

# Financial conservatism, firm value and international business risk: Evidence from emerging economies around the global financial crisis\*

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June 19, 2020

## Abstract

The increase in debt-free or under-levered firms (financial conservatism) is one of the most recent stylised puzzles that cannot be explained within the context of extant capital structure theories. In this paper, we exploit the 2008–09 contractions in credit supply in a *quasi-natural experiment* to examine whether financial conservatism affects firm value. Using a large sample of firms from seven African countries over the period 2003–2012, we find strong evidence that financial conservatism mitigates the adverse effect of contractions in credit supply on firm value for both local and international firms. Our results suggest that financial conservatism is an effective strategy for managing risks arising from contractions in credit supply and international business exposure. These findings provide novel empirical evidence on the value relevance of financial conservatism which shields firms from the adverse and far-reaching effects of contractions in credit supply.

**Keywords:** Financial conservatism, global financial crisis, firm value, international business risk, cross-listing, legal origin.

**JEL classification:** G20, G30, G32

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\*We wish to thank an anonymous referee and The Editor for several insightful and constructive comments that help improve our paper. We also acknowledge the helpful input of Boulis Ibrahim, Nadeem Aftab, Thaana Ghalia and seminar participants at the Research Discussion Group Meetings (University of Northampton). The usual disclaimer applies.

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# 1 Introduction

One of the most recent stylised puzzles in corporate finance is the increase in debt-free or under-levered (financial conservatism, thereon) firms which is contrary to predictions of the main capital structure theories. The trend implies that firms are increasingly forgoing the benefits associated with debt finance such as interest tax shield, lower costs of capital, and the disciplinary role of debt (Graham and Harvey, 2001; Bessler et al., 2013; Bigelli et al., 2014). This puzzling phenomenon has motivated several studies on the determinants of financial conservatism. For example, Bigelli et al. (2014) show that financial conservatism is more pronounced in smaller firms and firms with low intangible assets and effective tax rates. Bessler et al. (2013) also report that financial conservatism is higher in common law countries, countries with higher creditor protection, and in jurisdictions with dividend relief tax systems. Notwithstanding the contributions of these papers, it remains unclear whether financial conservatism has any financial benefit or cost, especially during periods of heightened uncertainty and contractions in credit supply such as the global financial crisis. In this paper, we address the above research gap and provide new insights on whether financial conservatism enhances or preserves firm value during the 2008–09 credit supply shock within the context of emerging markets.

The effects of the global financial crisis (GFC) are still being felt, and much is yet to be understood about how and why it affected some economic agents more than others at firm, industry and country level (Anginer and Demirguc-Kunt, 2014; Dawood et al., 2017).<sup>1</sup> Our study sheds light on the above research question and is important for two main reasons. First, as the link between financing and real decisions is contentious, the 2008–09 exogenous credit supply shock provides a rare and unique *quasi-natural experiment* set-

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<sup>1</sup>Several studies report contradictory results on the effects of the GFC on corporate decisions. For example, Duchin et al. (2010) and Almeida et al. (2011) find that the crisis had a significant adverse effect on corporate investment. However, Kahle and Stulz (2013) find no significant differences between non-bank-dependent and bank-dependent firms of the effect of the crisis on debt issuance and capital expenditure.

ting that enables us to examine this issue directly.<sup>2</sup> Second, the 2008–09 contraction in credit supply offers an opportunity to examine how economic shocks originating in developed countries propagate and affect firms in less integrated and understudied emerging economies. This is of particular importance as there is a general consensus that the effects of the GFC vary in both intensity and duration with the level of economic integration (Allen and Giovannetti, 2011; Berman and Martin, 2012; Duygun et al., 2016). By focusing on the GFC, we provide direct empirical evidence on the adverse effects of the crisis across emerging economies and whether these are moderated by financing structures.

Using a large sample of publicly listed African firms, we examine the effects of financial conservatism on firm value over the period 2003–2012. We contend that as the GFC was an unexpected credit supply shock, firms had limited or no time to adjust their financing policies, hence, our estimates are less likely to be biased by reverse causality. As expected, we find that the GFC had a significant negative effect on firm value. On average, firm value decreased by 14%–20% post 2008. This decrease is robust to different definitions of firm value, the window-period used, and other factors that are known to affect firm value. However, in our main analysis we find that this negative effect is insignificant and less pronounced for firms that are financially conservative. This finding is novel as the prior literature on financial conservatism is rather confined to the examination of the determinants of conservatism and does not investigate when and where it is most beneficial.<sup>3</sup> Thus, our results suggest that financial conservatism has several important implications on firm value in the aftermath of the GFC as it increases resilience to contractions in credit supply.

We further find that the severity of the 2008–09 contractions in credit supply varies

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<sup>2</sup>The channels through which financing activities affect real decisions are subject to debate (see Stein, 2003; Chava and Roberts, 2008). Since the credit supply shock originated in developed countries (the US and the UK), it should be orthogonal to African firms and their operating environment. This ought to reduce concerns of compounding effects (Puri et al., 2011; Popov and Rocholl, 2018).

<sup>3</sup>For studies that examine the determinants of zero-leverage see Devos et al. (2012), Bessler et al. (2013), Dang (2013), and El Ghouli et al. (2018).

across firms and countries as well as over time. Our results show that the panic occurred earlier in Africa relative to developed countries, with the decrease in firm value peaking in 2006, and diminishing thereafter. This is inconsistent with the US studies of [Almeida and Campello \(2007\)](#) and [Chava and Purnanandam \(2011\)](#) that report severe adverse effects during the 2008–09 period. We further find that firms with international exposure, through either cross-listing or foreign sales, were more affected than purely domestic firms and that this effect is moderated by financial conservatism. This implies that firms with high exposure to international markets can mitigate the associated risks by adopting conservative financing policies. Our results further show that firms in common law countries (Nigeria, South Africa, Egypt and Kenya), which are more integrated with the US and the UK (where the crisis originated), were more affected by the crisis than those in civil law countries (Morocco, Tunisia and Ivory Coast). Hence, high levels of economic integration and similar legal systems expose firms in vulnerable countries to severe credit supply shocks originating from developed economies.

We contribute to the literature in five ways. First, we show that financial conservatism is beneficial during the 2008–09 contractions in credit supply. This implies that firms with conservative financial policies, specifically those that are debt-free or unlevered, are better positioned to manage the adverse effect of credit supply shocks relative to those with less conservative financial policies. Second, we contend that, as market imperfections are more apparent in emerging economies, this should result in a pronounced effect of financing decisions on firm value. In line with this prediction, we find that the adverse effects of the GFC increase with leverage since financially conservative firms in our context were less affected relative to non-conservative ones. Third, our results show that economic ties and international business exposure increase vulnerability to economic shocks, but this effect diminishes with financial conservatism. Fourth, we find that firms in common law countries that have closer links to the US and the UK were more adversely affected by

the GFC, but this is less visible for financially conservative firms. Finally, we show that firms in African countries that are less integrated and understudied were also adversely affected by the GFC.<sup>4</sup>

The remainder of the paper proceeds as follows. Section 2 presents the literature review and hypotheses. In Section 3, we present the methodology used. Section 4 explains the data and variable construction. Section 5 presents and discusses the empirical results. Section 6 presents the robustness tests. Finally, Section 7 concludes.

## 2 Literature and hypotheses

Our study builds upon four strands of the literature, namely, (1) the effects of contractions in credit supply on corporate decisions, (2) the nexus between financing and real activities, (3) the link between internationalisation and corporate outcomes, and (4) the effect of legal origin on corporate outcomes.

### 2.1 The global financial crisis, financial conservatism and firm value

Over the past few decades, the frequency and severity of economic crises have increased. The majority of these crises have either been country-specific (e.g. Turkish, Argentinian, and Russian crisis of 2001, 1992-2002 and 2014, respectively) or region-specific (e.g. the Asian financial crisis of the late 1990s and the 2010 euro-zone crisis). The exception is the 2008–09 global financial crisis (GFC). As the GFC originated from the US subprime mortgage market and propagated to other countries (unlike other previous regional or country-specific crises) it is not surprising that it has motivated considerable research. However, studies on the effects of the GFC have reported mixed results, with [Campello](#)

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<sup>4</sup>This addresses the concentration of studies on the effects of the GFC in the US ([Almeida and Campello, 2007](#); [Chava and Purnanandam, 2011](#); [Kahle and Stulz, 2013](#)).

et al. (2010), Chava and Purnanandam (2011), Almeida et al. (2012), Udenio et al. (2018) and Rehman et al. (2019) documenting significant adverse effects on corporate decisions, while Chari et al. (2008), Lemmon and Roberts (2010), Kahle and Stulz (2013), Caporale et al. (2018), Zouaghi et al. (2018) and Choudhry et al. (2019) report no or low effects.<sup>5</sup> The findings of the latter studies are contrary to the central prediction that firms with weaker balance sheets are more likely to be credit rationed during periods of heightened uncertainty (Holmstrom and Tirole, 1997). In addition to this lack of consensus in the literature, there is a dearth of studies that have examined whether firm financial policies provide a shield or increase exposure to the 2008–09 contractions in credit supply.

