

Capital Structure and Financial Performance of Retail Firms: Empirical Evidence from South Africa

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Abstract: Capital structure has been a subject of debate for a number of decades. Extant studies have tried to test the various theories of capital structure. The most notable theories are the Modigliani and Miller capital structure irrelevance propositions; the trade-off, and the pecking order theories. Therefore, due to inconclusive findings in earlier studies this paper attempted to determine the relationship between capital structure and financial performance within the retail industry in South Africa. The wholesale and retail sector accounts for a large portion of South Africa's Gross Domestic Product, which signifies that the retail sector is worth exploring in order to obtain an overview of their capital structure and financial performance. This study employed as sample of 18 South African firms in the wholesale and retail sector listed on the Johannesburg Securities Exchange. The data was extracted for a ten-year period ranging from 2010 to 2019. Panel data econometric techniques were used to conduct the analysis. The study found a negative relationship between capital structure and financial performance of South African retail firms. The findings were consistent with the pecking order theory that predicted a negative relationship between debt and financial performance. Therefore, it can be inferred that the profitability of retail firms in South Africa is not a function of how much debt firms have accumulated. The current debt levels in this sector negatively influenced financial performance. This finding was in alignment with the pecking order theory of financing behaviour as opposed to the trade-off theory of financing behaviour.

Keywords: Capital structure; financial performance; retail sector; South Africa

JEL Classification: G01; G110

1. Introduction

South Africa's economic sector is sophisticated and provides a full range of services from finance to manufacturing (Young, 2010, p. 136). In earlier years, South Africa's economy was heavily reliant on the primary sectors, but in the 90s, due to the decline in primary sector outputs, the tertiary sector experienced positive economic growth (Du Plessis & Smit, 2006, p. 6). Wholesale and retail are categorised as tertiary sectors and account for 15% of South Africa's GDP

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(Statistics SA, 2018). South Africa, in comparison to other African countries, shows a great deal of economic growth and development. Retail firms play a large role in the economy of a country and have a significant impact on the environment, and it is worth examining the governance of these firms (Correia, Flynn, Uliana, Wormald & Dillon, 2015, pp. 1-27). Additionally, because the trade sector accounts for a huge part of GDP, it is worth analysing their capital structure policies

Capital structure has been a subject of debate for a number of decades. Extensive research explaining the importance of capital structure decisions to enhancing firm value can also be found. For instance, Harris and Raviv (1991, p. 350) have delved into the various theories of capital structure, and what constitutes as the possible optimal capital structure. They have concluded that stock prices increase as leverage changes. Ogbulu and Emeni (2012, p. 256) have explored capital structure and firm value using evidence from Ghana, and have found that there is a relationship between capital structure and the value of a firm. Ayeni and Olaoye (2015, p. 635) have also analysed theoretical, empirical and conceptual research and have affirmed that the optimal capital structure does have an effect on firm value. Capital structure is thus an extensive theoretical concept and can be measured differently, as the studies above conclude. Delving into the definition, Correia et al (2015, pp. 14-22) have described capital structure as the way in which a firm finances itself using debt (long or short term) and equity (common stock, preference shares and retained earnings) financing options. Over the years, many theories have been advanced to describe what constitutes the optimal capital structure. The most notable theories are the Modigliani and Miller capital structure irrelevance propositions; the trade-off theory, pecking order theory and agency cost theory.

Against this backdrop this article attempts to examine the relationship between capital structure and financial performance in retail firms in South Africa.

2. Review of Related Literature

2.1. Theoretical Literature Review

2.1.1. Outline of Capital Structure Theory

Myers (1984, p. 575) describes the capital structure puzzle by asking important questions “How do firms choose their capital structures?” and “What should corporations do about dividend policy?” The capital structure puzzle is slightly tougher than the dividend puzzle because there are several dividend models that are used such as the Walter’s model, Gordon’s model and the Modigliani and Miller hypothesis. In contrast, there is less information regarding capital structure, as the

capital structure of firms is determined by the interplay of a number of factors. It is difficult to determine an optimal capital structure because it is not known how firms choose their debt or equity. Myers (1984, p. 575) maintains that corporate financing behaviour of firms are unpredictable. Managers and stockholders could consider models that are beneficial for them and not base financial decisions on existing evidence or strategies.

Myers (1984, p. 576) explains two ways of thinking about capital structure. The first framework is called the static trade-off framework, where the firm sets a target debt-to-value ratio and gradually works towards it similar to how a firm adjusts dividends to achieve their target pay-out ratio. The second framework is called the pecking order framework, where a firm prefers internal financing before considering external financing and prefers debt to equity with no targeted debt-to-value ratio.

The static trade-off hypothesises that the firm's optimal debt ratio is determined by trade-off between the costs and benefits of borrowing, where assets remain constant. If a firm finance itself through equity, there is a tax shield, but essentially a firm is supposed to substitute debt for equity and equity for debt until the firm value is maximised, which is thus called the debt-equity trade-off.

The optimum capital structure is where the value of the firm is maximised at the trade-off between the tax shield and the financial distress costs.

The pecking order framework, in contrast, finances based on a pecking order. A firm will first use internal finance, secondly, change their dividend pay-out ratios and lastly use external financing, debt, such as bonds and securities.

There are two schools of thought on capital structure theory. The first school argues the irrelevance of capital structure. More specifically, Modigliani and Miller (1958, p. 270) argued that capital structure is an irrelevant factor in determining the value of the firm. The Modigliani and Miller (1958, p. 271) approach is the foundational theory regarding capital structure. The second school which was advanced by Titman and Wessels (1988, p. 2), who argued that cost of capital determines the composition of capital structure, and that the optimal capital structure is where the WACC (weighted average cost of capital), advanced by Miles and Ezzell (1980, p. 720), is at the lowest level. Accordingly, the overall capital structure (debt to equity ratio) contributes to the value of the firm (Datta, Chowdhury & Mohajan, 2013, p. 2).

2.1.1.1. MM Theory

Modigliani and Miller (1958, p. 271) argued that capital structure is an irrelevant factor in determining the value of the firm and theorists view this as the traditional view on capital structure theory. This approach, however, is subject to certain assumptions: namely, that no taxes; no transaction costs; no agency costs; and no

costs associated with financial distress are to be factored in when assessing a firm's performance. It assumes that firms and investors can borrow on the same terms. A fundamental principle of the Modigliani and Miller approach is that the value of a firm is determined by its assets and not in the manner in which it is financed (Correia, et al; 2015, pp. 14-18). Furthermore, the theory states that a firm should finance its assets through debt and equity; and choose the optimal combination of debt and equity that will maximise the value of a firm. The optimal capital structure is where weighted cost of capital (WACC) is at its lowest and the value of a firm is maximised.

