

# CORPORATE GOVERNANCE AND CREDIT FINANCING IN A DEVELOPING ECONOMY

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## Abstract

**How to cite this paper:** Mugova, S., & Sachs, P. R. (2017). Corporate governance and credit financing in a developing economy. *Corporate Ownership & Control*, 14(4-2), 341-349. <http://doi.org/10.22495/cocv14i4c2art1>

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**ISSN Online:** 1810-3057

**ISSN Print:** 1727-9232

**Received:** 03.02.2017

**Accepted:** 23.06.2017

**JEL Classification:** G30, G39, G19

**DOI:** 10.22495/cocv14i4c2art1

Emerging markets have common weaknesses in their financial market development. Financial development is one institutional force that shapes financing and governance of firms in emerging markets. Debt and equity are alternative governance instruments. Trade credit is part of debt and therefore should be treated as such in corporate governance. We used a fixed effect regression of financial sector development and trade credit of firms listed on the Johannesburg Stock Exchange to ascertain the relationship of financial sector development and trade credit. We also analyzed the Socially Responsible Index (SRI) which measures corporate governance. We find that good corporate governance practices do not result in substituting of trade credit, despite its high implicit costs, with bank loans for working capital financing.

**Keywords:** Corporate Governance, Trade Credit, Financial Sector Development, Implicit Cost

## 1. INTRODUCTION

Corporate governance systems are a core element in the stability and sustainability of any business organization. Among other things, governance systems ensure that minority shareholders receive reliable information about the value of a firm, that company managers and majority shareholders do not short-change minority shareholders and that company managers are motivated to maximize the firm's value instead of pursuing personal objectives (Bushman and Smith, 2003).

To accomplish these goals, the company must report information that is objective and unbiased to all investors and company stakeholders. Corporate transparency and disclosure are critical for the functioning of an efficient capital market. Firms furnish disclosure through standardized financial reports, including the financial statements (Healy and Palepu, 2001).

Management accountability is required to ensure efficient use of the firm's capital and avoid wastage. Managers are shareholders' agents. Therefore, corporate governance also ensures that managers act in the best interests of all stakeholders. Hart (1995) argued that corporate governance problems emerge when this accountability breaks down, such as wherever contracts are deficient and agency problems obtain.

The cost of capital is a weighted average of the cost of debt and cost of equity for a firm. The cost of capital is also influenced by the level of financial sector development. Countries with less developed

financial sectors are expected to have high cost of capital since markets are inefficient.

Trade credit provides a governance mechanism by suppliers for firms. Petersen and Rajan (1997) stated that suppliers have an advantage over traditional lenders in investigating the credit worthiness of their clients, as well as a better ability to monitor and force repayment of the credit. It is typically less profitable for an opportunistic borrower to divert inputs than to divert cash (Burkart and Ellingsen, 2004). The supplier will likely visit the buyer's premises more often than financial institutions would. The size and timing of the buyer's orders also give him an idea of the condition of the buyer's business (Petersen and Rajan, 1997). If the buyer defaults, the supplier can seize the goods that are supplied. The comparison of trade credit and finance from banks discussed above raise the question of whether trade credit is a preferred governance structure to bank loans.

Financial accounting provides financiers with a primary source of independently verified information about the performance of managers (Sloan, 2001). Banks require financial accounts from companies when lending; shareholders also rely on the financial reporting by managers. Banking companies engage in corporate governance disclosure. Sharma (2014) states that disclosure enables investors to avoid operational risk by ensuring a framework of transparency. Disclosure statements link corporate governance and financial accounting.

There is a further link between financial accounting and capital markets. Debt and equity are not mainly treated as alternative financial instruments, but rather as alternative governance structures (Williamson, 1988). Banks play an important role in corporate governance, as they are direct investors themselves or act as agents of other investors (Claessens, 2006). One aspect of corporate governance study is to understand the mechanisms that have evolved to address problems created by the split between the management and financing of business entities (Sloan, 2001). Good corporate governance is generally a strong value-addition fundamental for firms, for markets, and for countries. It is associated with a lower cost of capital, higher returns on equity, greater efficiency, and more favorable treatment of all stakeholders, although the direction of causality is not always clear (Claessens, 2006).