We address the above research gap and contribute to the literature by examining whether conservative financial policies were important in protecting or shielding firms from the adverse effects of the GFC. Our focus is motivated by the growing interest among academics in understanding why firms are increasingly adopting conservative financial policies (zero and low leveraging) (see Devos et al., 2012; Bessler et al., 2013; Dang, 2013; Bigelli et al., 2014). By adopting such policies, firms are implicitly choosing to forgo the benefits of debt finance, which is inconsistent with the mainstream theories. While extant studies have investigated the determinants of financial conservatism, the question of whether financial conservatism is value relevant during contractions in credit supply is yet to be examined. We contend that unlevered or conservative firms are less likely to be affected by contractions in credit supply since they are more reliant on internal and equity financing. Accordingly, they ought to be better positioned to manage the adverse effects of contractions in credit supply relative to levered firms as they have prior experience in managing investments without debt financing. This is in line with economic theories of predation in which firms may voluntarily decide to lower their leverage to gain a competitive edge and market share during economic slumps (see

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<sup>5</sup>Similarly, Graham and Leary (2011) also concludes that covenant violations during the GFC did not significantly limit access to further credit as lenders were more willing to renegotiate.

Chevalier and Scharfstein, 1996). Against this background, we, therefore, formulate and test the following hypothesis;

**Hypothesis 1 (H1)** : *Financial conservatism enhances firm value during contractions in credit supply.*

## 2.2 International exposure, legal origin, financial conservatism and firm value

Globalisation has spurred the movement of firms across national boundaries to increase market share, profitability and competitive advantage. This has motivated recent research focusing on the interface between international business and finance (see Aggarwal et al., 2009; Fainshmidt et al., 2018; Areneke and Kimani, 2019). Several extant studies document that internationalisation has several important benefits to the firm, such as improvements in corporate practices, profitability and firm value. For example, Juasrikul et al. (2018) show that international alliances with developed market MNEs (DMMNEs) enhance the firm value of emerging market multinationals (EMMNEs). Similarly, Hsu et al. (2013) find that international expansion enhances growth opportunities and access to cutting-edge technology. However, not much has been done on investigating whether firm internationalisation increases contagion risks and exposure to international shocks, and whether financial policies moderate this effect.

We address this lack of research by focusing on the differential effects of the GFC on cross-listed firms and firms with foreign sales. Firms can achieve internationalisation through cross-listing in other countries. Drawing on the bonding hypothesis of Coffee (2002), cross-listing enhances access to external finance and scrutiny as firms bond with international practices. This improves the competitive edge and the relative performance of cross-listed firms over domestic firms. As a result, cross-listing enhances firm value (Coffee, 2002; Charitou and Louca, 2009) and the quality of corporate governance, thus

improves access to external finance and mitigates agency costs and information asymmetry problems (see [Lel and Miller, 2008](#); [Areneke and Kimani, 2019](#)). However, during contractions in credit supply, cross-listing is likely to increase susceptibility to international shocks. We contend that financing policies can moderate this adverse effect since cross-listed firms with conservative financial policies are less likely to be affected by credit supply shocks. This arises because, unlike levered firms, conservative firms are not dependent on debt financing for their survival. Thus, conservative financial policies reduce or moderate the adverse impact of the contractions in credit supply for cross-listed firms during the GFC. We, therefore, hypothesise the following:

**Hypothesis 2 (H2)** : *Financial conservatism mitigates the adverse effects of the GFC on the value of firms with international business exposure through cross-listing.*

As not all internationalised firms are cross-listed, we use foreign sales as another proxy for international business exposure. We posit that during contractions in credit supply, firms with foreign sales are more likely to be affected by contagion effects as their sales shrink both domestically and internationally. However, if our first hypothesis (H1) holds, this severe adverse effect is likely to be moderated by financial conservatism. Financial conservatism, in this case, increases strategic flexibility, which frees the firm to pursue other growth prospects or new markets rather than focus entirely on dealing with debt-overhang issues (which affect levered firms) triggered by the contraction in credit supply. Against this background, we formulate and test the following hypothesis:

**Hypothesis 3 (H3)** : *Financial conservatism mitigates the adverse effects of the GFC on the value of firms with foreign sales.*

Finally, the legal origin of countries ensures strong ties in policies and governance systems such as property rights and investors protection ([La Porta et al., 1997, 2006](#)). As noted earlier, [Bessler et al. \(2013\)](#) show that countries with high creditor protection and



common law systems have the highest number of financially conservative firms. Drawing on this finding, we conjecture that legal origin ensures complementariness and strong ties with countries that have similar systems. While these ties are beneficial, they also constitute another channel that can aid in the transmission of economic shocks to other countries. As the 2008–09 credit supply shock originated in the US and the UK, we expect firms in common law countries to have been more affected relative to those in civil law systems. Accordingly, we test whether financial conservatism (if H1 holds) is more value relevant to firms in countries that have stronger ties with the US and the UK (common law countries) where the credit supply shock originated. We, thus, hypothesise the following:

**Hypothesis 4 (H4)** : *The mitigating role of financial conservatism on firm value during the GFC is more pronounced for firms in countries with common law legal systems.*

### 3 Methodology

To examine the effects of financial conservatism on firm value, we estimate the following model:

$$y_{ijt} = \alpha + \gamma_1 Crisis_t + \gamma_2 Crisis_t \times FC_i + \beta \mathbf{X}_{ijt-1} + \eta_j + \eta_t + \epsilon_{ijt} \quad (1)$$

where  $y_{ijt}$  is the value of firm  $i$  in country  $j$  at time  $t$ ;  $\gamma_1$ ,  $\gamma_2$ , and  $\beta$  are coefficients to be estimated;  $Crisis_t$  is a dummy that takes the value of one over the period 2008–2012 and zero otherwise;  $FC_i$  is a dummy that takes the value of one for financially conservative firms and zero otherwise;  $\mathbf{X}_{ijt-1}$  is a vector of firm-specific characteristics explained below;  $\eta_j$  and  $\eta_t$  are the country and time fixed effects; and  $\epsilon_{ijt}$  is the error term. As financial conservatism ( $FC_i$ ) is time-invariant, the coefficient of  $FC_i$  in Equation (1) is absorbed by the firm-fixed effect. For robustness, we use several definitions of financial conservatism

( $FC_i$ ), namely: zero leverage (ZL) for firms without debt, almost-zero leverage (AZL) for firms with less than 1% debt, and ultra-low leverage (UL) for firms with less than 5% debt. Our measures of financial conservatism are based on the pre-crisis period to avoid the possible compounding effects of the credit shock on financing decisions (see [Angrist and Pischke, 2008](#)). The vector  $\mathbf{X}_{ijt-1}$  consists of return on assets (ROA), sales growth (SG), cash and cash equivalents (Cash), property, plant and equipment (PPE), size (Size), and the median of the dependent variable.<sup>6</sup>

To investigate the variations of the effect of leverage on firm value, we next estimate a modified version of Equation (1) that includes three leverage dummies ( $D2_{ijct} - D4_{ijct}$ ) as follows:-

$$y_{ijt} = \alpha + \sum_{k=2}^4 \lambda_k \mathbf{Dk}_{ijct} + \gamma_1 Crisis_t + \sum_{k=2}^4 \lambda'_k \mathbf{Dk}_{ijct} \times Crisis_t + \beta \mathbf{X}_{ijt-1} + \eta_j + \eta_t + \epsilon_{ijt} \quad (2)$$

where  $\sum_{k=2}^4 \beta_k \mathbf{Dk}_{ijct}$  is a vector of financing (leverage) policies defined below with slope coefficients from  $\lambda_2$  to  $\lambda_4$ .  $D1_{ijct}$  (low-leverage),  $D2_{ijct}$  (low-medium leverage),  $D3_{ijct}$  (medium-high leverage) and  $D4_{ijct}$  (high-leverage) are dummy variables that take the value of one and otherwise zero if firm  $i$  in industry  $j$  at time  $t$  is categorised as following one of the four leverage policies. For example,  $D1_{ijct}$  is equal to one if a firm is categorised in the first quantile of the leverage level and otherwise zero. We drop  $D1_{ijct}$  (low-leverage) to avoid the dummy variable trap. To deal with unobserved heterogeneity, we include firm, country and time-fixed effects in all regressions and report standard errors that are clustered at firm-level.

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<sup>6</sup>The choice of firm-specific factors is informed by the literature (e.g., [Fama and French, 1998](#); [Gamba and Triantis, 2008](#); [Kim et al., 2016](#)).

## 4 Data

Our sample consists of publicly listed firms extracted from *Thomson Reuters Datastream* over the period 2003–2012. As is standard in the literature, we exclude firms in the financial and utility sectors, those with missing data on key variables, and firms with more than 100% growth in assets or sales (see [Baek et al., 2004](#); [Enikolopov et al., 2014](#)). We only retain firms that have at least one observation in both the pre-crisis (2003–2007) and the crisis periods (2008–2012). All variables used are winsorised at the lower and upper one percentile. Our final unbalanced sample consists of 5,320 firm-year observations (901 firms) from seven African countries (Egypt, Ivory Coast, Kenya, Morocco, Nigeria, South Africa and Tunisia). All variables used are defined in [Table 1](#).

PLEASE INSERT [TABLE 1](#) HERE

PLEASE INSERT [TABLE 2](#) HERE

[Table 2](#) presents the summary statistics for all the variables. Panel A, for the main variables, show an overall mean (standard deviation) of 1.578 (0.818), 2.248 (1.723) and 0.226 (0.0.574) for firm value (Q), market value-to-equity (MVE) and total shareholder return (TSR), respectively. These summary statistics are in line with the literature.<sup>7</sup> Comparisons of the periods 2003–2007 and 2008–2012 suggest that the GFC had a significant negative effect on firm value (Q), market value-to-equity (MVE) and total shareholder return (TSR). The changes for the other firm-specific factors around the GFC period are not significant and less pronounced, except for return-on-assets (ROA) and size (Size). Panel B presents the difference in firm value between the period 2003–2007 and 2008–2012, and across non-financially conservative (Non-FC) and financially conservative (ZL, AZL, and UL) firms. The results show that the value of financially conservative firms decreased less than that for non-financially conservative firms. This significant and more pronounced

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<sup>7</sup>See [Ojah and Pillay \(2009\)](#), [Agyei-Boapeah and Machokoto \(2018\)](#) and [Machokoto et al. \(2020\)](#).

decrease in value for non-financially conservative firms (Non-FCs) is consistent across different measures of firm value, namely market-value-to-equity (MVE) and total shareholder return (TSR). These differences are consistent with our main hypothesis (H1) and show *a priori* that conservative financial policies reduce the adverse effects of the GFC on firm value.