As the cost of debt rises, so does the cost of equity, and in turn, the value of a firm decreases. The higher the debt levels of a firm the more financial risk there is, which leads to shareholders requiring greater rates of return. Therefore, the cost of equity increases. In addition, the traditional theory states that the interest of debt remain constant and the rate of equity can remain constant or increase gradually (Atrill, 2009, p. 343).

Modigliani and Miller (1963, p. 433) elaborated on their theory, including the assumptions, and contended that the value of a leveraged firm (debt and equity mixed ratio) is equivalent to an unleveraged firm (a firm wholly financed by equity) if the operating profits and future prospects are the same.

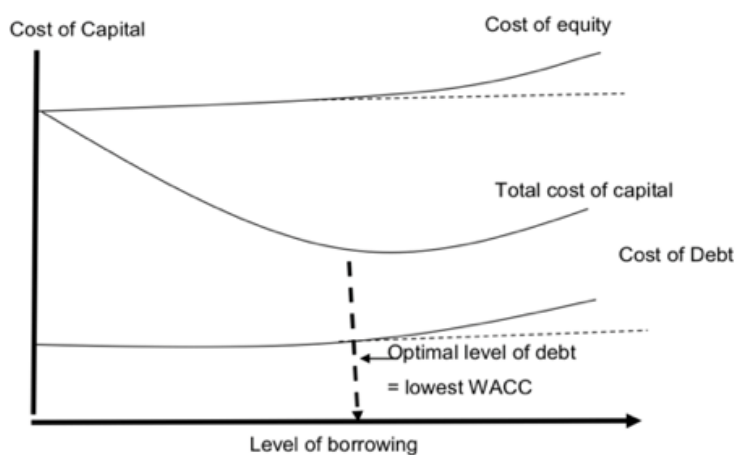


Figure 1. Capital Structure: Traditional View

Source: Atrill (2009, p. 343)

Modigliani and Miller (1963, p. 433) further developed the model to include the effect of taxes to bring the theory closer to reality (Ahmeti & Prenaj, 2016, p. 916). Modigliani and Miller (1963, p. 433) developed three important propositions which form the base of their theorem, namely:

- Proposition I – A firm's market value is independent of its capital structure.

- Proposition II – The cost of equity increases with its debt-equity ratio.
- Proposition III – A firm's total market value is independent of its dividend policy.

Modigliani and Miller (1958, p. 261) theory states that the value of a leveraged firm is equivalent to the value of an unleveraged firm, if their profits and future forecasts are equivalent. A leveraged firm is financed through a mix between debt and equity and an unleveraged firm is wholly financed by equity. Thus, if an investor purchases shares, the cost of both leveraged and unleveraged firm shares should be the same and additionally, financial leverage does not affect the market value of a firm. According to Modigliani and Miller (1958, p. 261) first proposition, the value of the firm is determined by its assets and income from business operations; and therefore if frictionless markets existed, there would not be an optimal capital structure. However, since no country is tax-free, this assumption does not account for the real-world markets. South Africa, similarly to other countries, also incurs transaction costs such as brokerage, consultation, agency and underwriting fees on occurring transactions. Thus, when analysing the optimal capital structure, it is important to include taxes and transaction costs in order to acquire accurate knowledge of the optimal capital structure.

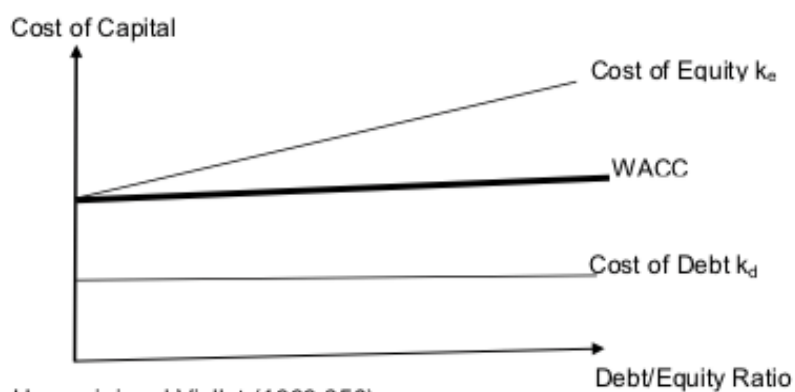


Figure 2. Modigliani and Miller's theory: Capital structure without taxes or transaction costs

Source: Atrill (2009, p. 344)

As the cost of equity increases, the debt-equity ratio increases while the WACC remains constant. The reason why WACC remains constant is because the increase in the cost of equity is offset by the cheaper cost of debt (Atrill, 2009, p. 344).

Modigliani and Miller (1963, p. 441) revised their first proposition where capital structure is irrelevant and included tax benefits as a determinant of capital structure. According to the revised proposition, financing through debt is now relevant in determining the firm's profitability as interest costs are tax deductible, thus decreasing the firm's tax amount and in turn saving on equity. Thus, the tax

advantage increases the return on equity and the value of the firm. Income tax lowers the cost of debt and in turn lowers the WACC. When disregarding financial distress costs, financing through debt only is the best option, but realistically, having excessive debt will lead to bankruptcy (Atrill, 2009, p. 349).

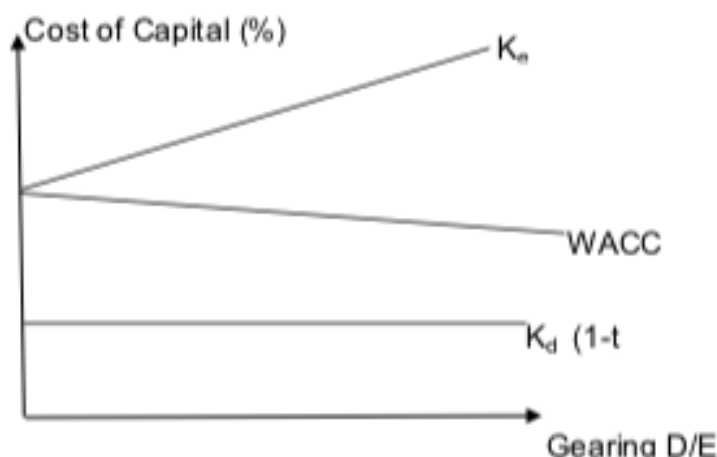


Figure 3. Modigliani and Miller's Theory: Includes Taxes

Source: Atrill (2009, p. 349)

Modigliani and Miller's (1963: 441) theory still faced criticism as it still does not account for the real-world markets as the proposition assumed that there are no transaction and brokerage costs. Despite the criticisms, Modigliani and Miller (1958: 262) pioneered the study of capital structure and provided a benchmark for other theories on capital structure such as the trade-off theory, pecking order and agency cost theory.