Financial market advancement lags in emerging market economies. Companies have low access to external capital, debt or equity (Fan et al., 2011). External investors such as banks and new shareholders assess the corporate governance structures of a firm before making a decision to invest. Corporate governance practices have a direct effect on both investment and access to capital. It is well established that poor corporate governance practices may lead to failure to access bank loans, raise equity capital or result in the issuance of bonds with low market uptake. Previous literature, however, has not extensively discussed the relationship between governance and banking sector development. This paper focuses on two short term financing sources: bank loan and trade credit, and investigates whether the choice between these two sources is influenced by corporate governance practices.

Kwenda and Holden (2013) posit that to use resources efficiently and sustainably, firms should employ the cheapest financial resources between trade credit and bank credit. Among the firms listed in the Johannesburg Stock Exchange (JSE), it is evident that firms use either trade credit or bank credit or a mixture of both. Despite the considerable financial sector development in South Africa most firms still employ trade credit which has high implicit costs compared to bank loans.

Commonly used trade credit terms implicitly define a high interest rate that operates as an efficient screening device where information about buyer default risk is asymmetrically held (Smith, 1987). High implicit interest (or penalty) rates that accompany trade credit facilitate the sorting of low from high default risk buyers (Smith 1987). If a buyer does not take cash discounts, purchases the goods and pays late (e.g., at the end of thirty days), the buyer has implicitly borrowed at a higher rate defined by the trade credit terms. Such action indicates that lower cost third-party financing such as a bank loan was not available to the buyer. Despite the development of the financial sector and the increased access to finance, firms in the formal sector in South Africa still employ significant trade credit. Kwenda and Holden (2013) report that approximately half of the current assets are financed by trade credit.

Financial development is broadly defined by Graff (2003) as an increase in the size, quality and performance of financial intermediary services crucial for long-term economic growth. Chen et al. (2009) found that firm-level corporate governance

has a significant negative effect on the cost of equity capital in emerging markets and that the impact of corporate governance was more pronounced in countries whose institutions provide comparatively poor legal protection.

Emerging markets are characterized by deficiencies in their financial market development (Fan et al., 2011). Financial development in emerging markets is also restricted by weak legal systems for safeguarding investors' rights (La Porta et al., 2000). Financial development, particularly in terms of capital market regulation and efficiency, forces companies to develop their corporate governance structures so that they can access funding.

Access to external finance differs amongst firms. Petersen and Rajan (1997) examined small firms whose access to financial markets may be limited, mainly because they are not able to meet the bank loan requirements. They found evidence suggesting that firms use more trade credit when credit from financial institutions is unavailable, but banks are the most dominant institutions for corporate financing. Fisman and Love (2003) found that firms in countries with less developed financial markets appear to substitute bank loans with trade credit provided by their suppliers in order to finance growth. La Porta et al. (2000) suggest that there is a common element to the explanations of this discrepancy, namely how well investors, both shareholders and creditors are protected by law from expropriation by the managers and controlling shareholders of firms. Do good corporate governance practices result in improved access to bank finance which consequently result in substituting high cost trade credit with lower cost bank loans in working capital financing? This question is the focus of the present study.

This paper is structured into seven sections: Introduction, Literature review, Overview of South African financial sector, Methodology and data sources, Descriptives of data, Results and analysis, and Conclusion.

## 2. LITERATURE REVIEW

Trade credit literature states that bank loans and trade credit are substitutes for each other (Burkart and Ellingsen, 2004). The underlying assumption of this relationship is that access to bank loans for financial sector development facilitates firms' ability to move from trade credit financing to bank financing. Ge and Qiu (2007) state that in a country with a poorly developed formal financial sector, firms can support their growth through trade credit. They further highlight that where formal financial sector is available there should be a reduction in reliance on trade credit. Nilsen (1999) argues that firms ordinarily avoid the unappealing and expensive trade credit finance as a loan substitute.