PLEASE INSERT FIGURE 1 HERE

Figure 1 plots firm value for the four quantiles of firms categorised by leverage. Figure 1a shows that firm value decreases with leverage and, more importantly, it is higher in the pre-crisis period (2003–2007) than in the crisis-period (2008–2012) across all leverage quantiles. In Figure 1b, we observe similar variations in firm value around the GFC for the box plots based on a shorter window-period (2006–2009). This provides *prima facie* evidence that the GFC had a negative effect on firm value and that this effect varies with the level of leverage.

PLEASE INSERT FIGURE 2 HERE

Figure 2 presents the cross-country differences in firm value. Of particular interest are the variations in firm value between the periods 2003–2007 and 2008–2012, which show that the value of firms in civil law countries (Ivory Coast, Tunisia and Morocco) increased, while that of firms in common law countries decreased. We link this result to differences in the level of integration with the countries where the crisis originated (the US and UK). Thus, firms in the countries that have closer economic, legal and social ties to the US and the UK (common law countries) were more affected than those in civil law countries.

PLEASE INSERT TABLE 3 HERE

Table 3 presents the pairwise correlations of all variables used. Firm value (Q) is positively correlated with cash-flow, debt, market-value-to-equity (MVE) and size, while it is negatively correlated with cash. These correlations are as expected, except for cash which suggests that firms reduce cash holdings to finance investments.

## 5 Results

To test our main hypothesis (H1), we estimate Equation (1) that relates firm value to financial conservatism (ZL, AZL and UL), a financial crisis dummy (*Crisis*), an interaction term of financial conservatism with the financial crisis, and other control variables. Table 4 summarises our main findings.

PLEASE INSERT TABLE 4 HERE

Columns (1)–(8) of Table 4 consistently show that the GFC (*Crisis*) has a negative and significant effect on firm value. This result holds for both a longer (2003–2012) and shorter (2006–2009) window-period around the GFC, and is broadly consistent with our first hypothesis (H1) and the literature on advanced economies (see Baek et al., 2004; Gupta et al., 2013; Enikolopov et al., 2014). We further find that the interaction term,  $Crisis \times FC$ , is positive and significant, which implies that financially conservative firms were less affected by the credit supply shock. Our results show that the value of levered firms decreased by 0.567 and that for zero-levered (ZL) firms increased by 0.161 ( $\gamma_1 + \gamma_2$ ) (in Column 2). We find similar but lower decreases of 0.155 and 0.309 for the other measures of financial conservatism, namely almost-zero levered (AZL) firms in Column (3) and ultra-low levered (UL) firms in Column (4), respectively. Columns (5)–(8), for the shorter window-period (2006–2009), show similar results, with ZL firms experiencing a moderate increase in firm value. Similarly, the value of AZL and UL firms decreased by a small and insignificant margin.

PLEASE INSERT FIGURE 3 HERE

Figure 3 plots the estimated coefficients of Equation (1) with indicator variables for 2003–2007, 2009, 2010, 2011 and 2012 interacted with the dummy for non-financially conservative firms ( $NFC_i$ ). These plots indicate that levered firms (non-financially conservative firms (Non-FC)) experienced significant decreases in firm value from 2007 onwards. The decrease in firm value that we document is robust to alternative definitions of financial conservatism (as shown in Figures 3b and 3b). These results are in line with Table 4 and suggest that financial conservatism enhances or preserves firm value during credit supply shocks.

We next examine the effects of the GFC across firms with different levels of debt financing (leverage). To do this, we estimate Equation (2) augmented with three dummies that capture differences in the level of debt financing used by the sample firms. Table 5 summarises the results for our augmented model.

PLEASE INSERT TABLE 5 HERE

Consistent with our predictions, the coefficient estimates of the three leverage policies ( $D2$ ,  $D3$ ,  $D4$ ) in Column (1) are negative and insignificant. This suggests that the firms have similar values before the crisis despite the differences in financing structures. However, Column (2) shows that the estimate of the coefficients on the crisis dummy ( $Crisis$ ) and the interaction terms ( $Crisis \times D2$ ,  $Crisis \times D3$ , and  $Crisis \times D4$ ) are significant. Columns (3) and (4) for the shorter window-period around the GFC (2006–2009) show similar results. This provides further supporting evidence for our first hypothesis (H1) and suggests that firms with high levels of debt experienced a relatively more pronounced decrease in firm value during the GFC.

We next examine the effects of international business exposure on the relationship between firm value and financial conservatism (H2 and H3). We partition firms into two

groups based on whether a firm is dual-listed (Yes) or not (No), and whether it has foreign sales (Yes) or not (No). Table 6 summarises the estimation results for these sub-samples.

PLEASE INSERT TABLE 6 HERE

Panel A of Table 6 shows that dual-listed firms were more affected by the GFC than domestic or local firms, which suggests negative spill-over effects of bonding. However, this effect is less pronounced for financially conservative firms. This implies that financial conservatism moderates or reduces the adverse effects of credit supply shocks on firm value for cross-listed firms. Our results suggest that financial conservatism is a mechanism through which firms with foreign listings can manage exposure to international business risk, especially during periods of heightened economic uncertainty.

Similarly, we find that firms with foreign sales, in Panel B, were more affected by the GFC relative to firms without international sales. However, the negative effect of contractions in credit supply on the value of firms with foreign sales is less pronounced for financially conservative firms. These results are consistent with our second (H2) and third (H3) hypotheses. These findings suggest that even-though internationalisation is beneficial for firms, it also inadvertently increases exposure to international market risks and is a channel through which economic shocks are transmitted across countries. However, as our results show, this negative effect diminishes with financial conservatism.

PLEASE INSERT FIGURE 7 HERE

Finally, in Table 7, we examine whether the effects of the GFC on firm value vary with legal origin and whether financial conservatism moderates this effect. We estimate Equation (2) that includes a dummy for civil law countries and its interaction with the crisis and financial conservatism dummies ( $Crisis \times Civil \times FC$ ). The coefficient of the *Crisis* dummy is consistently negative and in line with our prior results. We further find that the coefficient of the interaction term,  $Crisis \times Civil$ , is positive and significant.

This suggest that, unlike firms in common law countries, those in civil law countries were immune to the crisis since they are less integrated with the US and the UK where the crisis originated. The results are consistent with Figure 2, which shows that Kenya, Egypt, South Africa and Nigeria were adversely affected by the crisis, while the effect is less pronounced for Ivory Coast, Tunisia and Morocco. This suggests that the effects of the GFC vary with legal system, and countries that are more tied to the US and the UK are more affected than others. Columns (2)–(4) further shows that the interaction terms of financial conservatism and the crisis dummy are consistently positive and significant, which supports Hypothesis 4 (H4). Columns (5)–(8) show similar results (for the period 2006–2009) which suggests that our findings are robust to changes in the window-period around the GFC. Overall, the results show that financial conservatism reduces the adverse effects of the credit supply shocks in common law countries while it enhances firm value in civil law countries.

In summary, our results confirm the adverse effect of the GFC on firm value as reported in the US by [Duchin et al. \(2010\)](#) and [Almeida et al. \(2011\)](#). We also show that the effect of the GFC on firm value varies with the level of leverage and international business exposure. Our further analyses, however, reveal that financially conservative firms and those without international exposure were less affected by the GFC than high-levered firms and those with international business exposure (the emerging market multinationals (EMMNEs)). More importantly, we find that financial conservatism reduces the adverse effect of internationalisation on firm value during the GFC. Hence, our results highlight the significant effect of financing activities on real decisions, which becomes more apparent during periods of heightened uncertainty, such as the GFC.



## 6 Robustness

In this section, we implement a battery of robustness tests. First, we re-estimate our baseline model of Equation (1) using market value-to-equity (MVE) and total shareholder return (TSR) as the dependent variables. Table 8 summarises the results for these alternative proxies of firm value.

PLEASE INSERT TABLE 8 HERE

Table 8 shows that, in all specifications, the coefficient of the crisis dummy (*Crisis*) is negative and significant, but the coefficients of the interaction terms between the financial conservatism dummy (ZL, AZL and UL, ZLL) and the crisis dummy (*Crisis*) are positive and significant. This finding is consistent with our central hypothesis (H1) and implies that firms in these countries were adversely affected by the 2008–09 credit supply shock despite being less integrated with developed economies, and that this effect is less pronounced for conservative firms. Columns (1) and (2) show the robustness of our results to the use of alternative proxies of firm value and confirms that financial conservatism preserves or enhances firm value during the GFC.<sup>8</sup>

Next, in Columns (3)–(8) of Table 8, we replicate the main analyses using sub-samples for South Africa and other countries. The aim is to ensure that our results are not mainly driven by one country (in this case South Africa). Columns (3)–(5) show that the coefficient of the crisis dummy (*Crisis*) is negative and significant, which suggests that the crisis had a similar adverse effect on firm value for firms in South Africa and other countries as shown in the previous sections. Columns (3)–(5) show that the interaction term,  $Crisis \times ZL$ , is positive and significant, which suggests that financially conservative firms were less affected by the credit supply shock. Columns (6)–(8) show similar results

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<sup>8</sup>In unreported results, we include a set of macroeconomic control variables that may affect firm value and find that our main conclusions do not change. This should allay concerns of other omitted variables such as macroeconomic factors biasing our inferences.

for firms in other countries (excluding South Africa). Based on these results, we conclude that our baseline results are unlikely to be driven by one or a few countries in our sample.