2.1.1.2. Trade-off Theory

The trade-off theory is a more practical approach to capital structure and recognises taxes, and the cost of financial distress and related costs, and takes these assumptions such as tax into consideration. It is found that borrowing provides a tax advantage (tax shield) which reduces the cost of capital and increases the firm's performance (Abeywardhana, 2017, pp. 1-34). This theory is called the trade-off theory, and is an extension of the Modigliani and Miller approach. The trade-off theory states that firms are more likely to choose more debt in order to benefit from the tax shield that debt financing offers (Nassar, 2016, p. 2). Kraus and Litzenberger (1973, p. 912) explored the effect of taxation and concluded that there is a tax advantage when using debt financing because interest payments are tax deductible. The trade-off theory proposed by Kraus and Litzenberger (1973, p. 912) incorporated tax shields with debt and financial distress into a model. Myers

(1984, p. 577) further developed the theory and hypothesised that a firm's optimal capital structure is at the point where there is a trade-off between debt financing and the costs of such as financial distress and bankruptcy costs.

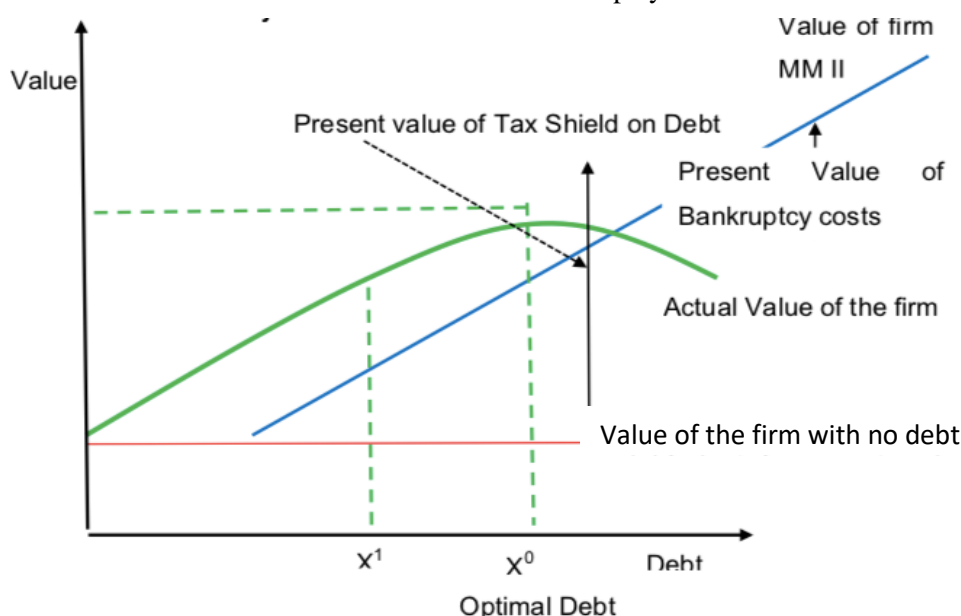


Figure 4. Trade-off Theory illustrated

Source: Hawawini and Viallet (1999, p. 36)

The optimal debt is shown at X^0 the trade-off between debt financing and the costs associated. The red line shows the value of the firm is lower when it wholly financed by equity but when you include debt as a source of financing, the value of the firm increases and the optimal capital structure is where the debt to equity ratio is maximized and the WACC is minimized (Hawawini & Viallet, 1999, p. 36).

The trade-off between debt financing and the costs can become excessive as debt increases; the interest payable increases as well, which decreases the cash flow of the firm. If the firm is over-leveraged and cannot meet its financial obligations, the firm will go into a financial distress and this could lead to bankruptcy. When a firm experiences financial distress, some employees might leave, sales can be negatively impacted, the growth of the business will decline, and suppliers might refuse credit. This negatively affects the financial performance of the firm and thus, decreases the value of the firm (Hove, 2017, p. 14).

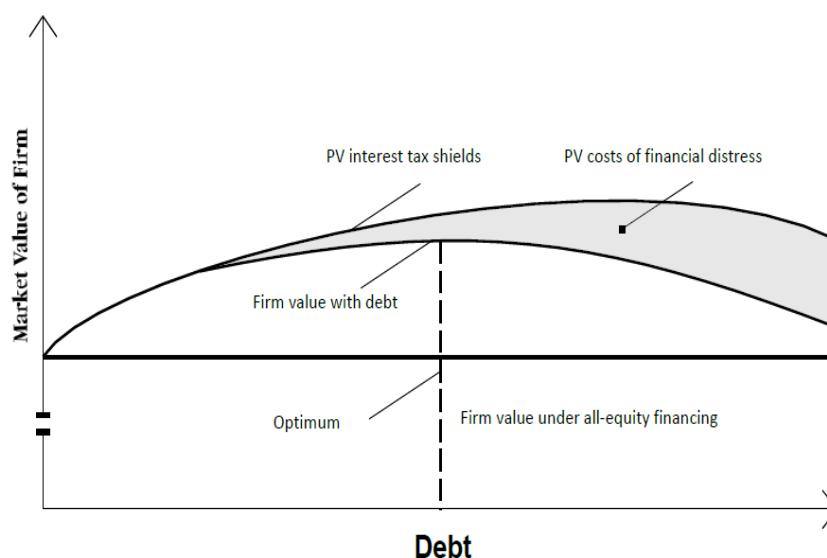


Figure 5. Static Trade-off Theory

Source: Myers (1984, p. 577)

The optimum capital structure is where the value of the firm is maximised at the trade-off between debt to equity. The optimal level is the trade-off between tax shield and the costs of financial distress. Figure 2.6 shows that when the present value of financial distress is larger than the present value of tax shield benefit, the firm will adjust their debt levels (Myers, 1984, p. 577). If the present value of the tax shield is greater than the present value of financial distress, the firm will increase their debt levels to improve the overall value of the firm and improve financial performance. The trade-off theory demonstrates that the financial performance of a firm is related to the debt ratio and the study will determine if there is a positive relationship between profitability and the debt ratio.

In addition, the trade-off theory shows that higher tax rates lead to a higher leverage and this deductible expense is valuable to firms with high tax rates. Frank and Goyal (2003, p. 218) and Graham (1996, p. 41) find that there is a positive relationship between a high level of debt and a high tax rate. The higher tax rates make it more lucrative for firms to finance using debt in order to benefit from the tax shield.

