



2017 Southern African Accounting Association  
Biennial International Conference Proceedings  
Champagne Sports Resort  
Drakensberg  
SOUTH AFRICA  
(ISBN 978-0-620-74762-2)  
<http://www.saaa.org.za/>

---

**MAF013                      The signalling effect of dividends on future financial  
performance: A case of South African listed companies in the  
post-apartheid era**

AUTHOR(S):            Faustina Masocha            UNISA                      [50885073@mylife.unisa.ac.za](mailto:50885073@mylife.unisa.ac.za)  
                                 Stephen Ndlovu                UNISA                      [Ndlovs@unisa.ac.za](mailto:Ndlovs@unisa.ac.za)

**ABSTRACT:**

Despite the amount of empirical tests carried out to determine the dividend signalling hypothesis, evidence of the exact information embedded in those dividends is still inconclusive. This study explored empirical literature which links the dividend signalling theory to various aspects of financial performance and justified why empirical studies must not limit dividend signalling to one measure of financial performance. This is especially important since almost all studies only examine the dividend-earnings test. Using panel data models, data for 35 firms listed on the JSE from 1995 to 2016 and regression analysis, the study examined the relationship between dividend changes and profitability, liquidity and gearing. By going beyond the usual dividend-earnings test, the study opens avenues to answer the most important question as to what exactly is signalled when firms change dividends. Findings from the study revealed that when one controls for the mean reversion and autocorrelation of profitability, changes in earnings and in ROA are not explained by changes in dividends. On the other hand, the dividend-liquidity test revealed that dividends are positively and significantly related to liquidity. Moreover, the dividend-gearing test showed that dividends are negatively and significantly related to a firm's expected debt levels. Indeed, it is the results from the last two tests that reveal how dividend signalling might still be a puzzle as most authors limit it to profitability.

**Key words:** dividend signalling, financial performance, profitability, liquidity, gearing

## INTRODUCTION

According to Kapoor (2009) dividends are not only a key variable through which investors can gauge how well a firm has been doing, but can also be a measure of expected performance. In this regard, dividends are not a mere return to investors but can reveal more, at least as far as the shareholders are concerned, about the performance of a firm (Sharma, 2015). This is especially true since managers possess more information regarding the current and especially the expected performance of a firm (Iqbal, 2014). Based on this argument, any changes in dividends can be interpreted to have some information regarding the expected future performance of the firm, hence the birth of the dividend signalling theory (Vieira, 2005).

The dividend signalling concept has been a topic of research and debate for over five decades ever since Lintner's (1956) proposition on the topic (Njonge, 2014). Despite the amount of attention the topic draws, there is still inconclusive evidence on what exactly is signalled by dividends, if they do carry signals at all (Njonge, 2014). In fact, if one looks at the dividend signalling picture, it still consists of different unsolvable puzzle pieces, a fact acknowledged by Black (1976) and further reinforced by Bernstein (1996). Later on Frankfurter (1999:83) excellently summed it all up and noted that "it is either not possible, or extremely difficult, to find an economically rational solution to the dividend puzzle".

Indeed, in an attempt to unravel the dividend signalling puzzle, scholars and analysts have failed to unanimously agree on the exact information that is embedded in dividend changes (Al-Makawi, Rafferty and Pillai, 2010). For instance, authors such as Lee (2010a), Lee (2010b), Lukose and Rao (2010) as well as Lee, Isa and Lim (2012) used the dividend-profitability test and investigated whether managers use dividends to convey information regarding future changes in a firm's profitability. The authors' dominant profitability measures were Return on Assets (ROA) and Return on Equity (ROE).

On the other hand, authors such as Benartzi, Michaely, and Thaler (1997), Nissim and Ziv (2001), Grullon, Michaely and Benartzi (2003) as well as Vermeulen and Smit (2013) investigated the same dividend-profitability test but instead argued that changes in dividends convey information regarding changes in a firm's expected earnings. Interestingly, this group of authors differentiates their studies from their dividend-ROA counterparts by arguing that dividends are not a signal of profitability as is measured by metrics as ROA or ROE, *per se*, but specifically reflects the expected level of earnings growth (Pandey, 2015). In fact, the basis of their argument emanates from Lintner (1956)'s discussion that managers can only increase dividends when they believe that earnings have permanently increased.

The lack of agreement amongst authors as to what is exactly signalled by changes in dividends has led to a notable number of studies which examined the relationship between movements in dividends and movements in either ROA, ROE or earnings. Yet, despite the number of studies conducted on the dividend signalling hypothesis, there has only been a handful of authors who carried out empirical tests on other dividend signalling hypotheses such as Bhattacharya (1979)'s signalling hypothesis that dividends carry information about a firm's expected cash flows. In fact, it has only been in recent years that signalling studies have turned to investigate the possibility of dividends as a signal of liquidity. Authors such as Bessler and Nohel (2000), Kauko (2012), Forti and Schiozer (2015) as well as Oliveira, Schiozer and Barros (2015) have come to the conclusion that if managers possess

information regarding future and/or current cash flows that investors do not have, investors will interpret dividend increases as signals that management anticipates permanently higher cash flows. Their argument is driven by the fact that even though dividends are declared from profits earned, they are still paid from a firm's cash reserves (Forti and Schiozer, 2015). Based on this discussion, firms can only commit to high dividends if they are confident that they have enough cash reserves to sustain the change in dividends.