We further conduct a robustness test where we re-estimate our baseline model across four industrial sectors, namely Basic Materials (BM), Consumer Goods and Services (CG&S), Health and Technology (H&T), and Industrial (IND) sectors. Consistent with our main results, Columns (9)–(12) show that the crisis had a significant adverse effect across all four sectors. Similarly, we find that financially conservative firms across all sectors, except for those in the Health and Technology sectors (H&T), were less affected by the crisis. We attribute the somewhat puzzling result for the Health and Technology (H&T) sectors to binding financial constraints as untabulated results (available from the authors) show that these firms are smaller and younger than their non-conservative counterparts. A combination of the aforementioned characteristics in addition to operating in a very risky sector result to the adverse effects of the crisis outweighing the benefits of financial conservatism, thus leading to the negative overall coefficient ( $Crisis + Crisis \times ZL$ ). Based on this finding, we interpret the financial conservatism that we observe for firms in the Health and Technology (H&T) sector as externally imposed (due to binding credit constraints) rather than being deliberate or due to internal strategic choice.

PLEASE INSERT FIGURE 4 HERE

Finally, we estimate a modified version of Equation (1) in which we replace the crisis dummy ( $Crisis$ ) and the interaction term ( $Crisis \times FC_i$ ) with lagged corporate debt ( $Debt_{ijt-1}$ ). This enables us to directly examine how corporate debt affects firm value. In Figure 4, we plot the coefficient of lagged corporate debt for the cross-sectional yearly regressions of firm value while controlling for return on assets (ROA), sales growth (SG), cash and cash equivalent (Cash), property, plant and equipment (PPE), size (Size), and the industrial median of market value (IndMedQ). The yearly plots of the coefficients show significant variation in the effect of corporate debt on firm value. Over the sample

period, the negative effect of corporate debt on firm value peaks in 2006, which implies that symptoms of the crisis were visible earlier in Africa. This negative effect dissipates (Figure 4a) or is stable (Figure 4b) from 2006 onwards, which suggests that African firms recovered much earlier than those in developed countries. The stable coefficient for the restricted sample of only firms that are listed in Africa over the period 2006–2010, in Figure 4b, further suggests that firms with operations outside Africa were more affected than local or domestic firms. These results, as shown previously in Table 6, indicate that cross-listing is one of the channels through which credit supply shocks are transmitted across capital markets. Overall our robustness analyses confirm that financing policies have a significant effect on firm value as is consistent with our main results.

## 7 Summary discussion and conclusion

Motivated by the ongoing debate on whether managers leave money on the table by adopting conservative financing policies, we use a large sample of African firms and the GFC as a *quasi-natural experiment* to study the effects of financial conservatism on firm value. Specifically, we examine the effects of the GFC on firm value and how this is moderated by financial conservatism. We then examine how the effects of the GFC and the moderating role of financial conservatism vary across local and international firms, and across countries with different legal systems.

Our study makes several contributions to theory and practice. First, we find robust and significant adverse effects of the GFC on the value of publicly listed firms in emerging markets that are less integrated with developed economies. Our further analyses show that, relative to firms in civil law countries, the adverse effects of the GFC were more pronounced for firms in common law countries that have stronger ties to the US and the UK where the financial crisis originated. This provides new evidence on the far-reaching

effects of the 2008–2009 contraction in credit supply and how ties in legal systems aid the transmission of economic shocks across countries.

Second, we find that the adverse effect of the GFC is, however, less pronounced for financially conservative firms, which suggests that adopting conservative financing policies preserve firm value during crises periods. This is contrary to the mainstream literature, which shows that using debt financing is beneficial as it increases the interest tax shield, lowers financing costs, and mitigates the extraction of private benefits by managers. Instead, our results suggest that such benefits associated with debt financing may not sufficiently outweigh those arising from financial conservatism (in the form of financial flexibility), particularly during periods of marked contractions in credit supply.

Third, we show that strategic adoption of financial conservatism is one way of effectively managing risk, especially during economic downturns and for firms with exposure to international business risk (firms with foreign sales or cross-listings). Our results suggest that financial conservatism increases financial flexibility, thereby immunising firms against credit supply shocks in both local and international capital markets. By showing that the effects of the GFC vary with financing policies, we also provide further and more direct evidence on the contentious nexus between financing and real corporate activities. This also serves as a forewarning of the potential adverse effects of over-leveraging, and the need to develop robust risk management strategies, especially given the recent surge in corporate debt (Lund et al., 2018; Machokoto et al., 2020) and predictions of another eminent crisis as firms appear to be taking investment risks similar to those that led to the 2008–2009 GFC (see Syriopoulos et al., 2015; Duffie, 2019).

Finally, contrary to prior literature on the bonding hypothesis (e.g., Coffee, 2002; Charitou and Louca, 2009; Lel and Miller, 2008; Areneke and Kimani, 2019) which documents significant positive spill-over effects on firm value, we find that bonding is not always beneficial, especially during crises periods as it increases contagion risks. Our

results show that firms which cross-list to gain access to external finance and benefit from better governance systems (following on the bonding hypothesis of [Coffee \(2002\)](#)), fare worse than domestic firms during the GFC, except if they are financially conservative. Overall, our findings yield strong support for the moderating role of financial conservatism on firm value during the 2008–2009 contractions in credit supply.

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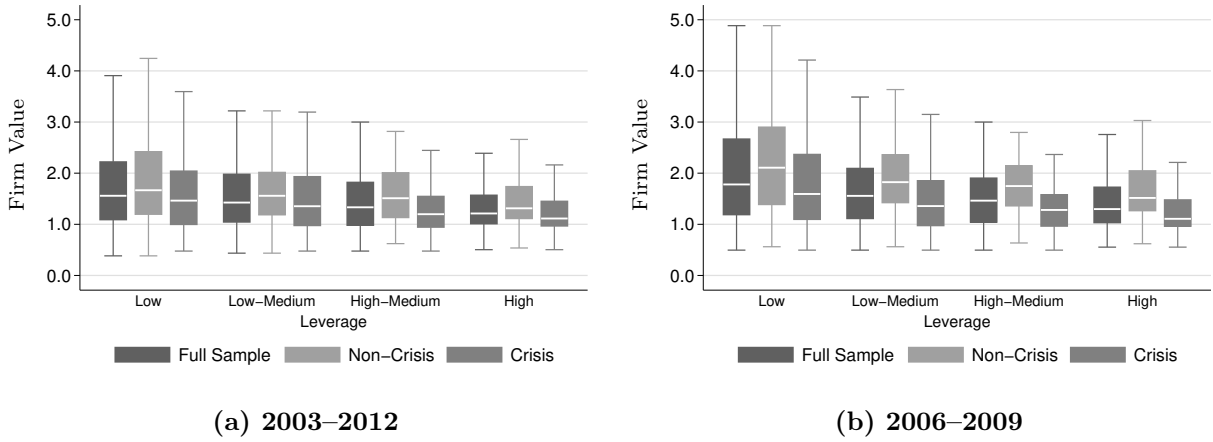
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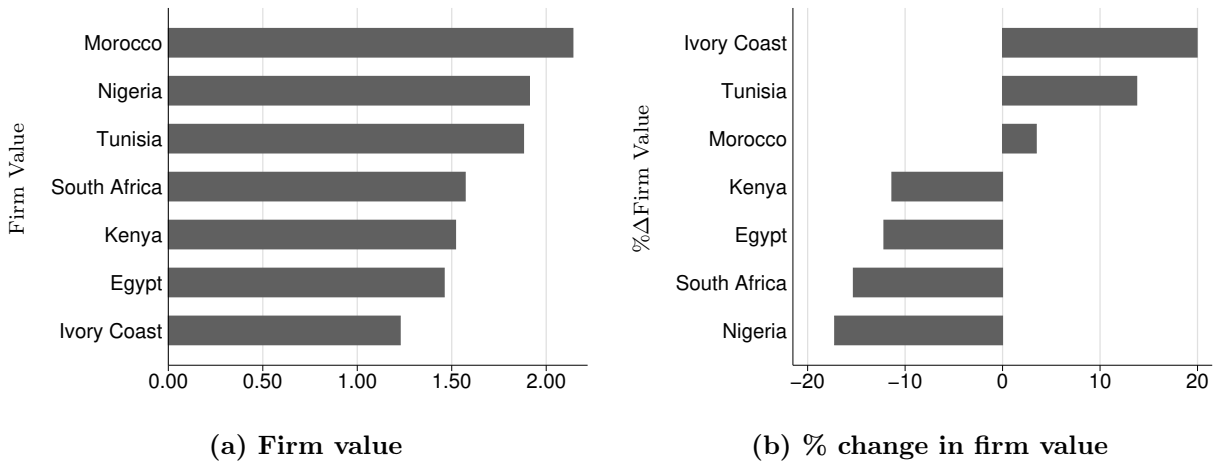
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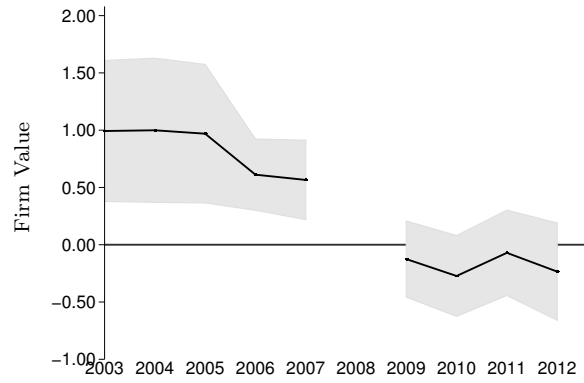
**Figure 1 Firm value and leverage before and during the crisis**

The figure plots firm value for the four subgroups of firms over the sample periods 2003–2012 and 2006–2009. In each year, we partition the firms into four quantiles based on leverage, namely; Low, Low-Medium, High-Medium, and High. The central horizontal line in the box is the median while the top and bottom of the box are the 25<sup>th</sup> and 75<sup>th</sup> percentiles, respectively. The upper and lower whiskers are the maximum and minimum values, respectively. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the periods 2003–2012 and 2006–2009. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles.