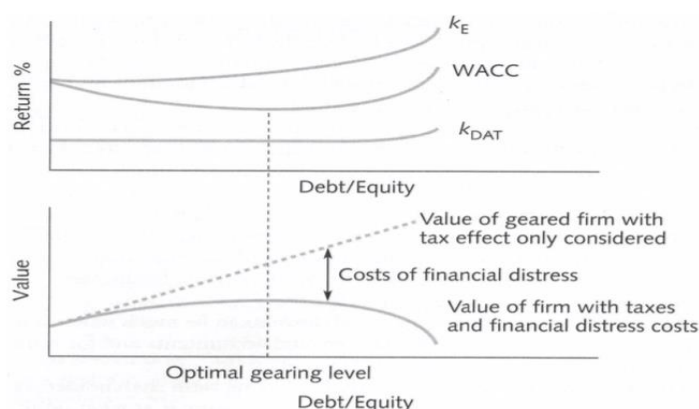


Figure 6. Trade-off Theory: Relationship between the Debt and Value of the Firm

Source: Arnold (2005, p. 381)

Figure 6 illustrated by Arnold (2008, p. 381) shows how the increase in debt affects the value of the firm, and that as the debt increases, the WACC decreases until it reaches the optimal level of debt-to-equity ratio, and that the cost of financial distress increases with the debt level. Miller (1988, p. 100) contended that the optimal level of debt-to-equity is at the highest tax-shield so a firm will issue more debt in order to maximise their tax shield, which reduces tax payments and increases profitability.

Furthermore, the trade-off theory predicts that a firm with tangible assets is associated with less financial distress costs than firms with intangible assets, as tangible assets are seen as more secure by creditors, thus lowering the risk and cost of debt. Frank and Goyal (2009, p. 26) concluded the same result a study of non-financial firms in the United States of America (USA).

Subsequently, there are some limitations in the theory, similar to Modigliani and Miller (1963, p. 434). Some criticisms are made even though the theory contributes significantly to capital structure existing literature. Shyam-Sunder and Myers (1999, p. 220) argues that the theory is poorly explained and only provides some information of financing behaviour and the theory demonstrates that higher debt ratios lead to high financial performance. Empirical evidence, however, shows highly profitable firms with lower debt ratios and this theory does not account for these firms (Chen & Strange, 2005, p. 29).

2.1.1.3. Pecking Order Theory

The Pecking order theory was advanced by Myers and Majluf (1984, p. 190). It does not discuss the optimal capital structure but uses a preferred hierarchy to finance a firm. This theory utilises the two sources of funding—internal and external—in order to determine how investments should be funded. Internally

generated funding (retained earnings and excess liquid assets) is first factored in, followed by external funding wherein which debt is first considered; followed by preferred stock, and lastly, common stock (Nassar, 2016, p. 2). Retained earnings do not bear any transaction or floatation costs as the capital is provided internally. The pecking order theory is based on a hierarchy and therefore requires management to make financing decisions based on this preferred hierarchy. The theory thus follows a behavioural approach and management will seek to fund operations with the lowest cost of financing (Hove, 2017, p. 17).

Due to information symmetries between both entities, firm and investors, a firm will prefer retained earnings over debt, then prefer short-term debt over long term debt and lastly, prefer debt over equity (Chen, Jung & Chen, 2011, p. 2). Myers and Majluf (1984) further contend that if a firm does not issue new securities and only uses retained earnings to finance future investments, then the asymmetric information can be resolved. Based on this assumption, the issuing of equity then becomes more expensive as asymmetric information increases and firms with high information asymmetry should use more debt as a source of funding in order to avoid selling under-priced securities. New debt in this scenario is a good indication that the firm has positive prospects.

The trade-off theory recognises transaction costs as it plays an important role in determining the optimal capital structure. The pecking order theory also recognises transaction costs that occur: the cost of obtaining internal financing is less than that of obtain external financing and in fact, internal funds do not have any transaction costs and are thus preferred, which is consistent with the theory.

The pecking order theory also postulates that there is a negative relationship between debt and financial performance. According to the pecking order theory, leverage is positively related to capital expenditure, dividends and firm growth. Shyam-Sunder and Myers (1999, p. 221) stated that profitable firms are less leveraged as they have more internal funds (retained earnings) to finance their investments or projects. Using the hierarchy, if a firm requires external financing it will use debt over equity as debt is regarded as cheaper. Fama and French (2002, p. 2) and Sheikh, Wajid, Waheed and Muhammad (2012, p. 93) both conclude that there is a negative relationship between leverage and profitability and confirm that the leverage is lower for firms that perform better which is consistent with the pecking order theory predictions.

There are some limitations to the pecking order theory. Firstly, this theory does not explain the effect of taxes and financial distress costs. Secondly, trade-off theory does a better job of explaining the benefits of tax shields. Thirdly, the pecking order theory ignores the agency costs. Pecking order theory is one of the common theories of corporate leverage and Frank and Goyal (2003, p. 218) analysed if the hierarchy mentioned above is sufficient in financing debt. Frank and Goyal (2003,

p. 241) found that internal funding is not always sufficient in covering investment spending, and subsequently, external finance is relied upon to supplement internal funding. Frank and Goyal (2003, p. 241) do however state that debt does not dominate equity financing, and as such, they track each other closely.

2.1.1.4. Agency Cost Theory

Jensen and Meckling (1976, p. 308) put forward the agency cost theory which refers to the conflict of interest between shareholders and decision-makers of the firm. The conflict arises when the agent (manager) is more likely to look after his/her own interests rather than maximising benefits of the shareholders. Shareholders thus need to ensure that the agent (manager) does not invest the free cash flow in non-profitable projects (Nassar, 2016, p. 2).

Conflict can arise between shareholders and managers because managers do not bear the costs of their business activities. Therefore, managers may manage the firm’s resources with less effort and might transfer resources for their own personal benefit rather than maximising the firm’s value. Jensen (1986, p. 323) stated that debt requires the firm to pay out cash, which in turn reduces the amount of cash available for managers to use resources for their own benefit. If there is minimal conflict between managers and shareholders, then debt financing is beneficial. Jensen and Meckling (1976, p. 117) argued that an optimal capital structure is at the trade off point of agency cost of debt and the benefit of debt.