In a bid to also understand the exact information signalled when dividends change, Grullon teamed up with Michaely and Swaminathan to determine whether dividends changes are signals of changes in the debt levels of a firm (Grullon, Michaely, and Swaminathan, 2002). The argument behind their work was that firms with a high level of debt will have to commit to the payment of high interest expenses hence reducing dividends declared and paid. Following their argument, it can therefore be reasoned that firms can only increase their dividend levels when they believe that there has been a decrease in their debt level, thus releasing them from the commitment to pay interests.

Based on the different approaches discussed above, it seems as if changes in dividends could be a signal of different aspects of future financial performance. For instance, Charitou and Vafeas (1998) justified the relationship between dividends and liquidity by arguing that since management extensively consider the current and expected liquidity position of a firm, dividends changes could carry liquidity signals. This was later substantiated by Adelegan (2003) who argued that it is folly to only limit the dividend signalling hypothesis to profitability as tests between dividend changes and expected cash flows suggest a strong and positive relationship between the variables. Furthermore, Denis, Denis and Sarin (2009) analysed capital investments after dividend increases and decreases and found that firms that had enough cash for capital investments experience dividend increases in prior years, hence indicating a relationship between prior dividends and subsequent cash flows. Based on the evidence presented above, it would indeed be folly to only limit the dividend signalling hypothesis to profitability as the studies above are indicative of the ability of dividends to signal subsequent changes in a firm's cash flow.

Mworia (2016) encouraged debate on the ability of dividends to signal future debt levels with the argument that since the payment of dividends reduce the amount of internal capital for financing investments, firms which may be highly geared may pay lower dividends than their counterparts with increases in dividends only initiated when there is an expected permanent decrease in debt levels. This link between dividends and debt warrants the need to explore whether dividends carry signals regarding expected debt levels. This is especially true in the South African context where most companies rely on debt to finance investments (Steenkamp, 2013). In this regard, firms could use dividends to send information should they expect debt related costs to go down thus freeing funds for dividends (Grullon et al, 2002)

The discussion above substantiates Brigham and Houghton's (2007) argument that the dividend policy adopted by a firm reflects a firm's overall performance. In fact, as Vieira (2005) proposed, exploring the dividend signalling hypothesis should not be limited to one aspect of a firm's financial performance but needs to be extended to various aspects of financial performance that could possibly be signalled when firms change their dividend level by looking at various aspects of financial performance. This is the central issue investigated in this paper. This is especially true in the South African context where the dividend signalling hypothesis has mainly been limited to the signalling of earnings as is evidenced by studies

by authors such as Wolff and Auret (2009), Vermeulen and Smit (2013) and Montgomery (2015) yet it has been proven that a firm's dividend policy could be related to aspects such as liquidity and gearing.

This study, therefore investigates four different aspects of financial performance that could possibly be signalled when firms change dividends in post-apartheid South Africa from 1995 to 2016. These various measures of financial performance are changes in a firm's profitability, liquidity and gearing.

In order to achieve the above mentioned general objective, the research had the following specific objectives as follows:

- a) To investigate the relationship between changes in dividends and changes in future earnings.
- b) To investigate the relationship between changes in dividends and changes in future ROA.
- c) To investigate the relationship between dividends and changes in future liquidity as is measured by the current ratio.
- d) To investigate the relationship between changes in dividends and changes gearing as is measured by the debt to equity ratio.

The author differentiated between the signalling of earnings and ROA as is shown by objectives *a* and *b* above following the argument by Lintner (1956) that managers would only increase dividends when they were certain that earnings had increased permanently. Furthermore, ROA was also used as another profitability measure based on Pandey (2015)'s assertion that although earnings are a measure of how profitable the whole business unit was, they do not necessarily reflect the operational efficiency of a firm as is reflected by ROA. The study also used the Current ratio (CR) and the debt to equity ratio (DER) as liquidity and gearing ratios respectively following methodology by Vieira (2005).

To achieve the above objectives, hypothesis (a) to (d) were developed as follows:

*H<sub>0(a)</sub>: Increases or decreases in the current level of dividends are not associated with increases or decreases in future earnings.*

*H<sub>1(a)</sub>: Increases or decreases in the current level of dividends are associated with increases in future earnings.*

The second hypothesis (b) was formulated based on the ability of dividends to signal future profitability as measured by ROA as follows:

*H<sub>0(b)</sub>: Increases or decreases in the current level of dividends are not associated with increases or decreases in a firm's future ROA.*

*H<sub>1(b)</sub>: Increases or decreases in the current level of dividends are associated with increases or decreases in a firm's future ROA.*

Furthermore, hypothesis (c) tests the relationship between changes in the dividend level and future changes in a firm's liquidity measured using CR.

*H<sub>0(c)</sub>: Increases or decreases in the current level of dividends are not associated with increases or decreases in a firm's future CR.*

*H<sub>1(c)</sub>: Increases or decreases in the current level of dividends are associated with increases or decreases in a firm's future CR.*

Finally, hypothesis (d) is formulated to examine the inverse signalling relationship that exists between dividends and gearing, whereby firms can only commit to a dividend increase if they believe that there will be a lower gearing level as is reflected by a lower DER.

*H<sub>0(d)</sub>: Increases or decreases in the current level of dividends are not associated with decreases or increases in a firm's future DER.*

*H<sub>1(d)</sub>: Increases or decreases in the current level of dividends are associated with decreases or increases in a firm's future DER.*

The structure of the paper takes the form of five detailed sections, including this introductory section. The literature review section looks at both theoretical and empirical issues surrounding dividends and dividend signalling, while the methodology section outlines the steps followed in conducting the research. Section four explains the data and findings while the final section provides a conclusion to the study.