### 2.1. Corporate Governance Differences in Developed and Emerging Economies

Corporate governance is concerned with ensuring that firms are run in such a way that society's resources are used efficiently (Allen, 2005). Young et al. (2008) state that instead of traditional principal-agent conflicts espoused in most research dealing with developed economies, principal-principal conflicts have been identified as a major concern of corporate governance in emerging economies.

Within emerging economies these principal-principal conflicts between controlling shareholders and minority shareholders result from concentrated ownership, extensive family ownership and control, business group structures, and weak legal protection of minority shareholders Young et al. (2008).

In many developing economies, the issue of bank corporate governance is complicated by extensive political interference in the operation of the banking system (Arun and Turner, 2004). They further note that government ownership of banks is a common phenomenon. The inefficiencies associated with government-owned banks, especially those originating from a lack of satisfactory managerial incentives, have led developing economy governments to begin divesting their ownership stakes (Arun and Turner, 2004). The efficiency of capital allocation is negatively correlated with the extent of state ownership in the economy, positively correlated with the amount of firm specific information in domestic stock returns, and positively correlated with the legal protection of minority investors (Wurgler, 2000).

Berglof and Pajuste (2003) in a study focused on eastern and central Europe show that given continued concentration of ownership and control, regulatory intervention should focus on eliminating outright fraud while maintaining the incentives for entrepreneurship and large shareholder monitoring. In developed economies, the separation between ownership and control are legal mechanisms to protect owners' interests. Consequently, principal-agent governance conflicts receive the most research attention (Young et al., 2008). Claessens and Fan (2002) study on corporate governance issues in Asia confirms that the lack of safeguards for minority rights has been the major challenge in improving corporate governance. A study of Asian crises, by Johnson et al. (2000) found that measures of corporate governance, particularly the effectiveness of protection for minority shareholders, explain the extent of depreciation and stock market decline better than do standard macroeconomic measures.

## 2.2. Corporate governance and financial sector development

Disclosure plays a crucial role in contemporary capital markets. Healy and Palepu (2001) state that information and incentive problems impede the efficient allocation of resources in a capital market economy. Good corporate governance emphasizes that firms should be run in the interests of shareholders. Allen (2005) states that this goal is an applicable objective function when markets are perfect and complete. In many emerging economies this is not the case; markets are imperfect and undeveloped. Imperfect capital markets in emerging economies also mean that there is high cost of capital and some resources are lost through inefficiencies.

Corporate governance mechanisms for banks should cover depositors as well as shareholders. Even if the government provides deposit insurance, bank managers still have an allurements to opportunistically increase their risk-taking, but at the government's expense (Arun and Turner, 2004). The analysis of Bai et al. (2004) indicates that investors pay a significant premium for well-governed firms in China, benefiting firms that

improve their governance mechanisms. Emerging economies need to generate policies that compensate for the weaknesses of capital market.

A developed financial sector is expected to be information efficient because the challenge for any economy is the optimal allocation of savings to investment opportunities. Corporate governance affects growth and development through increased access to external finance, better operational performance, reduced risk of financial crises and better relationships with stakeholder (Claessens, 2006). Good corporate governance helps to increase share price and makes it easier to obtain capital (McGee, 2009). Ideally, share prices incorporate all the publicly available information. The emerging economies are likely to have information access and distribution problems. Problems arise from information differences and conflicting incentives between entrepreneurs and savers (Healy and Palepu, 2001). Corporate governance deals with the ways in which suppliers of finance assure themselves of getting a return on their investment. For instance, the principal reason that investors provide external financing to firms is that they receive control rights in exchange and for this they need legal protection (Shleifer and Vishny, 1997).

## 2.3. Access to Capital and Trade Credit

A study in China by Du et al. (2012) shows that a country with a poorly developed financial sector can support its growth through non-financial channels such as trade credit [see also Ge and Qiu (2007)]. Amongst Ghanaian firms, Abor (2007) notes a connection between high debt policy and a larger board size; and between high debt policy and a higher percentage of outside and non-executive directors and CEO duality. These relationships show that corporate governance affects access to external capital. In order to access more debt instruments, firms may have to increase their board size.