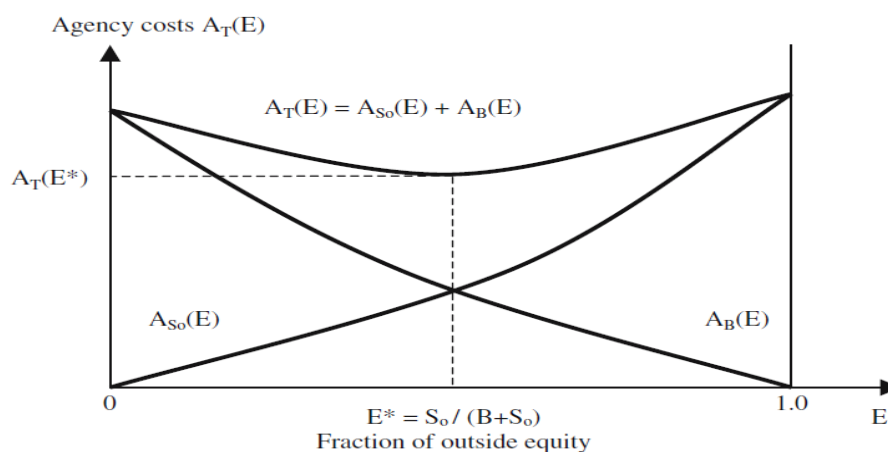


Figure 7. Agency Theory: Optimal Capital Structure
 Source: Chen and Strange (2005, p. 17)

Figure 7 depicts that the line $A_{S_o}(E)$ is the agency costs associated with outside equity and $A_B(E)$ is the agency costs associated with debt. The optimal capital structure is at point E^* and $A_T(E^*)$ is the minimum total agency costs that corresponds with E^* (Chen & Strange, 2005, p. 16).

Jensen and Meckling (1976, p. 120) advanced the principal agent theory which states that managers will not always act in the best interest of the shareholders and may, in fact, pursue their own agendas, instead of maximising shareholder returns. An example of such a scenario would be where managers could use the excess cash flows to invest in short term projects that yield high profits, in order to award themselves with large bonuses, instead of acting in the interest of shareholders, to increase shareholder returns. The owners and management are separate and therefore agency costs arise in the principal agent conflict. Monitoring costs, bonding costs and residual losses all form part of agency costs. Additionally, agency cost theory predicts that firms with higher levels of debt is predicted to perform better (Gwatidzo & Ojah, 2008, p. 86).

Further, Jensen (1986, p. 323) proposed that increasing the ownership of managers in the firm would lead to ownership and managers having aligned interests, thus, reducing high agency costs. Agrawal and Mandelker (1987, p. 824) tested the relationship between managers holding common stock and options and found that debt levels increased as the level of insider ownership increased, thus showing a positive relationship between debt and insider ownership. There is, however, an explanation, as managers will now profit from high returns and thus will decide to use debt instead of equity because using equity as a form of funding would reduce their shareholder returns. Similarly, this would reduce agency costs, as management now forms part of ownership and will therefore make decisions that are profitable to the firm, in order to be paid dividends.

Pinegar and Wilbricht (1989, p. 83) also established another way to reduce the agency problem. They concluded that it could be dealt with by using capital structure to increase debt levels. Essentially, managers will be expected to work efficiently in order to service the debt obligation, thereby making leveraged firms better for shareholders as debt levels can be used for monitoring managers' efficiency.

Berger and Bonaccorsi di Patti (2006, p. 1069) tested agency theory and its application in the banking industry and concluded that firms that are higher leveraged are positively related to profitable financial performance. This is thus consistent with the agency cost theory where higher levels of debt are positively related to firm profitability.

The debate on capital structure theories remains unresolved and regardless of the schools of thought surrounding capital structure and how a firm is valued, capital structure is important in determining profitability. Capital structure is one of the most essential financial decisions a firm needs to make in order to remain competitive, to grow and to be profitable (Nassar, 2016, p. 1). The agency cost theory suggests that the appropriate mix of debt and equity is also an important matter for corporate governance. Moreover, corporate governance, which is the

system by which firms are directed and controlled, also plays a role in the decision making of the optimal capital structure, in turn leading to firm profitability, and there are of corporate governance theories which can be employed by firms.

2.2. Empirical Literature Review

Modigliani and Miller (1958, p. 263) state that a firm's value is dependent on profitability rather than its capital structure, under perfect market conditions. In a later paper, Modigliani and Miller (1963, p. 441) stated that when taxes are included, then interest payments are tax deductible and that financing through debt is the optimal capital structure. Thus, a firm's value will increase as debt levels increase.

However, some studies have documented inconsistent results on the relationship between capital structure (debt financing) and financial performance. Champion (1999, p. 22) and Hadlock and James (2002, p. 390) found a positive relationship between capital structure and financial performance. Simerly and Li (2000, p. 46) and Ebaid (2009, p. 481) found negative, weak or no relationship between financial performance and capital structure.

Moreover, Myers (2001, p. 86) argued that capital structure is not the only technique that can be used in making financial decisions. Myers' (2001, p. 100) theory might explain the contradictory results found from the empirically tested studies explaining the relationship between capital structure and financial performance. A number of prior studies have been conducted regarding financial performance; see for instance, Salim and Yadaf (2012, p. 168), Appiadjei (2014, p. 42) and Rashid (2008, p. 113). However, there are fewer studies on leverage and financial performance. More research can be done to determine other factors that play a role in financial performance such as competitive intensity, business strategy and corporate governance.

Mayer (1988, p. 1172) conducted a study on non-financial firms in the United Kingdom (UK) and found that retained earnings contributed to a large portion of their investments. Corbett and Jenkinson (1996, p. 71) conducted a study on capital structures on five countries: Japan, Germany, France, UK and the United States of America (USA). The findings also concluded that retained earnings are used as the main source of funding. These findings support the pecking order theory which states that a firm will first use internal generated funding (retained earnings) which bear no external costs.

The G7 countries are considered to be the most advanced economies in the world. The G7 countries are Canada, Italy, United Kingdom, United States of America (USA), Germany, Japan and France. Van Esch (2011, p 16) described these countries as having similar capital structures and profitability. He concluded that

the difference between developed and emerging markets is small in terms of the leverage ratio, where developing countries have a higher leverage ratio than developed countries owing to developing countries having slightly more debt, due to countries being in an emerging phase, as well as the fact that they still need to industrialise. Van Esch (2011, p. 23) further documented a negative relationship between capital structure and financial performance, which shows that more debt does in fact decrease a firm's performance. Conversely, a study by He (2013, p. 32) found out that European countries, more specifically Sweden and Germany, have higher debt levels than that of a developing country—China, for instance—and concludes that debt levels positively affect financial performance.

Chen and Strange (2004, p. 30) analysed and concluded that there is a negative relationship between a firm's profitability and its level of debt. In turn, the more debt a firm has, the less profitable the firm is. Another emerging market is Iran: when investigating the relationship between capital structure and performance, Pouraghajan, Malekian, Emamgholipour, Lotfollahpour and Bagheri (2012, p. 174) concluded that firms can improve their performance by reducing the debt ratio. This results in firms using more retained earnings and equity to fund new projects. Similar to China, Iran's financial performance is also dependent on capital structure. The leverage (debt-equity ratio) is thus negatively correlated to return on assets.