## **LITERATURE REVIEW**

### **Theoretical Literature Review**

Lintner (1956) conducted interviews for well established firms to determine factors which managers actively considered the most when making dividend decisions. The author found that in almost all instances there was a general reluctance to adjust dividend if earnings had not permanently increased. Similarly, dividend reductions were also less seldom (Lintner, 1956). The author concluded that the mere reluctance by managers to change dividend rates mainly emanated from the belief that dividends conveyed information regarding the prospects of a firm, thus needed to be changed with caution.

Bhattacharya (1979) proposed analysing dividend signalling theory from another angle after developing a model which proposed that dividend changes are a function of a firm's expected cash flows. Bradley, Capozza and Seguin (1998) reiterated Bhattacharya (1979)'s view by arguing that given the negative consequences associated with dividend reductions, managers rationally reduce dividends when future cash flows are uncertain. Based on this argument, when managers change their dividend payout ratios, they could be sending signals regarding expected liquidity levels, thus making the investigation of the relationship between dividends and liquidity justified.

According to Baker and Wurgler (2012), the dividend signalling hypothesis can also be explained using behavioural models which assume that changes in dividends revolve around a central point with any deviations prompting reactions from investors. The authors observed that most investors develop a dividend reference point which they compare subsequent dividends with. If subsequent dividends are more than reference-point dividends, they conclude that the firm's expected performance is positive. On the contrary, lower than reference-point dividends will send negative signals.

In a nutshell, though there are different dividend signalling theories, there is still one common concluding remark amongst the authors: dividends have an ability to carry information to less informed stakeholders. Yet, despite the overwhelming evidence that dividends indeed do carry signals, the contents embedded in those signals still is a puzzle.

## **Empirical Literature Review**

### **The dividend signalling of earnings**

Traditionally, financial literature has supported the theory that higher dividend payout ratios lead to lower subsequent earnings (Montgomery, 2015). Huang, You and Lin (2009) substantiated the same claim and concluded that in practice, firms that pay high cash dividends tend to have reduced future earnings while those with liberal dividends report higher subsequent earnings. Based on the foregoing discussion, the consensus view seems to be that high dividend payouts are associated with low subsequent earnings. Yet, a considerable amount of empirical studies seem to have conflicting conclusions on the issue.

Watts (1973) was one of the first authors to test the ability of dividends to signal future earnings. The author regressed future earnings against historical dividends and found a positive but weak relationship between past dividends and subsequent earnings.

Nissim and Ziv (2001) investigated the relationship between dividend changes and changes in earnings in the US market. The authors used dividend events between 1963 and 1998 with dividends per share and earnings per share being dependent and independent variables respectively. The main argument presented in the study was that studies such as Watts's (1973) study which failed to corroborate the dividend signalling hypothesis used flawed models that omitted important variables such as ROE. As a result, the authors included ROE into their model, asserting that it is an important predictor of earnings. The authors regressed changes in earnings against changes in dividends using a model that controlled for the mean reversion of earnings and concluded that dividend increases are associated with increases in future earnings and profitability for at least 4 years.

Grullon et al. (2005) challenged Nissim and Ziv's (2001) methodology by arguing that accounting for the mean reversion process as a linear process is flawed. The authors followed recommendations by Fama and French (2000) and assumed the rate of mean reversion and auto correlation of earnings to be non-linear; an assumption which seems realistic considering that earnings fluctuate in a non-linear manner. Using a non-linear model of earnings expectation, the authors concluded that dividends and future earnings are not correlated.

Arnott and Asness (2003) used the US market to investigate whether changes in future earnings are explained by changes in the dividend payout ratio. Interestingly, the authors fuelled controversy with the assertion that a firm's expected earnings are at their peak when the current payout ratios are high and dips when firms lower their payout ratios. In fact, as M'rabet and Boujjat (2016) commented, Arnott and Asness (2003)'s findings contradicted the common view that a liberal reinvestment policy of retained earnings fuels faster future earnings growth.



Zhou and Ruland (2006) asserted Arnott and Asness (2003)'s view when they conducted an investigation on a sample of Australian firms and concluded that there is a strong and positive relationship between a firm's current dividend payout and its future earnings.

Using data from the South African market, Vermeulen (2011) replicated the work of Zhou and Ruland (2006) to determine if changes in subsequent earnings could be explained by changes in past dividends. As was the case in Zhou and Ruland's (2006) study, the author found that a significant positive relationship exists between current dividend payout ratios and future earnings.

Along similar lines, Montgomery (2015) adopted the methodology used by Arnott and Asness (2003) for South African listed firms operating from 1960 to 2014 and analysed the relationship between dividend payout and earnings. This time, the results showed a negative relationship between dividend payout and subsequent earnings.

Despite the overwhelming evidence in support of the ability of dividend changes to signal changes in subsequent earnings, there have been authors whose empirical tests do not support the notion that dividend changes can send signals regarding changes in expected earnings (Farsio, Geary and Moser, 2004).

Farsio, et al. (2004) hypothesised that no significant relationship exists between dividends and earnings in the long run. The authors used quarterly data collected from 500 firms listed on the S&P index from 1988 to 2002 and employed a simple regression test and concluded that in the long run, no causal relationship exists between dividends and future earnings. In fact, the authors warned investors of the potential to be misled by the fleeting short term relationship between dividends and earnings

Asem and Kaul (2014) further reinforced the work of Farsio et al. (2004) in the US market by concluding that dividend reductions do not signal decreases in subsequent earnings and vice versa.