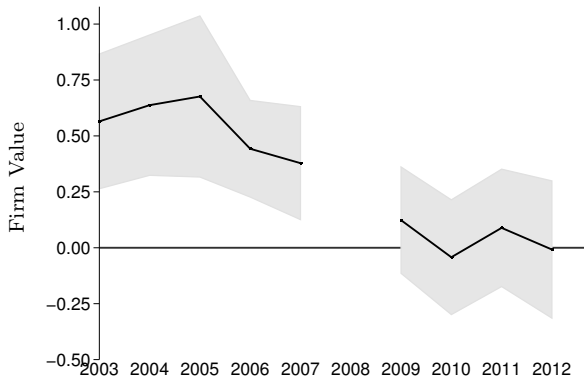


**Figure 2 Firm value by country before and during the crisis**

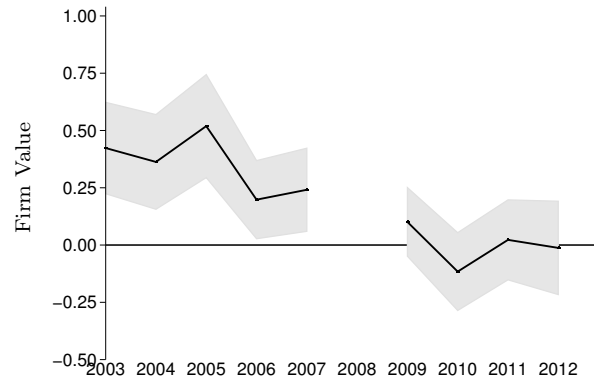
The figure plots firm value by country (Figure 2a) and for the percentages change in firm value from the pre-crisis (2003–2007) and crisis (2008–2012) (Figure 2b). The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles.



(a) Non-ZL firms



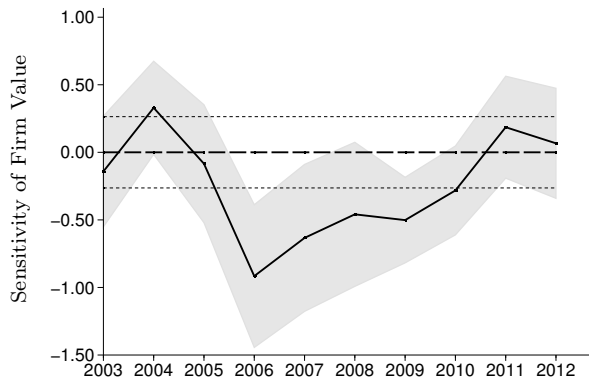
(b) Non-AZL firms



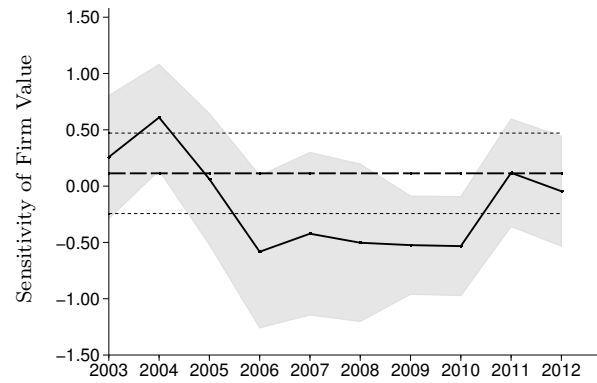
(c) Non-UL firms

**Figure 3 The changes in firm value of non-financially conservative relative to financially conservative firms.**

The figures plot the coefficients estimation Equation (1) with indicator variations for 2003–2007, 2009, 2010, 2011 and 2012 interacted with the dummy for non-financially conservative firms. The indicator for 2008 is omitted so that the coefficients from the regressions are interpreted as measuring the firm value are relative to that in 2008. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles.



(a) All firms



(b) African listed firms

**Figure 4 The effects of leverage on firm value around the crisis**

The figure plots the coefficient of leverage (sensitivity of firm value) in the cross-sectional yearly regressions of firm value, controlling for return on assets (ROA), sales growth (SG), cash and cash equivalent (Cash), property, plant and equipment (PPE), size (Size), and the industrial median of market value (IndMedQ). The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles.



## Table 1 Variable definitions

The table lists the definitions and sources of all variables used.

Variable	Source	Definition
Q	<i>DataStream</i>	Market of equity plus total debt-to-total assets (Firm Value (Tobin's $q$ )).
MVE	<i>DataStream</i>	Market of equity-to-book equity.
TSR	<i>DataStream</i>	Total shareholder return.
ZL	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm has no debt, and zero otherwise.
AZL	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm has almost zero leverage (less than or equal to 1%), and zero otherwise.
UL	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm has less than 5% debt and zero otherwise.
FC	<i>DataStream</i>	A dummy that takes the value of one for financially conservative firms and zero otherwise.
NFC	<i>DataStream</i>	A dummy that takes the value of one for non-financially conservative firms and zero otherwise.
D1	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm is categorised into the first quantile of the leverage level and zero otherwise.
D2	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm is categorised into the second quantile of the leverage level and zero otherwise.
D3	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm is categorised into the third quantile of the leverage level and zero otherwise.
D4	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm is categorised into the fourth quantile of the leverage level and zero otherwise.
Debt	<i>DataStream</i>	Total debt-to-total assets.
ROA	<i>DataStream</i>	Operating income-to-total assets.
SG	<i>DataStream</i>	Sales growth.
Cash	<i>DataStream</i>	Cash and equivalent-to-total assets.
Size	<i>DataStream</i>	Log of total assets.
Foreign Sales	<i>DataStream</i>	Foreign sales-to-total assets.
Dual Listing	<i>DataStream</i>	Is a dummy variable that takes the value of one if a firm is dual-listed and zero otherwise.
IndMedQ	<i>DataStream</i>	The industrial median firm value in each year.
IndMedMVE	<i>DataStream</i>	The industrial median MVE in each year.
IndMedTSR	<i>DataStream</i>	The industrial median TSR in each year.
Civil		Country classifications into civil and common law are based on <a href="#">La Porta et al. (1997)</a> .

**Table 2 Basic statistics**

The table summary statistics for all variables used. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a, b, c, d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

**Panel A: Main variables**

Variables	2003–2012			2003–2007			2008–2012			Differences		Kolmogorov	Kruskal
	Mean	Median	Std.dev	Mean	Median	Std.dev	Mean	Median	Std.dev	Mean	Median	-Smirnov	-Wallis
Q	1.578	1.351	0.818	1.707	1.508	0.811	1.479	1.237	0.810	-0.228 <sup>a</sup>	-0.271 <sup>a</sup>	0.185 <sup>a</sup>	191.210 <sup>a</sup>
MVE	2.248	1.728	1.723	2.566	2.043	1.767	2.002	1.475	1.647	-0.564 <sup>a</sup>	-0.568 <sup>a</sup>	0.199 <sup>a</sup>	225.758 <sup>a</sup>
TSR	0.226	0.106	0.574	0.421	0.292	0.624	0.075	0.000	0.481	-0.346 <sup>a</sup>	-0.292 <sup>a</sup>	0.272 <sup>a</sup>	503.887 <sup>a</sup>
TDA	0.157	0.136	0.138	0.157	0.136	0.133	0.158	0.134	0.142	0.001	-0.002	0.048 <sup>b</sup>	0.769
ROA	0.168	0.165	0.134	0.178	0.174	0.147	0.161	0.158	0.123	-0.017 <sup>a</sup>	-0.016 <sup>a</sup>	0.099 <sup>a</sup>	34.135 <sup>a</sup>
SG	0.104	0.086	0.198	0.107	0.089	0.186	0.102	0.085	0.206	-0.005	-0.004	0.028	0.224
Cash	0.134	0.102	0.116	0.136	0.102	0.118	0.132	0.102	0.115	-0.004	0.000	0.040 <sup>d</sup>	1.114
Size	14.818	14.951	2.094	14.918	15.128	2.018	14.745	14.731	2.146	-0.173 <sup>b</sup>	-0.397 <sup>a</sup>	0.087 <sup>a</sup>	7.743 <sup>b</sup>
MedQ	1.418	1.360	0.363	1.394	1.360	0.293	1.436	1.353	0.407	0.042 <sup>a</sup>	-0.007	0.113 <sup>a</sup>	0.010
MedMVE	1.873	1.733	0.814	1.849	1.764	0.737	1.892	1.685	0.867	0.043 <sup>d</sup>	-0.079	0.197 <sup>a</sup>	0.158
MedTSR	0.172	0.164	0.277	0.289	0.319	0.244	0.084	0.079	0.267	-0.205 <sup>a</sup>	-0.240 <sup>a</sup>	0.400 <sup>a</sup>	738.951 <sup>a</sup>
N	5,230			2,279			2,951						
Firms	901												

