. Econ. Manage. S., 6(2): 218-242.

Makina D, Negash M (2005a). Stock market liberalisation and the cost of capital: evidence from Johannesburg stock exchange (JSE) listed firms. J. Account. Finan. Res., 13(4): 145-167.

Makina D, Negash M (2005b). Structural changes and dating of stock market liberalisation: evidence from the JSE Securities Exchange South Africa. Stud. Econ. Econom., 29(2): 61-76.

Marsh P (1982). The choice between equity and debt: an empirical study. J. Financ., 37(1): 121-144.

McKinnon RI (1973). Money and capital in economic development. Brookings Institution, Washington, DC.

Mitton T (2006). Stock market liberalisation and operating performance at the firm level. J. Financ. Econ., 81(1): 625-647.

Mutenheri E, Green CJ (2003). Financial reform and financing decisions of listed companies in Zimbabwe. J. Afr. Bus., 4(2): 155-170.

Nel HF (2000). Minimum reserve requirements, Pretoria: South African Reserve Bank.

Ngugi R (2008). Capital financing behaviour: evidence from firms listed on the Nairobi stock exchange. Eur. J. Finan., 14(7): 609-624.

Ozkhan A (2001). Determinants of capital structure and adjustment to long run target: evidence from UK company panel data. J. Bus. Financ. Account., 28(1): 175-198.

Rajan RG, Zingales L (1995). What do we know about capital structure? Some evidence from international data. J. Financ., 50(5): 1421-1460.

Shaw ES (1973). Financial deepening in economic development. Oxford University Press, New York.

Schmukler S, Vesperoni E (2001). Globalisation and firms' financing choices: evidence from emerging economies. World Bank Working Paper, No. 2323.

Schmukler S, Vesperoni E (2006). Financial globalisation and debt maturity in emerging economies. J. Dev. Econ., 79(1): 183-207.

Stapleton R, Subrahmanyam M (1977). Market imperfections, capital market equilibrium, and corporate finance. J. Finan., 32(2): 307-319.

Stulz R (1990). Managerial discretion and optimal financing policies. J. Financ., Econ. 26(1): 3-27.

Weil Jr RL, Segall JE, Green Jr. D (1968). Premiums on convertible bonds. J. Financ., 23(3): 445-464.

West RR, Largay III JA (1972). Premiums on convertible bonds. J. Financ., 27(5): 1156-1162.