Mbithi (2014) used data from the Kenyan market from 1999 to 2012 to investigate whether dividend changes are related to future earnings. The fixed effect regression model was used and the evidence found failed to support dividend signalling of future earnings at 5% significance level.

The same results were reiterated by Eniola and Akinselure (2016) who examined the impact of dividend payout on earnings in Nigeria using secondary data from 2004 to 2013 and could not find sufficient evidence to support the dividend signalling hypothesis.

### **The dividend signalling of ROA**

Studies on the hypothesis that past dividends signal an improvement in a firm's profitability as is measured by metrics such as ROA and ROE have not only been scarce but have also consistently yielded inconclusive results. The following section looks at those studies in detail.

In 2003, famous dividend signalling gurus, Grullon, Michaely, Benartzi and Thaler (2003) teamed up and made their contribution to the dividend signalling puzzle. In their well-known

paper titled “*Dividend Changes Do Not Signal Changes in Future Profitability*”, the authors found that after controlling for the non-linear behavior of profitability, current year dividends were negatively correlated with future ROA.

Joos and Plesko (2004) tested the dividend signalling hypothesis by investigating the predictive power of dividend increases for loss making firms using ROA as a measure of profitability. The authors found enough evidence to support the signalling power of dividend increases.

Abrahamsen and Balchen (2010) used the Norwegian market to investigate whether changes in dividends affect a firm’s expected ROA. Using multivariate regression, the authors found that firms with dividend initiations and increases experienced an increase in future ROA.

Enekwe, Nweze and Agu (2015) investigated the effect of the dividend payout ratio on the financial performance of cement companies listed on the Nigerian Stock Exchange from 2003 to 2014. The authors used various ratios ranging from the Return on Capital Employed (ROCE), ROA and ROE to measure profitability with the dividend payout ratio as the proxy for dividend policy. Using panel analysis and OLS regression, the authors found a positive and significant relationship between dividends and subsequent profitability.

Despite the seemingly overwhelming evidence in support of the ability of dividends to signal expected changes in ROA, there have been studies which failed to find enough evidence to corroborate the hypothesis. For instance, Lee et al. (2012) used the event study methodology to investigate the relationship between past dividends and subsequent changes in ROA in Malaysia using data from 1998 to 2007. The authors found that there is a poor correlation between dividend changes and future profitability, especially in the long run.

Similarly, Velnampy, Nimalthasan and Kalaiarasi (2014) used data collected from manufacturing firms listed on the Colombo Stock Exchange from 2008 to 2012 to test if changes in ROA were explained by changes in past dividends. The authors could not find enough evidence in support of dividend signalling of ROA.

In South Africa, not many studies have been conducted specifically investigating the link between dividends and ROA. In fact, authors such as Wolff and Auret (2009), Vermeulen (2011), Vermeulen and Smit (2013) as well as Montgomery (2015) investigated the signalling of profitability but only used earnings as the metric of interest. This lack of empirical literature on the dividend-ROA relationship indicates a need to not only expand knowledge but to also understand if indeed changes in ROA could be explained by changes in the dividend payout pattern.

### **The dividend signalling of liquidity**

Bhattacharya (1979) and John and Williams (1985)’s most important contribution to dividend signalling has been the assertion that a firm’s subsequent cash levels are related to the level of dividends paid in a given year. Indeed it has been this assertion that led to empirical studies testing the relationship between changes in dividends and future changes in liquidity. Interestingly, this relationship has not been empirically tested as extensive as the dividend–profitability hypothesis.



Kale and Noe (1990) reinforced the work of John and Williams (1985) and suggested that dividends are a signal of the stability of a firm's future cash flows. The authors further asserted that it is only firms with the confidence of an improvement in cash flows which can use increase their dividend payout. To test the ability of dividends to convey information regarding future cash flows, Thanatawee (2014) used data from 2000 to 2008 and employed the Pearson correlation matrix. The authors found that firms that expected an increase in liquidity always increased dividends in the prior year.

Kauko (2012) developed a model which showed that dividends are an important source of information regarding future liquidity in banks. Findings from this study showed a significant and positive relationship between dividends and liquidity. Kauko (2012) attributed this relationship to the need by managers to calm information sensitive investors in the banking industry.

Forti and Schiozer (2015) investigated whether Brazilian banks use dividends to signal the quality of their assets as well as expected liquidity levels. The authors' major observation, especially in the Brazilian financial market, was that banks increase dividends to signal an improvement in liquidity to information-sensitive depositors.

To date, studies exploring the ability of dividend changes to signal changes in expected liquidity levels have only limited to developed countries. This makes this study to be of utmost importance in the South African context as it goes beyond examining the ability of dividends to signal future profitability and also extends the dividend signalling concept to liquidity.

### **The dividend signalling of gearing**

A handful of researchers investigating dividend signalling suggested extending empirical tests to the signalling of subsequent debt levels (Galai and Wiener, 2013). According to Geske and Delianedis (2001), the dividend payout policy is one of the main factors that explain a firm's future observed long term and short term credit level and spread. The authors used a sample of US-based firms from 1991 to 1998 and found that microeconomic variables such as dividends had little or no significant impact on credit levels and spread.