**Panel B: Non-financially and financially conservative firms**

#	Period	Q				MVE				TSR			
		Non-FC	ZL	AZL	UL	Non-FC	ZL	AZL	UL	Non-FC	ZL	AZL	UL
(1)	All	1.518	2.049	1.885	1.813	2.171	2.638	2.429	2.543	0.214	0.296	0.307	0.270
(2)	2003–2007	1.659	2.039	1.868	1.852	2.547	2.744	2.476	2.623	0.430	0.376	0.410	0.393
(3)	2008–2012	1.418	2.058	1.905	1.771	1.906	2.537	2.376	2.457	0.062	0.219	0.190	0.137
	N	4,157	335	580	1,073	4,157	335	580	1,073	4,157	335	580	1,073
Differences (3)–(2)													
	Diff-Mean	-0.241 <sup>a</sup>	0.019	0.037	-0.081	-0.641 <sup>a</sup>	-0.207	-0.100	-0.166	-0.368 <sup>a</sup>	-0.157 <sup>b</sup>	-0.220 <sup>a</sup>	-0.256 <sup>a</sup>
	Diff-Median	-0.271 <sup>a</sup>	-0.153	-0.169	-0.177 <sup>b</sup>	-0.589 <sup>a</sup>	-0.022	-0.073	-0.344 <sup>c</sup>	-0.285 <sup>a</sup>	-0.035	-0.166 <sup>b</sup>	-0.210 <sup>a</sup>
	Kolmogorov-Smirnov	0.195 <sup>a</sup>	0.116	0.104 <sup>d</sup>	0.140 <sup>a</sup>	0.213 <sup>a</sup>	0.131	0.120 <sup>c</sup>	0.148 <sup>a</sup>	0.280 <sup>a</sup>	0.179 <sup>b</sup>	0.248 <sup>a</sup>	0.239 <sup>a</sup>
	Kruskal-Wallis	176.559 <sup>a</sup>	0.628	0.918	8.214 <sup>b</sup>	212.116 <sup>a</sup>	1.527	1.851	11.766 <sup>a</sup>	422.640 <sup>a</sup>	5.162 <sup>c</sup>	22.230 <sup>a</sup>	68.352 <sup>a</sup>

### Table 3 Correlation

The table presents the pairwise correlations for all variables used. The sample consists of listed non-financial and non-utility firms in South Africa drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a</sup>, <sup>b</sup>, <sup>c</sup>, <sup>d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

#	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)	Q	1													
(2)	MVE	0.879 <sup>a</sup>	1												
(3)	TSR	0.284 <sup>a</sup>	0.279 <sup>a</sup>	1											
(4)	ZL	0.158 <sup>a</sup>	0.066 <sup>a</sup>	0.036 <sup>c</sup>	1										
(5)	AZL	0.139 <sup>a</sup>	0.043 <sup>b</sup>	0.052 <sup>a</sup>	0.730 <sup>a</sup>	1									
(6)	UL	0.153 <sup>a</sup>	0.096 <sup>a</sup>	0.038 <sup>b</sup>	0.503 <sup>a</sup>	0.689 <sup>a</sup>	1								
(7)	TDA	-0.198 <sup>a</sup>	-0.120 <sup>a</sup>	-0.017	-0.289 <sup>a</sup>	-0.393 <sup>a</sup>	-0.496 <sup>a</sup>	1							
(8)	ROA	0.386 <sup>a</sup>	0.281 <sup>a</sup>	0.061 <sup>a</sup>	0.102 <sup>a</sup>	0.091 <sup>a</sup>	0.113 <sup>a</sup>	-0.268 <sup>a</sup>	1						
(9)	SG	0.108 <sup>a</sup>	0.102 <sup>a</sup>	0.033 <sup>c</sup>	-0.035 <sup>c</sup>	-0.024	-0.029 <sup>d</sup>	-0.027 <sup>d</sup>	0.230 <sup>a</sup>	1					
(10)	Cash	0.210 <sup>a</sup>	0.136 <sup>a</sup>	0.036 <sup>c</sup>	0.271 <sup>a</sup>	0.347 <sup>a</sup>	0.315 <sup>a</sup>	-0.384 <sup>a</sup>	0.234 <sup>a</sup>	0.001	1				
(11)	Size	0.093 <sup>a</sup>	0.141 <sup>a</sup>	-0.072 <sup>a</sup>	-0.211 <sup>a</sup>	-0.196 <sup>a</sup>	-0.137 <sup>a</sup>	0.090 <sup>a</sup>	0.055 <sup>a</sup>	0.082 <sup>a</sup>	-0.212 <sup>a</sup>	1			
(12)	MedQ	0.355 <sup>a</sup>	0.347 <sup>a</sup>	-0.074 <sup>a</sup>	0.135 <sup>a</sup>	0.073 <sup>a</sup>	0.136 <sup>a</sup>	-0.126 <sup>a</sup>	0.164 <sup>a</sup>	0.082 <sup>a</sup>	0.072 <sup>a</sup>	0.032 <sup>c</sup>	1		
(13)	MedMVE	0.335 <sup>a</sup>	0.350 <sup>a</sup>	-0.067 <sup>a</sup>	0.112 <sup>a</sup>	0.055 <sup>a</sup>	0.123 <sup>a</sup>	-0.107 <sup>a</sup>	0.178 <sup>a</sup>	0.115 <sup>a</sup>	0.062 <sup>a</sup>	0.061 <sup>a</sup>	0.953 <sup>a</sup>	1	
(14)	MedTSR	0.215 <sup>a</sup>	0.234 <sup>a</sup>	0.129 <sup>a</sup>	0.019	0.039 <sup>b</sup>	0.058 <sup>a</sup>	-0.070 <sup>a</sup>	0.139 <sup>a</sup>	0.073 <sup>a</sup>	0.082 <sup>a</sup>	0.008	0.417 <sup>a</sup>	0.399 <sup>a</sup>	1

**Table 4 The effects of financial conservatism on firm value**

The table presents the estimation results of Equation (1) that relates the firm value (Q) to the crisis dummy (*Crisis*), financial conservatism dummy (ZL, AZL and UL) and firm-specific variables. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a</sup>, <sup>b</sup>, <sup>c</sup>, <sup>d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

Variables	2003–2012				2006–2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	2.296 <sup>a</sup> (0.591)	2.130 <sup>a</sup> (0.566)	2.133 <sup>a</sup> (0.566)	2.015 <sup>a</sup> (0.583)	10.808 <sup>a</sup> (1.084)	10.125 <sup>a</sup> (1.050)	10.386 <sup>a</sup> (1.068)	10.290 <sup>a</sup> (1.080)
Crisis	-0.513 <sup>a</sup> (0.038)	-0.567 <sup>a</sup> (0.039)	-0.573 <sup>a</sup> (0.038)	-0.585 <sup>a</sup> (0.039)	-0.431 <sup>a</sup> (0.043)	-0.495 <sup>a</sup> (0.039)	-0.493 <sup>a</sup> (0.041)	-0.493 <sup>a</sup> (0.044)
Crisis×ZL		0.728 <sup>a</sup> (0.152)				0.608 <sup>a</sup> (0.141)		
Crisis×AZL			0.418 <sup>a</sup> (0.097)				0.352 <sup>a</sup> (0.103)	
Crisis×UL				0.276 <sup>a</sup> (0.069)				0.203 <sup>b</sup> (0.076)
ROA	0.979 <sup>a</sup> (0.084)	0.925 <sup>a</sup> (0.077)	0.923 <sup>a</sup> (0.080)	0.959 <sup>a</sup> (0.080)	0.434 <sup>c</sup> (0.202)	0.278 (0.198)	0.316 (0.207)	0.343 (0.213)
SG	0.131 <sup>a</sup> (0.039)	0.121 <sup>a</sup> (0.036)	0.131 <sup>a</sup> (0.037)	0.136 <sup>a</sup> (0.038)	0.119 (0.089)	0.096 (0.087)	0.121 (0.088)	0.129 (0.089)
Cash	1.006 <sup>a</sup> (0.144)	0.944 <sup>a</sup> (0.154)	0.982 <sup>a</sup> (0.151)	1.012 <sup>a</sup> (0.149)	1.371 <sup>a</sup> (0.265)	1.331 <sup>a</sup> (0.264)	1.398 <sup>a</sup> (0.265)	1.422 <sup>a</sup> (0.265)
Size	-0.083 <sup>c</sup> (0.039)	-0.062 <sup>d</sup> (0.037)	-0.067 <sup>d</sup> (0.037)	-0.060 (0.039)	-0.626 <sup>a</sup> (0.073)	-0.573 <sup>a</sup> (0.070)	-0.593 <sup>a</sup> (0.072)	-0.589 <sup>a</sup> (0.073)
IndMedian	0.360 <sup>a</sup> (0.051)	0.295 <sup>a</sup> (0.045)	0.328 <sup>a</sup> (0.048)	0.330 <sup>a</sup> (0.048)	0.081 (0.073)	0.042 (0.067)	0.051 (0.068)	0.069 (0.070)
N	4,669	4,669	4,669	4,669	1,896	1,896	1,896	1,896
Firms	901	901	901	901	678	678	678	678
R <sup>2</sup>	0.27	0.29	0.28	0.28	0.28	0.31	0.30	0.29

**Table 5 The effects of leverage policies on firm value**

The table presents the estimation results of Equation (1) that relates the firm value (Q) to the crisis dummy (*Crisis*), leverage policy dummies (D2, D3, and D4) and firm-specific variables. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the periods 2003–2012 and 2006–2009. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a</sup>, <sup>b</sup>, <sup>c</sup>, <sup>d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