The most basic prediction of the legal approach is that investor protection encourages the development of financial markets (La Porta et al., 2000). When investors are protected, they pay more for securities, making it more attractive for entrepreneurs to issue these securities. Doidge et al. (2007) report that country characteristics, such as legal protections for minority investors and the level of economic and financial development, influence firms' costs and benefits in implementing measures to improve their own governance and transparency.

Ferrando and Mulier (2012) state that trade credit is an alternative source to finance production. Cunat (2007) argues that some firms may fund their operations with trade credit when other types of finance are not readily available. It follows that a firm's inability to acquire bank loans may be countered by using trade credit to finance working capital.

Moreover, banks demand a higher level of corporate governance practices from firms than do trading partners, which is a further disincentive for firms to seek bank credit as a source for working capital. Fisman and Love (2003) found evidence that industries that use more trade credit grow relatively fast in countries with poorly developed financial markets. The cost differential between trade credit and bank loans, with the former associated with

high implicit costs would therefore imply that firms in countries in financially developed countries use less of trade credit compared to bank loans to finance working capital.

## 2.4. Why Firms Use Trade Credit

Nilsen (1999) states that firms use trade credit as a transaction motive and as a finance motive. The transactions motive argues that trade credit provides the customer a cost savings through delayed cash use. The finance motive for trade credit gives customers the ability to purchase inputs without putting cash up front. Nilsen (1999) further argues that trade credit, despite its benefit, is a highly unattractive substitute for bank loans because it is tied to the purchase of goods, high implicit cost, while loans may be unrestricted.

The fact that trade credit is still used in countries with advanced financial sector development implies that there are still some unknown factors which influence its use. A study by Ashbaugh-Skaife et al. (2006) provides insights into the characteristics of governance that are likely to affect the cost of debt financing. Corporate governance and corporate finance are intricately linked by the cost of capital effect. Despite the link between corporate governance and cost of capital, there is no adequate literature linking corporate governance to financial sector development. As noted, the finance motive theory according to Nilsen (1999) predicts that firms ordinarily avoid the unattractive and expensive financing in the form of trade credit as bank loan substitute. The results of a study by DeLoof and La Rocca (2014) in Italy suggest that for small- and medium-sized enterprises (SMEs) trade credit complements the formal finance operations.

Previous literature does not consider corporate governance as a factor affecting a firm's access to bank loans. The presence of the Socially Responsible Investment (SRI) index at the Johannesburg Stock Exchange gives a unique opportunity to test whether corporate governance influences a firm's choice of using trade credit over bank loans financing for working capital. South Africa is one of the emerging economies with a well-developed financial sector. As noted earlier, Kwenda and Holden (2013) found that companies on the Johannesburg Stock Exchange employed considerable amounts of trade credit as a source of short term finance.

The comparison of SRI Index constituent firms and firms who are non-constituents of the SRI index gives a unique test of the relationship between use of trade credit and good corporate governance. Financial sector development proxies for the economy for South Africa were used and corporate governance acted as a factor affecting an individual firm's access to capital and the dependent variable being trade credit.

## 3. SOUTH AFRICA'S FINANCIAL SECTOR

South Africa's financial services sector is backed by a sound regulatory and legal framework. It is very

sophisticated, boasting dozens of domestic and foreign institutions providing a full range of services commercial, retail and merchant banking, mortgage lending, insurance and investment. The South African banking system is well developed and effectively regulated by the central bank: the South African Reserve Bank. The South African banking industry is currently made up of 17 registered banks, 2 mutual banks, 14 local branches of foreign banks, 2 cooperative banks and 43 foreign banks with approved local representative offices (Matoti, 2014). The SA banking sector was ranked 3rd out of 148 countries in the 2013/14 World Economic Forum Global Competitiveness Survey according to the Banking Association of South Africa.

The most important financial institutions in South Africa are its banks and its stock markets. Their assets amounted to 109 per cent and 187 per cent of the GDP respectively by the end of 2004 (International Monetary Fund, 2005). The contribution of the financial sector to the South African GDP has grown steadily over the years and continues to increase. The banking sector contributes an estimated 35 per cent of the country's value added (Hawkins, 2004).