Aivazian, Booth and Cleary (2003) examined the relationship between dividend policy and the debt ratio. The authors used two comparative samples of firms with the first sample consisting of firms from eight emerging bank-oriented markets while the second sample was made of American-based firms. It was observed that firms which experienced high debt ratios paid low dividends in preceding years and vice versa.

Using Merton's model, Galai and Wiener (2013) showed that a firm's dividend policy impacts the value of debt and equity. In that same year, Bijia (2013) used data from Hong Kong to evaluate whether dividend increases led to changes in financial leverage. The author found that instead of leading to decreases in leverage, firms which increased dividends experienced an increase in financial leverage from 37% to 45%.

A closer look at the small number of studies carried out on dividend signalling of future gearing indicates how there still is work to be done to solve the dividend puzzle. This is

especially true in the South African context considering the glaring absence of empirical evidence that test whether dividend changes could possible carry information regarding the gearing of a firm.

### **Signalling of various aspects of financial performance**

Recently, the question of whether dividend signalling should be limited to one measure of financial performance or not has become a subject for debate in finance circles (Vieira, 2005). This emanates from Brigham and Houston (2007)'s assertive remark that the dividend policy adopted by a firm is a crucial determinant of its overall financial performance. Indeed it has been the link between dividend policy and overall financial performance that prompted authors such as Vieira (2005), Vieira and Raposo (2007), Bijia (2013) as well as Enekwe et al. (2015) to investigate the dividend signalling hypothesis using different measures of financial performance in order to decipher the exact financial performance measure signalled when managers change the dividend policy

Vieira (2005) examined the relationship between dividends and profitability measures such as earnings, ROA and ROE but also extended the same signalling hypothesis to liquidity and gearing as was measured by the current ratio and debt to equity ratios respectively. Incorporating all these various measures of financial performance enables one to determine the exact aspect(s) of financial performance signalled via dividend changes.

Bijia (2013) examined whether managers could use dividends to signal changes in future profitability, gearing as well liquidity. The author used ROA for profitability while the debt to equity and current ratios were measures of gearing and liquidity respectively. The author found that lower dividend payout were associated with lower cash levels as was evidenced via lower current ratios in years preceding dividend announcements. Moreover, decreases in dividend payout were associated with high gearing levels as was reflected by an increase in the DER while there was a decline in ROA for firms that increased their dividend levels.

Moscu, Grigorescu and Prodan (2014) extended the study of Vieira (2005) to the Bucharest market with slight variations of variables for financial performance. The author sought to determine whether there is a correlation between the dividend policy a firm adopts and future corporate performance. Data such as ROA, ROE, Tobin Q, market to book ratio and free cash flow was collected for 55 listed firms listed on from 2010 to 2013. The author found that dividends carried signals regarding a firm's profitability measured by both ROA and ROE. The author, however, could not find enough evidence to support the relationship between dividends and liquidity as well as gearing.

Based on the different results obtained from the above key studies, it becomes clear that using one measure of financial performance might not show the exact information embedded in the signals carried by changes in dividends. It seems the most objective way to try and solve the dividend signalling puzzle would be to ensure that various performance ratios are examined before making conclusions regarding the exact information embedded in dividends.

### **METHODOLOGY**

Henning, Van Rensburg and Smit (2004) defined positivistic researchers as researchers who assume a stance of realism, whereby a certain reality is assumed to exist and can be perceived with total accuracy. Studies which adopt this line of reasoning use scientific methods and hypothesis testing to enhance precision in understanding relationships among variables (Henning, et al., 2004). Following the work of Henning et al. (2004), this study adopted a positivism paradigm since it used hypothesis testing to investigate relationships between dividends and measures of financial performance.

The study was correlational and inferential and was analysed through quantitative methods. Furthermore, the study used longitudinal or panel secondary data to achieve the set objectives. The target population of the study consisted of 44 South African non-financial firms listed on the Johannesburg Stock Exchange (JSE) operating in the post-apartheid period whose financial information was available on the INET-BFA database from 1995 to 2016 and consistently paid dividends from 1995-2016. This, therefore, meant that firms with dividend initiations and omissions were excluded from the population of the study as these extreme changes in dividend payment patterns have different effects on financial performance in comparison with consistent dividend payments (Shahwan, 2015). Excluding firms with dividend omissions also enabled the study to be consistent and comparable with studies by authors such as Nissim and Ziv (2001) and Grullon et al. (2005).

In order to ensure industrial representativeness, firms in the target population were stratified per industry and then randomly selected without replacement into the final sample. This enabled every firm in the population to have a chance of being selected as was substantiated by Barreiro and Albandoz (2001). In the end, the sample had a balanced panel comprising 35 firms across different industries thus making the number of observations in the panel to be 735 dividend observations.

### Description of variables

The study used headline earnings per share as the one of the dependent variables for profitability. Using headline earnings seemed relevant since it a prerequisite for all companies listed on the JSE to calculate headline earnings for every financial year. Headline earnings were calculated as earnings excluding separately identifiable re-measurements, net of tax (Steenkamp 2013). This figure was then scaled by the number of shares issued. The change in earnings was determined as  $\Delta E_{i,t} = \frac{E_{i,t} - E_{i,t-1}}{E_{i,t-1}}$  following methodology by Nissim and

Ziv (2001), where  $E_{i,t}$  represents earnings for firm  $i$  in year  $t$  while  $E_{i,t-1}$  are earnings in for firm  $i$  in the previous year,  $t-1$ .