Variables	2003–2012		2006–2009	
	(1)	(2)	(3)	(4)
Constant	1.968 <sup>a</sup> (0.569)	2.005 <sup>a</sup> (0.588)	10.161 <sup>a</sup> (1.073)	9.949 <sup>a</sup> (1.091)
D2	-0.021 (0.038)	0.027 (0.050)	-0.095 (0.062)	-0.035 (0.081)
D3	-0.034 (0.043)	0.072 (0.058)	-0.168 <sup>c</sup> (0.072)	-0.065 (0.080)
D4	-0.089 <sup>d</sup> (0.048)	0.016 (0.062)	-0.180 <sup>c</sup> (0.083)	-0.107 (0.097)
Crisis		-0.159 <sup>c</sup> (0.067)		-0.341 <sup>a</sup> (0.079)
Crisis×D2		-0.090 (0.059)		-0.098 (0.083)
Crisis×D3		-0.202 <sup>b</sup> (0.062)		-0.197 <sup>c</sup> (0.095)
Crisis×D4		-0.199 <sup>b</sup> (0.063)		-0.145 <sup>d</sup> (0.086)
ROA	0.982 <sup>a</sup> (0.084)	0.945 <sup>a</sup> (0.081)	0.423 <sup>c</sup> (0.204)	0.285 (0.228)
SG	0.130 <sup>a</sup> (0.038)	0.131 <sup>a</sup> (0.038)	0.129 (0.089)	0.122 (0.087)
Cash	0.978 <sup>a</sup> (0.145)	0.961 <sup>a</sup> (0.150)	1.329 <sup>a</sup> (0.267)	1.331 <sup>a</sup> (0.276)
Size	-0.077 <sup>c</sup> (0.038)	-0.063 (0.038)	-0.604 <sup>a</sup> (0.071)	-0.561 <sup>a</sup> (0.073)
IndMedian	0.364 <sup>a</sup> (0.051)	0.350 <sup>a</sup> (0.049)	0.083 (0.073)	0.077 (0.071)
N	4,669	4,669	1,896	1,896
Firms	901	901	678	678
R <sup>2</sup>	0.27	0.28	0.29	0.29

**Table 6 Internationalisation, financial conservatism and firm value**

The table presents the estimation results of Equation (1) that relates the firm value ( $Q$ ) to the crisis dummy ( $Crisis$ ), financial conservatism dummy ( $ZL$ ,  $AZL$  and  $UL$ ) and firm-specific variables. Figure (a) includes all firms while Figure (b) is for the restricted sample excluding firms not listed or headquartered in Africa. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a</sup>, <sup>b</sup>, <sup>c</sup>, <sup>d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

<b>Panel A: Dual Listing</b>								
	No	Yes	No	Yes	No	Yes	No	Yes
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	2.640 <sup>b</sup> (0.825)	1.867 <sup>c</sup> (0.815)	2.399 <sup>b</sup> (0.793)	1.996 <sup>c</sup> (0.780)	2.464 <sup>b</sup> (0.791)	1.769 <sup>c</sup> (0.783)	2.496 <sup>b</sup> (0.818)	1.530 <sup>d</sup> (0.816)
Crisis	-0.391 <sup>a</sup> (0.056)	-0.664 <sup>a</sup> (0.050)	-0.440 <sup>a</sup> (0.057)	-0.721 <sup>a</sup> (0.051)	-0.447 <sup>a</sup> (0.056)	-0.725 <sup>a</sup> (0.049)	-0.429 <sup>a</sup> (0.057)	-0.756 <sup>a</sup> (0.051)
Crisis×ZL			0.493 <sup>b</sup> (0.186)	1.196 <sup>a</sup> (0.105)				
Crisis×AZL					0.329 <sup>c</sup> (0.128)	0.524 <sup>a</sup> (0.143)		
Crisis×UL							0.128 (0.095)	0.414 <sup>a</sup> (0.094)
ROA	1.022 <sup>a</sup> (0.144)	0.923 <sup>a</sup> (0.102)	0.996 <sup>a</sup> (0.139)	0.830 <sup>a</sup> (0.087)	0.987 <sup>a</sup> (0.142)	0.849 <sup>a</sup> (0.094)	1.011 <sup>a</sup> (0.143)	0.903 <sup>a</sup> (0.094)
SG	0.102 <sup>c</sup> (0.052)	0.176 <sup>b</sup> (0.058)	0.093 <sup>d</sup> (0.049)	0.165 <sup>b</sup> (0.053)	0.098 <sup>c</sup> (0.050)	0.182 <sup>b</sup> (0.056)	0.103 <sup>c</sup> (0.051)	0.186 <sup>b</sup> (0.056)
Cash	0.746 <sup>a</sup> (0.190)	1.381 <sup>a</sup> (0.209)	0.678 <sup>a</sup> (0.201)	1.351 <sup>a</sup> (0.207)	0.715 <sup>a</sup> (0.198)	1.373 <sup>a</sup> (0.212)	0.754 <sup>a</sup> (0.193)	1.368 <sup>a</sup> (0.214)
Size	-0.098 <sup>d</sup> (0.057)	-0.076 (0.051)	-0.075 (0.054)	-0.068 (0.049)	-0.082 (0.054)	-0.062 (0.049)	-0.086 (0.056)	-0.046 (0.052)
IndMedian	0.220 <sup>a</sup> (0.056)	0.606 <sup>a</sup> (0.084)	0.184 <sup>a</sup> (0.051)	0.475 <sup>a</sup> (0.086)	0.200 <sup>a</sup> (0.054)	0.555 <sup>a</sup> (0.084)	0.210 <sup>a</sup> (0.055)	0.542 <sup>a</sup> (0.081)
N	2,371	2,298	2,371	2,298	2,371	2,298	2,371	2,298
Firms	515	386	515	386	515	386	515	386
R <sup>2</sup>	0.23	0.33	0.25	0.37	0.24	0.35	0.23	0.35

<b>Panel B: Foreign Sales</b>								
	No	Yes	No	Yes	No	Yes	No	Yes
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	2.523 <sup>a</sup> (0.655)	1.319 (0.932)	2.213 <sup>a</sup> (0.633)	1.405 (0.915)	2.267 <sup>a</sup> (0.633)	1.423 (0.916)	2.319 <sup>a</sup> (0.658)	1.744 <sup>d</sup> (0.911)
Crisis	-0.387 <sup>a</sup> (0.048)	-0.794 <sup>a</sup> (0.070)	-0.454 <sup>a</sup> (0.048)	-0.838 <sup>a</sup> (0.072)	-0.452 <sup>a</sup> (0.048)	-0.858 <sup>a</sup> (0.062)	-0.429 <sup>a</sup> (0.051)	-0.872 <sup>a</sup> (0.063)
Crisis×ZL			0.639 <sup>a</sup> (0.179)	0.855 <sup>a</sup> (0.209)				
Crisis×AZL					0.321 <sup>b</sup> (0.102)	0.773 <sup>b</sup> (0.251)		
Crisis×UL							0.120 (0.075)	0.681 <sup>a</sup> (0.167)
ROA	0.843 <sup>a</sup> (0.101)	1.277 <sup>a</sup> (0.130)	0.840 <sup>a</sup> (0.099)	1.177 <sup>a</sup> (0.115)	0.822 <sup>a</sup> (0.101)	1.168 <sup>a</sup> (0.115)	0.841 <sup>a</sup> (0.102)	1.138 <sup>a</sup> (0.111)
SG	0.087 <sup>c</sup> (0.042)	0.264 <sup>a</sup> (0.066)	0.075 <sup>d</sup> (0.040)	0.253 <sup>a</sup> (0.063)	0.085 <sup>c</sup> (0.041)	0.259 <sup>a</sup> (0.063)	0.088 <sup>c</sup> (0.042)	0.267 <sup>a</sup> (0.063)
Cash	0.675 <sup>a</sup> (0.157)	1.480 <sup>a</sup> (0.278)	0.605 <sup>a</sup> (0.172)	1.412 <sup>a</sup> (0.268)	0.662 <sup>a</sup> (0.163)	1.428 <sup>a</sup> (0.268)	0.691 <sup>a</sup> (0.158)	1.434 <sup>a</sup> (0.277)
Size	-0.099 <sup>c</sup> (0.048)	-0.054 (0.055)	-0.067 (0.046)	-0.058 (0.054)	-0.076 <sup>d</sup> (0.046)	-0.058 (0.054)	-0.082 <sup>d</sup> (0.048)	-0.069 (0.054)
IndMedian	0.264 <sup>a</sup> (0.046)	0.752 <sup>a</sup> (0.167)	0.202 <sup>a</sup> (0.036)	0.761 <sup>a</sup> (0.166)	0.243 <sup>a</sup> (0.040)	0.754 <sup>a</sup> (0.161)	0.256 <sup>a</sup> (0.043)	0.668 <sup>a</sup> (0.164)
N	2,720	1,949	2,720	1,949	2,720	1,949	2,720	1,949
Firms	675	354	675	354	675	354	675	354
R <sup>2</sup>	0.23	0.35	0.26	0.36	0.24	0.37	0.23	0.38

**Table 7 Legal origin, financial conservatism and firm value**

The table presents the estimation results of Equation (1) that relates the firm value (Q) to the crisis dummy (*Crisis*), financial conservatism dummy (ZL, AZL and UL), civil law dummy (*Civil*), and firm-specific variables. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the periods 2003–2012 and 2006–2009. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a</sup>, <sup>b</sup>, <sup>c</sup>, <sup>d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