At the apex of the banking system is the South African Reserve Bank, which is, *inter alia*, the primary monetary authority and custodian of the country's gold and foreign exchange reserves. The primary functions of the Reserve Bank are to protect the value of the national currency, the rand, and to control inflation. The banking sector is highly concentrated, with no government ownership. Between 1993 and 2002, the financial services sector grew nearly twice as fast, at an average of 4.5 per cent per year. The financial services sector has been relatively buoyant since 1996, outgrowing the rest of the economy each year (apart from 2002) and proving to be a source of growth for the economy overall (Akinboade and Kinfaek, 2015).

The South African banking industry currently boasts 77 banks which is comprised of local banks, foreign banks, mutual banks and a post bank (Odhiambo, 2014). Investment and merchant banking remain the most competitive in the industry, while the country's big five banks (*i.e.* ABSA, FNB, Standard Bank, Nedbank and Capitec) dominate the retail banking market.

The Johannesburg Stock Exchange (JSE) is in the seventeenth largest stock exchange worldwide, the sixth largest among emerging markets and the largest within the African continent. It has over 400 listed companies, over 900 securities and a market capitalization of over 900 billion US dollars in 2013 (Hawkins, 2004, Hassan, 2013, Phiri, 2015). At the end of 2005 the JSE was the 16th largest exchange in world and is considered a sophisticated international market at par with the other leading emerging markets, such as Brazil or Malaysia (Moss et al., 2007). The JSE connects buyers and sellers in a variety of financial markets: equities, financial derivatives, commodity derivatives, currency derivatives and interest rate instruments. The JSE is licensed to operate under the Financial Markets Act, 19 of 2012, and is the largest African exchange by market capitalisation and value traded (Johannesburg Stock Exchange, 2013).

#### 4. METHODOLOGY AND DATA SOURCES

Published financial statements of 238 JSE listed firms downloaded from Bloomberg provided data for trade receivables and payables period 2001-2013. The JSE (2015) launched the Social Responsible Investment Index (SRI) Index in South Africa in May 2004 to identify those companies listed on the JSE that integrate the principles of the triple bottom line and good governance into their business activities. The Index philosophy is founded on the principles of the three pillars of the triple bottom line, namely environmental, social and economic sustainability, with good corporate governance underpinning each. Therefore, the sustainability index in South Africa for JSE listed firms can be adopted as a measure of good corporate governance as well. The requirements for listing on the JSE SRI Index are also comprised of good governance principles.

The World Bank (2014) maintains the Global Financial Development Database an extensive dataset of financial system characteristics for 203 economies. The database includes measures of size of financial institutions and markets, degree to which individuals can and do use financial services, efficiency of financial intermediaries and markets in intermediating resources and facilitating financial transactions, and stability of financial institutions and markets.

The study tests the hypothesis that financial sector development leads to reduced trade credit use by firms because of the availability of alternatives such as bank credit. The use of resources sustainably due to good corporate governance, as it is associated with using resources sustainably, is also hypothesized to lead firms to choose the cheapest source of credit, trade or bank.

A regression analysis was carried out with financial sector variables being independent variables. To decide between fixed or random effects a Hausman test was run with the null hypothesis being that the preferred model is random effects rather than the fixed effects (Torres-Reyna, 2007). The Hausman test identifies whether the unique errors ( $u_i$ ) are correlated with the regressors. The null hypothesis for this test is that there is no correlation between unique errors and regressors.

Fixed-effects (FE) are used because of the interest in analyzing the impact of variables that vary over time. Fixed effects explore the relationship

between predictor and outcome variables within a country and firms. The assumption is that something within the individual firms may impact or bias the predictor or outcome variables and this must be controlled. There is correlation between firms' error term and predictor variables of financial sector development. Therefore, a fixed effect model is required for dealing with this type of endogeneity. The fixed effect model removes the effect of those time-invariant characteristics so we can assess the net effect of the predictors on the outcome variable (trade credit). Time-invariant characteristics are unique to the individual and should not be correlated with other individual characteristics, as each entity is different therefore the entity's error term and the constant should not be correlated with the others (Torres-Reyna, 2007).