Furthermore, ROA was used as a preferred additional measure of profitability, apart from headline earnings since it is not sensitive to changes in capital structure compared to its common counterpart, ROE (Nissim and Ziv, 2001). ROA was calculated as total profit before interest and tax scaled by the book value of assets (Gitman and Zutter, 2011). Changes in ROA were determined as  $\Delta ROA_{i,t} = \frac{ROA_{i,t} - ROA_{i,t-1}}{ROA_{i,t-1}}$  with  $ROA_{i,t}$  representing ROA in year  $t$  for

firm  $i$  while  $ROA_{i,t-1}$  shows ROA for firm  $i$  in year  $t-1$ . Additionally, the current ratio was used as a measure of firm liquidity, using the ratio between current assets and current liabilities while the debt to equity ratio as is measured by total debts divided by total equity was used

as a gearing measure. Changes in the current ratio and the debt to equity ratio were calculated using a formula similar to the one used for headline earnings and ROA.

The dividend payout ratio was used as a proxy for dividend policy following a convincing argument by Thomas (2010) that a firm's dividend payout ratio tends to follow the life cycle of a firm, starting extremely low when the firm is in a high growth phase, gradually increasing as the firm reaches its maturity phase and its growth prospects decrease. The dividend payout ratio was calculated for all firms as the dividend per share scaled by earnings per share (Kapoor, 2009). Using the payout ratio enabled this study to be comparable in methodology with studies by authors such as Arnott and Asness (2003), Murekefu and Ouma (2012), Njonge (2014) and Montgomery (2015). Changes in the payout ratio were calculated as

$$\Delta DPR_{it} = \frac{DPR_{it} - DPR_{it-1}}{DPR_{it-1}}$$
 with  $DPR_{it}$  showing the payout ratio for firm  $i$  in year  $t$  while  $DPR_{it-1}$  reflects the payout ratio followed in the previous year,  $t-1$ .

The author controlled for factors such as firm size and level of growth as they have an influence on financial performance (Manneh, 2014). Following recommendations by Chipeta (2012), the natural logarithm of total assets was used as a proxy for firm size while growth was controlled for using the ratio of market to book value of equity.

### **Model of estimation**

Taking into account the work of Vieira (2005), the author used dynamic panel models, which had lagged dependent variables. Lagged dependant variables were included following Fama and French's (2000) assertion that firm's past performance influences its future performance.

According to Chipeta (2012), panel data can be estimated using either a fixed effects model (FEM), a random effects model (REM) or pooled ordinary least squares (OLS). However, according to the authors, it is of utmost importance to ensure that the correct model is used as it has a bearing on the outcome of the study.

According to Asteriou and Hall (2007), a fixed effects model can be used in the presence of firm specific factors such as geographic location which have an effect on financial performance yet remain fixed over time. On the other hand, the random effects can be used if there are no omitted variables in the model or if there are omitted variables which are uncorrelated with the explanatory variables that are in the model (Chipeta, 2012). Finally, Chipeta (2012) noted that pooled OLS can be used if there is no distinction between firms, an assumption which may be difficult to maintain especially in this case where firms were chosen from various industries.

### **Estimation technique for the dividend signalling of earnings**

The estimation technique for the ability of dividends to signal changes in earnings was based on the mean reversion model by Fama and French (2000) and methodology by Nissim and Ziv (2001), Grullon et al. (2005) and Vieira (2005). According to the authors, financial performance, especially profitability is mean reverting due to factors such as market forces, competition and new entrants. Moreover, the authors asserted that models designed to determine financial performance must account for the relationship between past and expected performance as past performance influences future performance. As a result, this study controlled for the mean reversion of earnings by adding a dummy variable which takes

the value of 1 when earnings revert from positive values and included a lagged performance variable to account for the influence of past performance on future performance.

Based on the preceding discussion, equation (3) below was modelled to determine if changes in earnings can be explained by changes in the dividend payout ratio controlling for firm size and growth.

$$\Delta E_{i,t} = \alpha + \beta_1 \Delta DPR_{i,t-1} + \beta_2 E_{i,t-1} + \beta_3 PDFED_{i,t-1} + \beta_4 SIZE_{i,t-1} + \beta_5 GROWTH_{i,t-1} + u_{i,t-1} \quad (3)$$

where  $PDFED_{i,t}$  is a dummy variable which takes the value of 1 when earnings are reverting from a value which is positive otherwise it is 0 and  $u_{i,t}$  is the composite error term made up of  $u_i + v_{i,t}$  with  $u_i$  representing unobserved, time invariant and firm specific effects (fixed effects) while  $v_{i,t}$  is a stochastic term.

#### Estimation technique for the dividend signalling of ROA

Using an estimation equation similar to equation (3), equation (4) was constructed as follows:

$$\Delta ROA_{i,t} = \alpha + \beta_1 \Delta DPR_{i,t-1} + \beta_2 ROA_{i,t-1} + \beta_3 PDFED_{i,t-1} + \beta_4 SIZE_{i,t-1} + \beta_5 GROWTH_{i,t-1} + u_{i,t-1} \quad (4)$$

#### Estimation technique for the signalling of liquidity

The following equation was used to estimate the relationship between changes in dividends and future changes in liquidity:

$$\Delta CR_{i,t} = \alpha + \beta_1 \Delta DPR_{i,t-1} + \beta_2 CR_{i,t-1} + \beta_3 PCR_{i,t-1} + \beta_4 SIZE_{i,t-1} + \beta_5 GROWTH_{i,t-1} + u_{i,t-1} \quad (5)$$

Whereby  $CR_{i,t}$  is a lagged liquidity variable to capture the relationship between past and future liquidity levels,  $PCR_{i,t}$  is a dummy variable which capture the reversion of financial performance.  $PCR_{i,t}$  is 1 (0) when a firm's liquidity position reverts from a positive (negative) value to the industry mean and  $u_{i,t-1}$  is the error term.