Turkey, much like South Africa, exhibits characteristics of both developed as well as developing markets, but is viewed as a developing market when compared to other global markets. Nassar (2016, p. 1) conducted a study on the impact of capital structure on financial performance of firms listed on the Istanbul Stock Market. Nassar (2016: 3) used the debt ratio to measure capital structure and ROA, ROE and EPS to measure firm profitability. When analysing the earnings per share, return on assets and equity ratios, Nassar (2016: 4) found that there is a negative relationship between capital structure and financial performance.

Kasozi and Ngwenya (2010, p. 632) investigated whether capital structure theories are aligned with capital structure practices by testing the pecking order and trade-off theories of listed firms on the Johannesburg Stock Exchange (JSE) in South Africa during the period 1999 to 2005. Their study concluded that listed firms follow the trade-off theory, rather than the pecking order theory. Muazeib, Chairiri and Ghazali (2015, p. 26) sought to determine whether corporate governance drives capital structures of listed firms on the JSE for the year 2010. Their study used institutional ownership, independent audit committee and external auditor size as corporate governance measures. The study further used the debt to equity ratio to measure capital structure. Muazeib, Chairiri and Ghazali (2015, p. 29) concluded that institutional ownership, independent audit committee and external auditor size negatively affects the debt to equity ratio; thus affecting capital

structure.

Abor (2005, p. 436) conducted a study on listed firms in Ghana over a five-year period between 1998 and 2002, and concluded that short-term and total debt are positively related to the firm's ROE and that long-term debt is negatively related to firms. Zeitun and Tian (2007, p. 59) conducted a study to determine the relationship between capital structure and financial performance in non-financial Jordan firms and the findings reflected that the debt level is negatively related to financial performance, with the indicators being ROA and ROE. Abor (2007, p. 371) examined small and medium enterprises in Ghana and South Africa and concluded that there is a negative relationship between long-term and total debt, and financial performance. A study by Ebaid (2009, p. 480) on non-financial Egyptian listed firms showed that capital structure decisions have a little effect on firm's performance and shows the weak relationship between the two.

De Jong, Kabir and Nguyen (2008, p. 1956) found that developing countries have higher debt ratios, and thus use more long-term debt in comparison to developed countries. Similarly, Singh and Hamid (1992, p. 1) analysed 50 manufacturing companies in nine developing countries and found that firms do not rely on retained earnings but use more external funding. Singh and Hamid (1992, p. 1) further concluded that the reason for using external funding is because these firms are low profitability firms and do not have monies, or they are to set aside from their retained earnings.

Gwatidzo and Ojah (2009, p. 17) conducted a study on five African countries to determine how leveraged the countries are. The results of the study by Gwatidzo and Ojah (2009, p. 17) found that the debt levels of the five African countries are on par with that of other developing countries such as Mexico, Jordan, Thailand and Malaysia. The evidence supports the pecking order theory where these African firms choose internal financing before external debt and using short-term debt to finance projects. Moreover, profitability is negatively related to leverage, thus a more profitable firm will use retained earnings before considering debt.

On the basis of the evidence reviewed in the above foregoing, it would seem as if firms in developing countries are higher leveraged and rely on external financing, especially when these firms are growing and they need more capital, and internal funding will not be sufficient to cover all the costs. External financing has a tax advantage and reduces the tax cost, thus increasing profits. Each country is unique and there are no uniform patterns of financing in developed markets as well as developing markets; thus the relationship between capital structure and financial performance cannot be generalised and must be examined country by country.

3. Data and Methodology

3.1. Sample Description and Data Sources

This paper focuses on the retail sector specifically, hence the population of this study comprises of all South African firms in the wholesale and retail sector. The sample comprises of all those 18 retail firms listed on the JSE. There are 180 observations for the retail sample. The data extracted was over a ten-year period ranging from 2010 to 2019.

This research effort employs two dependent variables that measures financial performance. The most effective way to measure financial performance is by analysing the ROA and ROE as it captures the accounting performance of a firm. Le and Phan (2017, p. 714) as well as Tshipa and Mokoteli (2015, p. 157) used ROA and ROE as dependent variables. Furthermore, Ochola (2013, p. 30) used ROE to measure financial performance. Table 1 lists the variables employed in this study.

Table 1. Variable Definition

Variable	Variable Definition
Financial Performance Measures	
Return on Assets (ROA)	$ROA = \frac{\text{Net income after tax}}{\text{Total book value of assets}} \times 100\%$
Return on Equity (ROE)	$ROE = \frac{\text{Net income after tax}}{\text{Total book value of equity}} \times 100\%$
Independent Variables	
Board size (BSZ)	Board Size (BSZ) = Total number of Directors
Board independence (BIN)	$BIN = \frac{\text{Number of non executive board members}}{\text{Total number of board members}}$
Institutional ownership (INSO)	$INSO = \frac{\text{Institutional shares}}{\text{Total shares}} \times 100\%$
Firm Size (FSZ)	FSZ = natural logarithm of total assets
Debt-to-Equity ratio (DOE)	$DOE = \frac{\text{Total debt}}{\text{Book value of equity}}$

The independent variables of the study are corporate governance measures and capital structure variables. Capital structure is measured by the leverage ratio. Previous studies by Nassar (2016, p. 3) and Kasozi and Ngwenya (2010, p. 628) also used leverage as an independent variable. Corporate governance is measured by board size, board independence, institutional ownership and size. Previous studies by Muazeib, Chairiri and Ghazali (2015, p. 28), and Arora and Sharma (2016, p. 425) have also used similar variables. Hamdan and Al Mubarak (2017, p. 128) and Mashayekhi and Bazaz (2008, p. 158) have used board independence as a corporate governance measuring tool.

3.2. Model Specification

The first model to test the relationship between financial performance and capital structure the following static panel data model is specified with return on assets (ROA) as the dependent variable:

$$ROA_{i,t} = DOE_{i,t}\beta_1 + DDE_{i,t}\beta_2 + BSZ_{i,t}\beta_3 + BIN_{i,t}\beta_4 + INSO_{i,t}\beta_5 + FSZ_{i,t}\beta_6 + \alpha_i + \varepsilon_{i,t} \dots \dots \dots (1)$$

In the second instance, for robustness checks, to test the relationship between financial performance and capital structure the following static panel data model is specified with return on equity (ROE) as the dependent variable:

$$ROE_{i,t} = DOE_{i,t}\beta_1 + DDE_{i,t}\beta_2 + BSZ_{i,t}\beta_3 + BIN_{i,t}\beta_4 + INSO_{i,t}\beta_5 + FSZ_{i,t}\beta_6 + \alpha_i + \varepsilon_{i,t} \dots \dots \dots (2)$$

where:

$ROA_{i,t}$ = Return on assets for firm i at time t

$ROE_{i,t}$ = Return on equity for firm i at time t

$DOE_{i,t}$ = Debt-to-Equity ratio for firm i at time t

$DDE_{i,t}$ = Debt-to-Capital ratio for firm i at time t

$BSZ_{i,t}$ = Board size for firm i at time t

$BIN_{i,t}$ = Board independence for firm i at time t

$INSO_{i,t}$ = Institutional ownership for firm i at time t

$FSZ_{i,t}$ = Firm size of firm i at time t

β = slope parameter

α_i = group-specific constant term that embodies all the observable effects

$\varepsilon_{i,t}$ = composite error term that also takes care of other explanatory variables that equally determine financial performance but were not included in the model.