We also selected companies listed on the JSE (Social Responsible Index) index and those not listed on the SRI index and compared their trade credit use. 21 SRI Index constituent firms and 21 non-listed SRI firms which were consistent over the period were selected. The SRI Index is reviewed yearly and some firms are added and dropped from the index. Firms that were consistently part of SRI Index for the entire period were chosen for inclusion in this study. The 21 non-listed SRI firms were selected through purposive sampling from other sectors other than the financial sector namely industrial goods, consumer goods, consumer services, telecommunications, health, basic resources, technology, oil and gas and utilities.

Financial institutions were deliberately left out of the samples, mainly because they provide finance to non-financial firms and their impact is reflected in the financial sector development variables. The concept of working capital does not apply to banks since financial institutions do not have typical current assets and liabilities such as inventories and accounts payable.

#### 5. DESCRIPTIVES

The section describes the extent of trade credit use in South Africa, by giving short summaries of the mean ratios used to measure trade credit. South African mean percentages are also compared with other BRICS economy to provide further context for understanding the data.

$$TR/CA = \frac{\text{Trade receivables}}{\text{Current assets}}$$

$$TP/CL = \frac{\text{Trade payables}}{\text{Current liabilities}}$$

$$TR/TA = \frac{\text{Trade receivables}}{\text{Total assets}}$$

$$TP/TA = \frac{\text{Trade payables}}{\text{Total assets}} \quad (1)$$

$$\text{Trade credit} = (TR/CA + TP/CL) / 2$$

TPCL was calculated to get the percentage of working capital financed by trade payables whilst

TRCA gives the percentage of trade receivables to total current assets.

**Table 1.** BRICS countries mean trade credit

		TRCA	TPCL	TRTA	TPTA	Trade credit
BRAZIL	Mean	0,3437	0,2475	0,1322	0,0846	0,2977
CHINA	Mean	0,2511	0,2795	0,1532	0,0987	0,2653
INDIA	Mean	0,3074	0,3621	0,1648	0,1246	0,3354
RUSSIA	Mean	0,2293	0,2630	0,0855	0,0940	0,2462
SOUTH AFRICA	Mean	0,3103	0,4252	0,1588	0,1443	0,3721

Source: Own construct based on published financial statements 2001-2013 data

In South Africa TRCA averages 31.03% and TPCL averages 42.52% (see Table 1) which is considerably high compared to other BRICS countries. Trade credit is heavily used in South Africa to finance working capital despite its higher level of financial sector development compared to other emerging economies such as Brazil, India and

Russia. Trade credit is also used to finance at a comparatively high percentage of total assets. TRTA averages 15.88% and TPTA averages 14.43%. Thus, despite the level of financial sector development in South Africa, the country ranks top in overall trade credit use at 37.21% amongst other BRICS economies.

**Table 2.** South Africa trade credit use

SOUTH AFRICA	TRCA	TPCL	TRTA	TPTA	Trade credit	Net trade credit
2001	0.3676	0.5266	0.1953	0.1971	0.4573	-0.0018
2002	0.3547	0.5217	0.1868	0.1984	0.4420	-0.0116
2003	0.3191	0.4580	0.1718	0.1718	0.3983	0.0000
2004	0.3169	0.4189	0.1676	0.1575	0.3725	0.0101
2005	0.3282	0.4736	0.1776	0.1663	0.4064	0.0114
2006	0.3313	0.4619	0.1815	0.1608	0.4018	0.0207
2007	0.3302	0.4301	0.1731	0.1418	0.3850	0.0313
2008	0.3068	0.3958	0.1565	0.1316	0.3561	0.0249
2009	0.2916	0.3797	0.1435	0.1161	0.3394	0.0274
2010	0.2931	0.3857	0.1419	0.1188	0.3409	0.0230
2011	0.2789	0.3954	0.1311	0.1223	0.3384	0.0087
2012	0.2746	0.3733	0.1309	0.1146	0.3279	0.0163
2013	0.2792	0.3861	0.1343	0.1209	0.3362	0.0135
<b>Total</b>	0.3103	0.4252	0.1588	0.1443	0.3721	0.0134

Source: Own construct based on data from financial statements 2001-2013

Net trade credit is the investment by firms in trade credit and is calculated by TRTA - TPTA. Net trade credit is positive for South Africa from 2003

to 2013 (see Table 2) implying South African listed firms are net investors in trade credit.