#### Estimation technique for the signalling of gearing

To investigate whether changes in dividends are related to changes in future debt levels, equation (6) was modelled similar to equation, (3), (4) and (5) above:

$$\Delta DER_{i,t} = \alpha + \beta_1 \Delta DPR_{i,t-1} + \beta_2 DER_{i,t-1} + \beta_3 PDER_{i,t-1} + \beta_4 SIZE_{i,t-1} + \beta_5 GROWTH_{i,t-1} + u_{i,t-1} \quad (6)$$

$PDER_{i,t-1}$  is a dummy variable takes the value 1 in the event that the firm was reverting from a low debt position, otherwise it is 0.

#### Specification and diagnostic tests

In order to choose between FEM and REM, the author ran a Hausman (1978) test which followed a chi-squared test with degrees of freedom equal to the number of regressors and a

null hypothesis that the random effects model was suitable. In the event that the Hausman (1978) test supported the use of the fixed effects model, Greene (2003) recommended further running a fixed effects test to determine whether including period fixed effects would be relevant or not with the null hypothesis that all the firms in the sample are the same, hence allowing for the use of pooled OLS. To determine whether fixed effects were relevant, the F-Chow test was used.

The author also tested for the undesirable correlation of residuals across entities using the Pesaran CD test with the null hypothesis that residuals across firms are not correlated (Chipeta, 2012). Moreover, heteroskedasticity and serial correlation tests were conducted using the Breusch-Pagan and the Breusch-Godfrey tests as since heteroskedastic and serial correlated error terms could lead to incorrect inference especially in hypothesis testing. In the event of heteroskedasticity and serial correlation, the researcher used Newey and West's HAC Consistent Covariance or White's estimators which are consistent in the presence of both heteroskedasticity and autocorrelation and are built into Eviews.

Running the above tests ensured the validity of data hence making the findings of this study to be generalisable to the population.

**RESULTS INTERPRETATION AND DISCUSSION**

The section shows results of tests conducted with tables 1 and 2 showing Descriptive Statistics and the Hausman test results respectively. Regression results are presented in tables 3 to 6. Furthermore, Tables 1 to 2 show the Hausman (1978) test and descriptive statistics respectively.

**Descriptive Statistics**

Table 1 below shows the descriptive statistics of the variables used in the analysis. The dividend payout ratio seems to be widely spread with a standard deviation of 2.304359. In fact, firms with the most liberal dividend policy paid 136.6772 % of their earnings as dividends while on average, firms paid only 3.6993 % of earnings as dividends since 1995. This spread of dividends compares similarly to Benartzi et al.'s (1997) sample. Benartzi et al. (1997) attributed this discrepancy with differences in firm size and industry dynamics, especially considering that firms were selected from different industries across South Africa. The same could be said about earnings which have a mean of 0.23 per share yet some firms reported a maximum of R79.31 per share whilst others only had a meagre -16.63 earnings per share.

The current ratio, Debt to equity and size seem to be less widely spread compared to the other variables with a standard deviation of 0.438537, 0.835773 and 0.655182 respectively. However, size and industrial differences still could have contributed to the huge variance between the maximum and minimum reported figures.

*Table 1: Descriptive Statistics*

Variable	Mean	Median	St. Dev	Min	Max
----------	------	--------	---------	-----	-----



Dividend Payout	0.036993	-0.002288	2.304359	-38.50000	13.66772
Earnings	0.229671	0.134539	3.081515	-16.62500	79.30667
ROA	0.010825	-0.000332	2.022804	-44.52850	14.29752
Current Ratio	0.069610	0.010327	0.438537	-0.774390	4.998592
Debt to Equity	0.094036	-0.022642	0.835773	-0.777778	15.25000
Size	0.149904	0.122436	0.655182	-0.971995	11.61709
Growth	0.246034	0.022599	2.081188	-0.989839	46.69231

Since panel data can be estimated using FEM, REM or OLS, a Hausman test was conducted to determine the appropriate model amongst the three. Table 2 below shows the Hausman (1978) test results.

*Table 2: Hausman test results*

Regression model	P-value
Signalling of earnings	0.0000
Signalling of ROA	0.0000
Signalling of liquidity	0.0000
Signalling of gearing	0.0000

Since the null hypothesis was that the REM was appropriate, a p-value of 0.0000 for all models meant that the FEM yielded consistent results. The F-Chow test also revealed results in favour of FEM.

In order to determine whether dividend changes could send signals about changes in expected earnings, ROA, liquidity and gearing, the author carried out regression tests using the FEM with results presented in *Table 3* below.

*Table 3: Dividend signalling of earnings*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.544319	1.219756	-0.446253	0.6556
DPR_(-1)	0.172225	0.113089	1.522917	0.1283
E_(-1)	-0.064962	0.055402	-1.172559	0.0240
GROWTH_(-1)	-0.013226	0.010022	-1.319653	0.1874
SIZE_(-1)	0.075844	0.081770	-0.927535	0.0355
PDFED(-1)	-2.916322	1.265385	0.645082	0.0011

The results show a positive relationship between dividends and earnings, an outcome which is in line with not only the dividend signalling hypothesis but also with Arnott and Asness' (2003) results that firms which pay liberal dividends experience increases in earnings. However, these results are not significant to warrant such a conclusion, thus reinforcing findings by Benartzi et al (1997) and Grullon et al. (2005) that, after controlling for mean reversion and auto correlation of earnings, changes in earnings cannot be explained by changes in dividends.