Variables	2003–2012				2006–2009			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant	2.344 <sup>a</sup> (0.591)	2.182 <sup>a</sup> (0.569)	2.189 <sup>a</sup> (0.570)	2.087 <sup>a</sup> (0.585)	10.623 <sup>a</sup> (1.076)	10.197 <sup>a</sup> (1.045)	10.356 <sup>a</sup> (1.063)	10.280 <sup>a</sup> (1.067)
Crisis	-0.544 <sup>a</sup> (0.038)	-0.574 <sup>a</sup> (0.039)	-0.582 <sup>a</sup> (0.038)	-0.597 <sup>a</sup> (0.040)	-0.473 <sup>a</sup> (0.040)	-0.504 <sup>a</sup> (0.039)	-0.506 <sup>a</sup> (0.041)	-0.509 <sup>a</sup> (0.043)
Crisis×Civil	0.909 <sup>a</sup> (0.128)	0.370 <sup>a</sup> (0.108)	0.374 <sup>a</sup> (0.108)	0.387 <sup>a</sup> (0.108)	0.832 <sup>a</sup> (0.114)	0.412 <sup>a</sup> (0.093)	0.414 <sup>a</sup> (0.093)	0.417 <sup>a</sup> (0.093)
Crisis×ZL		0.586 <sup>b</sup> (0.179)				0.412 <sup>c</sup> (0.175)		
Crisis×Civil×ZL		0.259 (0.244)				0.233 (0.229)		
Crisis×AZL			0.322 <sup>b</sup> (0.100)				0.214 <sup>c</sup> (0.108)	
Crisis×Civil×AZL			0.515 <sup>b</sup> (0.191)				0.431 <sup>c</sup> (0.185)	
Crisis×UL				0.224 <sup>b</sup> (0.070)				0.121 (0.076)
Crisis×Civil×UL				0.618 <sup>a</sup> (0.178)				0.521 <sup>b</sup> (0.168)
ROA	0.975 <sup>a</sup> (0.084)	0.933 <sup>a</sup> (0.078)	0.932 <sup>a</sup> (0.081)	0.957 <sup>a</sup> (0.080)	0.411 <sup>c</sup> (0.201)	0.309 (0.204)	0.336 (0.209)	0.350 (0.214)
SG	0.126 <sup>a</sup> (0.038)	0.121 <sup>a</sup> (0.037)	0.129 <sup>a</sup> (0.037)	0.133 <sup>a</sup> (0.038)	0.118 (0.088)	0.105 (0.086)	0.125 (0.088)	0.130 (0.089)
Cash	1.006 <sup>a</sup> (0.144)	0.959 <sup>a</sup> (0.150)	0.992 <sup>a</sup> (0.148)	1.016 <sup>a</sup> (0.148)	1.306 <sup>a</sup> (0.266)	1.298 <sup>a</sup> (0.264)	1.329 <sup>a</sup> (0.266)	1.338 <sup>a</sup> (0.265)
Size	-0.082 <sup>c</sup> (0.039)	-0.065 <sup>d</sup> (0.037)	-0.067 <sup>d</sup> (0.038)	-0.060 (0.039)	-0.611 <sup>a</sup> (0.073)	-0.578 <sup>a</sup> (0.070)	-0.589 <sup>a</sup> (0.072)	-0.585 <sup>a</sup> (0.072)
IndMedian	0.322 <sup>a</sup> (0.046)	0.281 <sup>a</sup> (0.045)	0.298 <sup>a</sup> (0.046)	0.294 <sup>a</sup> (0.045)	0.066 (0.066)	0.040 (0.067)	0.043 (0.067)	0.052 (0.067)
N	4,669	4,669	4,669	4,669	1,896	1,896	1,896	1,896
Firms	901	901	901	901	678	678	678	678
R <sup>2</sup>	0.28	0.30	0.29	0.29	0.31	0.32	0.32	0.32

**Table 8 Alternative sub-samples and definitions of firm value**

The table presents the estimation results of Equation (1) that relates the firm value to the crisis dummy (*Crisis*), financial conservatism dummy (ZL) and firm-specific variables. The three alternative measures of firm value are firm value (Q), the market value-to-equity (MVE) and total shareholder return (TSR). Columns (1) and (2) includes all firms, while Columns (3)–(5) is for firms in South Africa and Columns (6)–(8) is for firms from other countries (excluding South Africa). Column (9) is for firms in the Basic Materials (BM) sector. Column (10) is for firms in the Consumer Goods and Services (CG&S) sectors. Column (11) is for firms in the Health and Technology (H&T) sectors. Column (12) is for firms in the Industrial (IND) sector. The sample consists of listed non-utility and non-financial firms in selected African countries drawn from *Datastream* over the period 2003–2012. All variables used are defined in Table 1 and are winsorised at the lower and upper one percentiles. <sup>a, b, c, d</sup> indicate significance at the 0.01%, 1%, 5%, and 10% percent levels, respectively.

Variables										Sectorial Analysis			
	All firms			South Africa			Other Countries			BM	CG&S	H&T	IND
	MVE	TSR	Q	MVE	TSR	Q	MVE	TSR	Q				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)		
Constant	4.877 <sup>a</sup> (1.137)	4.991 <sup>a</sup> (0.698)	1.687 <sup>b</sup> (0.585)	3.792 <sup>b</sup> (1.190)	5.449 <sup>a</sup> (0.774)	1.667 (1.773)	4.521 (3.713)	5.182 <sup>b</sup> (1.675)	3.943 <sup>a</sup> (1.073)	-2.291 (1.450)	1.914 (1.396)	4.701 <sup>a</sup> (0.662)	
Crisis	-0.802 <sup>a</sup> (0.088)	-0.249 <sup>a</sup> (0.037)	-0.713 <sup>a</sup> (0.044)	-0.622 <sup>a</sup> (0.138)	-0.228 <sup>a</sup> (0.042)	-0.357 <sup>a</sup> (0.097)	-0.771 <sup>a</sup> (0.160)	-0.326 <sup>a</sup> (0.076)	-0.689 <sup>a</sup> (0.082)	-0.437 <sup>a</sup> (0.087)	-0.530 <sup>a</sup> (0.140)	-0.558 <sup>a</sup> (0.051)	
Crisis × ZL	1.136 <sup>a</sup> (0.228)	0.328 <sup>a</sup> (0.048)	0.384 <sup>d</sup> (0.197)	0.424 <sup>d</sup> (0.221)	0.258 <sup>a</sup> (0.044)	0.981 <sup>a</sup> (0.214)	1.543 <sup>a</sup> (0.329)	0.248 <sup>c</sup> (0.096)	1.697 <sup>a</sup> (0.236)	0.338 <sup>d</sup> (0.174)	-0.316 <sup>b</sup> (0.115)	0.527 <sup>a</sup> (0.135)	
ROA	1.627 <sup>a</sup> (0.177)	-0.489 <sup>a</sup> (0.098)	0.890 <sup>a</sup> (0.078)	1.610 <sup>a</sup> (0.184)	-0.423 <sup>a</sup> (0.098)	1.216 <sup>b</sup> (0.417)	1.400 (0.900)	-0.462 (0.339)	0.417 <sup>a</sup> (0.053)	2.238 <sup>a</sup> (0.331)	1.518 <sup>a</sup> (0.412)	0.994 <sup>a</sup> (0.214)	
SG	0.284 <sup>a</sup> (0.073)	0.120 <sup>c</sup> (0.050)	0.119 <sup>b</sup> (0.039)	0.302 <sup>a</sup> (0.077)	0.099 <sup>d</sup> (0.054)	0.214 <sup>d</sup> (0.115)	0.240 (0.223)	0.288 <sup>c</sup> (0.123)	0.207 <sup>b</sup> (0.068)	0.031 (0.123)	-0.148 (0.130)	0.152 <sup>b</sup> (0.050)	
Cash	1.599 <sup>a</sup> (0.308)	0.144 (0.134)	1.108 <sup>a</sup> (0.154)	1.910 <sup>a</sup> (0.326)	0.219 (0.150)	0.177 (0.353)	0.545 (0.724)	-0.061 (0.305)	1.365 <sup>a</sup> (0.198)	0.646 <sup>d</sup> (0.345)	0.562 <sup>d</sup> (0.299)	0.904 <sup>a</sup> (0.196)	
Size	-0.190 <sup>c</sup> (0.076)	-0.303 <sup>a</sup> (0.047)	-0.064 <sup>d</sup> (0.037)	-0.151 <sup>d</sup> (0.078)	-0.328 <sup>a</sup> (0.051)	-0.016 (0.127)	-0.172 (0.266)	-0.341 <sup>b</sup> (0.121)	-0.141 <sup>c</sup> (0.067)	0.240 <sup>c</sup> (0.097)	-0.057 (0.112)	-0.231 <sup>a</sup> (0.044)	
IndMedian	0.222 <sup>a</sup> (0.041)	-0.017 (0.046)	0.603 <sup>a</sup> (0.100)	0.468 <sup>a</sup> (0.098)	-0.040 (0.055)	0.092 <sup>c</sup> (0.045)	0.074 <sup>d</sup> (0.043)	-0.266 <sup>a</sup> (0.067)	0.153 <sup>b</sup> (0.059)	0.143 (0.096)	0.237 (0.239)	0.149 <sup>c</sup> (0.064)	
N Firms	4,669 901	4,669 901	3,647 647	3,647 647	3,647 647	1,022 254	1,022 254	1,022 254	1,367 261	1,333 259	377 71	1,592 310	
R <sup>2</sup>	0.26	0.15	0.36	0.31	0.20	0.17	0.13	0.14	0.41	0.30	0.37	0.40	