**Table 3.** Trade credit of Socially Responsible Investment Index listed Firms and Non-listed firms

	Mean TP/CL	Mean TP/CL
Year	Socially Responsible Investment Index listed Firms	Socially Responsible Investment Index Non-listed Firms
2007	0.56	0.68
2008	0.57	0.71
2009	0.68	1.03
2010	0.68	0.63
2011	0.75	0.61
2012	0.72	0.59
2013	0.72	0.59
<b>Total</b>	0.67	0.69

Source: Own construct based on data from financial statements 2007-2013

There is a reliance on trade credit to finance working capital by both SRI listed and non-SRI listed firms. Specifically, 67% of current liabilities are financed by trade payables amongst SRI listed firms whilst 69% of current liabilities amongst non-SRI listed firms is financed by trade payables (See Table 3).

## 6. RESULTS AND ANALYSIS

To decide between fixed or random effects we can run a Hausman test. Fixed-effects are used whenever we are only interested in analyzing the impact of variables that vary over time. Fixed effect explore the relationship between predictor and outcome variables within an entity because each entity has its own individual characteristics that may or may not

influence the predictor variables. The rationale behind random effects model is that, unlike the fixed effects model, the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. If the differences across entities have some influence on the dependent variable, the random effects are appropriate. The independent variables are bank credit to bank deposits, bank deposits to GDP, bank concentration and domestic credit to private sector to GDP which are all measures banking sector development whilst the dependent variable is trade credit.

As noted earlier the Hausman test was conducted to choose between fixed effect and random effect model to understand the data. The null hypothesis is that random effect model is appropriate. The obtained result of  $p = 0.000$  leads

to rejection of the null hypothesis and to conclude fixed effect model is appropriate.

**Table 4.** Hausman test results

Variable	Coefficients		
	re	fe	difference
BC/BD	0.0025	0.0024	0.0001
BD/GDP	-0.0047	-0.0047	0.0000
BC	-0.0005	-0.0005	0.0000
DCPS/GDP	0.0003	0.0003	0.0000
Prob>chi2 = 0.0000			

Note: BC/BD is Bank Credit to Bank Deposits;  
BD/GDP is Bank Deposits to GDP;  
BC is the Bank Concentration;  
DCPS/GDP is domestic credit to private sector to GDP.

**Table 5.** Regression results

	Trade credit
Bank credit to bank deposits	0.00250*** (5.72)
Bank deposits to GDP	-0.00468*** (-5.34)
Bank concentration	-0.000488*** (-3.51)
Domestic credit to private sector to GDP	0.000310 (0.82)
_cons	0.334*** (4.37)
N	2480

Note: t statistics in parentheses  
\* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Through the F test  $P=0.000$ , we reject the null hypotheses which means the model is statistically significant at 99% level of confidence. That is, the model has explanatory power of the dependent variable trade credit, BC/BD, BD/GDP, BC and DCPS/GDP are determinants of trade credit. Banking sector development has an effect of increasing trade receivables. As firms get access to bank credit they will also redistribute finance through trade receivables to their credit constrained trading counterparts.

This finding is not consistent with the expected hypothesis that firms will reduce the use trade credit as the financial sector develops. Trade credit is a form of financial intermediary between firms which appears to be increased by development of the financial sector. Nevertheless, despite the implicit costs of trade credit firms do not appear to substitute trade payables with bank credit as the banking sector develops.

The t test was significant for all coefficients and the constant  $P=0.0000$ . The null hypothesis is that the variable = zero. Based on this result, we reject the null hypothesis and conclude that financial sector development does have a significant impact on trade credit. We are confident at 99% level that BC/BD, BD/GDP, BC and DCPS/GDP do not equal zero and that financial sector development has a significant effect on use of trade credit.