4. Empirical Results

4.1. Descriptive Statistics

The summary statistics of the paper documented that South African retail firms recorded profits with a mean of 9.8% for the ROA and with a mean of 19.9% for ROE for the period of the study. The ROA ratio is important for retail firms because it relies on inventory to generate sales. The ROE is larger than ROA, which indicates that investors earn a higher return on their investment (equity). Hove (2017, p. 52) recorded a ROE of 16.1%, which is relatively close to the ROE in this study.

Table 2. Summary Statistics

Variable	Mean	Median	Standard Deviation	Minimum	Maximum
ROA	9.8069	9.1107	18.2013	-52.5596	179.6895
ROE	19.9302	20.6948	27.7750	-129.0716	212.5638
DOE	1.9087	1.2152	2.1818	0.1024	13.9727
DDE	52.5819	54.9334	22.3966	9.2889	93.3212
BSZ	15.6875	14	6.2113	6	29
BIN	63.2761	67.7083	20.4067	17.2413	100
INSO	14.6466	17.7978	7.5555	0	22.2222
FSZ	6.5674	6.8091	0.8293	4.6798	7.8128

The debt-to-equity average ratio is 1.9 which means that firms are able to cover their debts. The debt-to-capital ratio indicates the percentage of capital structure that consists of debt. The average debt-to-capital is 52.6%, which means that 52.6% consists of debt. Thus, these results imply that retail firms are highly leveraged. Kasozi (2018, p. 176) and Hove (2017, p. 52) measure debt in terms of long- and short-term debt, but both find that firms are highly leveraged and prefer short-term debt.

The trends in the retail sector are depicted in Figures 8, 9 and 10. The average financial performance of South African retail firms can be seen from the ROA and ROE.

Figure 8 explains the relationship between assets, equity and profitability of retail firms in the sample. The ROA increases from 2010 at 6% to 2017 to about 19%. In 2018 the ROA took a massive plunge from 19% to 3% and increased in 2019 to 7%. Over the 10 year period, retail firms were able to utilise assets to generate earnings. ROE over the 10 year period is significantly higher than ROA. The ROE increased from 2010 at 11% to 2017 at 31%. In 2018, similarly to ROA, the ROE decreased to 6% and increased to 13% in 2019. Overall, retail firms used their equity and used investments to generate growth.

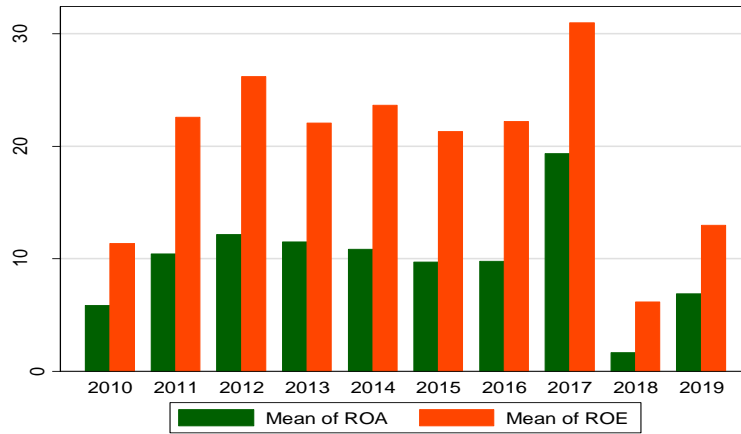


Figure 8. Trends in Financial Performance Measures

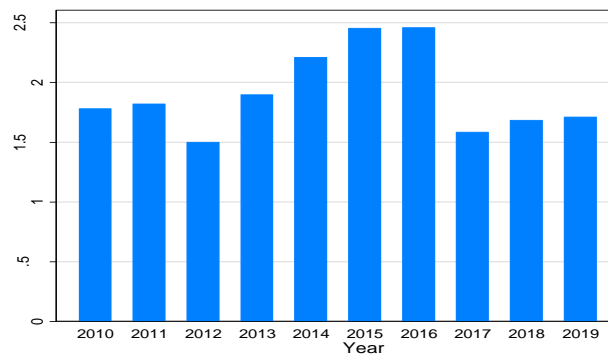


Figure 9. Trends in Debt-to-Equity Ratio

Figure 9 depicts the debt-to-equity ratio of retail firms over a 10-year period. In 2010 and 2011, the debt-to-equity ratio remained relatively the same at 1.7 and 1.8, respectively. In 2012, the debt-to-equity ratio was 1.5, and from 2014 to 2016, the debt-to-equity increased, measuring 2.2, 2.4, 2.4, respectively. From years 2017 to 2019, the debt-to-equity ratio decreased to 1.6. The higher debt-to-equity ratio from 2014 to 2016 can be explained by firms that may have been aggressive in financing its growth using more debt.

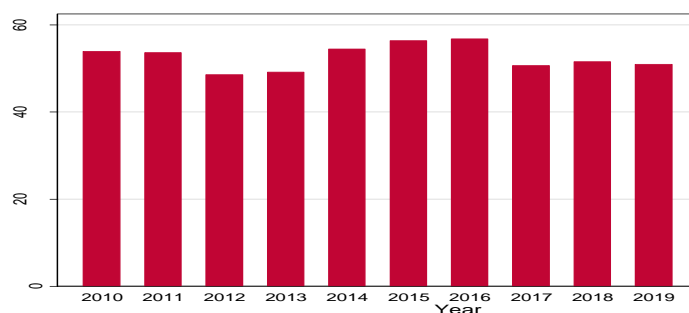


Figure 10. Trends in Debt-to-Capital Ratio

The debt-to-capital ratio is a leverage ratio that measures the value of equity in a firm by analysing the debt levels. The higher the ratio, the riskier the firm. The debt-to-capital ratio from 2010 to 2019 is fairly similar and all lie around 50%. In 2010 the debt-to-capital was 54% and in 2019 the debt-to-capital was 50%. Thus, retail firms fund their projects through debt as the debt-to-capital ratio does not change significantly over the period of 10 years which confirms the trade-off theory. These trends are depicted in Figure 10.

4.2. Empirical Findings

We made use of panel regression analysis as an estimation tool to determine the relationship between capital structure and financial performance of South African retail firms. The results are reported in Table 3 and Table 4. The regression models employed ROA and ROE as the performance indicators and debt-to-equity ratio (DOE) and debt-to-capital ratio (DDE) as the measures of capital structure.