Banking sector development has an effect on firm's trade credit use. An increase bank credit because of banking sector development will have a positive effect on use of trade credit. Banking sector development increases bank credit and trade credit use by firms.

All non-financial listed firms on JSE heavily rely

on trade credit to finance the working capital despite the level of banking sector development in South Africa. Further investigation of SRI firms and SRI non constituent firms shows both groups also heavily rely on trade credit despite the differences in corporate governance.

## 7. CONCLUSION

In working capital financing, good corporate governance practices do not result in substituting high cost trade credit with bank loans because of the high implicit costs associated with trade credit. The findings are contrary to the expectation that good corporate governance should lead to resources being used efficiently and sustainably by reducing costly trade credit and substituting it with cheaper bank credit. Good corporate governance practices result in improved access to bank credit. However, firms did not substitute high cost trade credit with lower cost bank credit.

In seeking to understand this finding, it is noted that firms may prefer trade credit because it has fewer regulations. The cost of negotiating bank credit and the uncertain outcome offsets its merits.

Trade credit also happens in normal course of business as a firm delays paying creditors and collecting debts. Trade credit may therefore not be a deliberate decision by firms but rather a default.

Moreover, trade credit can also be a marketing tool, to promote or increase demand for certain products. Suppliers know and understand their trading partners better than do banks therefore they easily grant trade credit. The signaling theory of trade credit states that banks offer bank credit to firms that are financed by trade credit. Therefore, firms may use trade credit to improve their bank credit access.

Another possible explanation for continued use of trade credit is a mutual relationship between trading partners. We found that financial sector development impacts trade credit use amongst South African listed firms. The ratio of bank credit to bank deposits, bank deposits to GDP and bank deposits to bank concentration all were found to have an impact on trade credit use. The ratio of domestic credit to private sector, however, was not found to have an impact on trade credit use.

Moreover, the preference of trade credit despite the availability of bank loans may be due to suppliers being preferred over banks as governance structures. Though financial sector development has an effect on trade credit, firms do not substitute expensive trade credit with bank credit. Assuming the redistribution view of bank loans is valid, a firm that offers trade credit also demands trade credit from their trading partners in exchange.

The present study, and therefore the generalizations that may be drawn from it, is limited by its reliance on data from published financial statements whose quality may vary. Although such published financial statements are standardised by Bloomberg, the standardisation is not uniformly consistent. The study uses sustainability index in South Africa for JSE listed as a measure of good corporate governance. The reliability of this measure depends on the criteria for inclusion which may have their own weaknesses. For example, it should be noted that the SRI Index measures other

aspects of business operations which are not necessarily aspects of corporate governance.

The study's findings are also limited by the time frame for investigation. It is conceivable that the findings reported here are an artifact of the particular period of time from which financial results were examined. During another period of time, such as one of greater economic expansion or contraction, or during a period of greater or lesser political uncertainty within South Africa, firms may have demonstrated different actions in terms of their use of trade credit or bank credit. Therefore, a longitudinal study of the effects reported here would be a valuable focus for future study. Moreover, a comparison between South Africa and other developing economies may provide more perspective on the factors that influence the relationship between governance and credit financing.

Corporate governance involves multiple activities and multiple stakeholders. Some aspects of governance may have greater impact on credit financing than others. For example, the characteristics of the firm's board of directors and the tenure of their directorship may lead a firm to choose one type of financing over another. This element is perhaps particularly relevant in developing economies where past government officials often serve as directors of larger companies. In such a position, these officials may have an impact on the firm's operations which is not captured through broader measures of social responsibility.

Overall, the relationship of corporate governance in these mutual relationships which promote trade credit deserves further investigation. Such investigation could focus on identifying whether there are other factors, not visible to the current researchers, which can influence the choice of financing option apart from good corporate governance practices and mutual relationships between trading partners. Given the continued growth in interconnection across world businesses and suppliers and the plethora of data available to access, it is important to understand the factors that may affect how businesses use credit to sustain their operations.

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