The results from all the regression outputs indicate that debt has a significant negative influence on the retail firm's ROA and ROE. However, ROA has a higher correlation which means that ROA is the better variable to consider as a performance variable.

Debt-to-equity and debt-to-capital provide similar results so either variable can be used as a capital structure measure. Thus, a negative relationship subsists between capital structure and financial performance. The use of debt results in declining profits in retail firms. These results can imply that debt costs take the tax benefits away. In conformity with the static trade-off theory, the negative effect could be explained by the tax shields on additional debt which is outweighed by the increase in financial distress costs. Additionally, managers should be indifferent in their choices between debt and equity for financing options because it has a negative effect they have on profitability. The findings suggest that retail firms should consider internally generated funds or equity for as a source of financing as they

are also regarded as the safest and cheapest. This furthermore, supports the pecking order theory.

Table 3. Panel Estimation Results with ROA as Dependent Variable

	Model 1			Model 2		
	<i>Dependent variable = ROA</i>			<i>Dependent variable =ROA</i>		
	Pooled OLS	Random Effects	Fixed Effects Driscoll and Kraay (1981) standard errors	Pooled OLS	Random Effects	Fixed Effects Driscoll and Kraay (1981) standard errors
DOE	-2.969*** (-3.14)	-3.433*** (-3.90)	-3.918*** (-3.21)			
DDE				-0.362*** (-5.80)	-0.368*** (-5.41)	-3.918*** (-3.21)
BSZ	-1.166* (-1.97)	-1.102 (-1.64)	-2.202** (-2.02)	-1.084** (-2.56)	-1.025** (-2.19)	-2.202** (-2.02)
BIN	-0.130 (-1.51)	-0.112 (-0.65)	0.624* (1.78)	-0.121 (-1.13)	-0.108 (-0.90)	0.624* (1.78)
INSO	-0.143 (-0.39)	-0.116 (-0.36)	-0.269 (-0.80)	-0.040 (-0.21)	-0.021 (-0.09)	-0.269 (-0.80)
FSZ	10.961*** (3.05)	10.054** (2.54)	8.930 (1.49)	11.056*** (4.06)	10.500*** (3.56)	8.930 (1.49)
constant	-27.863** (-2.95)	-23.578 (-1.37)	-53.740** (-3.34)	-18.504 (-1.65)	-16.504 (-1.33)	-53.740** (-3.34)
Number	160	160	160	160	160	160
Adjusted R²	0.1513	0.1473	0.3101	0.1513	0.2231	0.3101
F-statistic			3.75***			3.75***

(*) / (**) and (***) indicates the (10%), (5%) and (1%) level of significance respectively. The t-statistics for the pooled and fixed effects models as well as the z-statistics for the random effects models are reported in parentheses.

Retail firms should build and financial reserve until they have sufficient internally generated funds to finance new projects. Firms can invest through retained earnings where they will benefit from non-debt tax shields such as depreciation which can substitute the tax shield benefits from debt.

Table 4. Panel Estimation Results with ROE as Dependent Variable

	Model 1 <i>Dependent variable = ROE</i>			Model 2 <i>Dependent variable =ROE</i>		
	Pooled OLS	Random Effects	Fixed Effects Driscoll and Kraay (1981) standard errors	Pooled OLS	Random Effects	Fixed Effects Driscoll and Kraay (1981) standard errors
DOE	-2.677** (-2.57)	-3.206*** (-2.66)	-0.417*** (-2.12)			
DDE				-0.273*** (-2.86)	-0.304*** (-2.74)	- 0.417** (-2.12)
BSZ	-2.412*** (-3.50)	-2.149** (-2.49)	-1.225 (-0.96)	-2.225*** (-3.43)	-1.922** (-2.48)	-1.225 (-0.96)
BIN	-0.372** (-2.18)	-0.310 (-1.43)	1.175** (2.21)	-0.342** (-2.07)	-0.274 (-1.38)	1.175** (2.21)
INSO	-0.026 (-0.09)	0.058 (0.14)	0.226 (0.39)	0.078 (0.26)	0.176 (0.47)	0.226 (0.39)
FSZ	23.299*** (5.32)	20.566*** (3.90)	7.192 (0.92)	22.552*** (5.40)	19.716*** (4.13)	7.192 (0.92)
constant	-66.15*** (-3.82)	-56.50** (-2.58)	-81.72*** (-3.23)	58.37** (-3.39)	-48.68* (-2.37)	-81.72** (-3.23)
Number	160	160	160	160	160	160
Adjusted R²	0.1812	0.2015	0.2825	0.1892	0.2111	0.2825
F-statistic			4.68***			4.68***

(*) / (**) and (***) indicates the (10%), (5%) and (1%) level of significance respectively. The t-statistics for the pooled and fixed effects models as well as the z-statistics for the random effects models are reported in parentheses

It can be inferred that the profitability of retail firms in South Africa is not a function of how much debt firms accumulate. Furthermore, the current debt levels in this sector negatively influence the profitability of firms. This result is alignment with the pecking order theory of financing behavior as opposed to the trade-off theory of financing behaviour. Rouf (2015, p. 30), Kasozi (2018, p. 176) and Obim, Anake and Awara (2014, p. 70) also found a negative relationship between capital structure and financial performance. Myers (2001, p. 85), however, states that capital structure is not the only way to explain financial decisions. Ibrahim (2009) found contradictory results which can be explained by Myers theory. The theory

states that internal financing is preferred then debt and equity as a last resort. The study conducted by Ebaid (2009, p. 478) focused on non-financial Egyptian firms and found a weak or no relationship between debt and financial performance, because these firms used more internal funding.

5. Conclusion

This paper examined the relationship between capital structure and financial performance in retail firms in South Africa. The results of this study documented a negative relationship between capital structure and financial performance. Therefore, it can be inferred that the profitability of retail firms in South Africa is not a function of how much debt firms have accumulated. The current debt levels in this sector negatively influenced financial performance. This finding was consistent with the pecking order theory of financing behaviour as opposed to the trade-off theory of financing behaviour. This suggests that there are different implications for retail firms in South Africa. The excess levels of debt in the retail sector negatively impacted the on their financial performance.

Future studies could incorporate the other sectors which are also likely to rely on both debt and equity for their financing and could also compare similar retail firms and compare these firms to those of other countries. Future studies could also employ other measurements of financial performance. This study only used ROA and ROE which did not take in account the market value of firms. Other measurements to include are earnings per share and Tobin's Q which relate to the market value of firms. Lastly, to have a deeper understanding of how firms use their debt, variables such as short-term debt and long-term debt could be estimated

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