As expected, *PDFED*, which is a dummy which captures the mean reversion process, reveals that firms which had positive earnings in the previous year suffer a decrease in earnings in preceding years as shown by a negative coefficient of -2.916322. PDEF also shows a significant p-value of 0.0011 proving Fama and French's (2000) mean reversion theory.

Moreover, firm size was positively and significantly related to earnings echoing Pervan and Visic's (2012) assertion that the larger a firm is, the more economies of scale it enjoys, hence increasing its profitability. These findings are consistent with findings by Thanatawee (2014) in Thailand and Mui and Mustapha (2016) using evidence from Malaysia.

The variable *GROWTH* showed a negative relationship with earnings, an expected outcome since firms with high growth prospects invest funds which they would otherwise have used to generate profit (Mui and Mustapha, 2016).

Table 4: Dividend signaling of ROA

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.492102	3.397421	-1.027868	0.3044
DPR_	0.013101	0.064231	0.203962	0.8384
ROA_(-1)	0.141662...	0.053555	-2.645162	0.0084
SIZE_	0.157066	0.103139	1.522855	0.1283
GROWTH_	0.002812	0.014694	0.191340	0.8483
PDFED	-3.53384...	3.459592	1.021462	0.3074

The results above show a positive relationship between dividend payout ratio and ROA. Like the dividend-earnings test results above, the relationship is also not significant with a *p-value* of 0.8384. Interestingly, size is still positively related to ROA but this time the relationship is not significant. This justifies why one needs to use different measures of financial performance when examining relationships. In the case of this study, if the study only used earnings as a measure of profitability, one would have concluded that size is positively and significantly related to profitability while this study showed that size is only related to earnings per share and not necessarily significantly related to ROA. This distinction would assist with making decisions that influence size as one would know the profitability metric is impacted. However, further research may need to be done whereby the effects of size are determined for a number of profitability measures.

In the second model, growth is positively related to ROA, a finding consistent with Mui and Mustapha (2016). However, this relationship is not significant, thus indicating that changes in ROA cannot really be explained by changes in growth prospects.

It is interesting to note how both lagged earnings and lagged ROA are positively related to earnings and ROA in preceding years respectively. This could be explained by Fama and French's (2000) argument that the performance of a firm highly influences its expected performance. However, the relationship is only significant for between lagged and expected ROA showing a *p-value* of 0.0084.

Table 5: Dividend signalling of liquidity

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.076813	0.003330	23.06426	0.0000
DPR_(-1)	0.000778	0.003264	0.238467	0.0811
GROWTH_(-1)	-0.006825	0.003586	-1.903132	0.0575
SIZE_(-1)	0.004783	0.011012	-0.434446	0.6641
CR_(-1)	-0.096758	0.034942	-2.769141	0.0058

Table 6: Dividend signalling of gearing

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.117480	0.004958	23.69609	0.0000
DPR_(-1)	-0.00379...	0.012545	0.302342	0.0762
GROWTH_(-1)	-0.014545	0.004152	-3.502775	0.0004
SIZE_(-1)	-0.031265	0.023797	-1.313822	0.1894
DER_(-1)	-0.074290	0.036043	-2.061162	0.0397

The results in *tables 5 and 6* respectively indicate that past liquidity levels and debt levels are negatively and significantly related to future liquidity and debt levels as is shown by negative coefficients of -0.096758 and -0.074290 and *p-values* of 0.0058 and 0.0397. These results indicate that firms with high liquidity levels would experience a decline in liquidity levels if their preceding years. This outcome could be due to the fact that most firms would find it unbeneficial to maintain current ratios way over the standard 2:1, thus prompting them to use excess funds for investments, thus causing the high liquidity levels to deplete (Gitman and Zutter, 2011). Similarly, firms with high debt levels may end up using alternative sources of capital to fund projects instead of piling on debt, thus causing a decline in the debt to equity ratio (Gitman and Zutter, 2011).

Both tests for the signalling of liquidity and gearing revealed that changes in dividend payout ratios can explain future changes in liquidity and gearing levels. Precisely, DPR show a positive coefficient of 0.000778 showing a positive relationship between prior year dividend levels and expected liquidity levels, with the relationship being significant at 10% level of significant. Moreover, DPR is negative and significantly related to future debt levels indicating that firms will pay less debts when expecting the debt level to go up, with the relationship significant at 10%.

These findings support Bhattacharya's (1979) hypothesis that the dividend policy adopted by a firm may potentially send signals regarding expected cash flows especially from assets. The dividend-gearing test also support Mworira (2016)'s argument that firms can only increase their dividends when they expect their liabilities to go down and vice versa. Results from the last two tests are important as they justify the need to not limit the dividend signalling hypothesis to profitability measures only.

Table 7: Diagnostics tests

Name of test	Null hypothesis	Results
Breusch-Pagan LM test for heteroskedasticity	Homoskedasticity LM < Obs. Value	LM =0.281436 Chi Square observed value = 9.487729
Pesaran CD cross dependence test	No cross dependence	p-value = 0.6630
Breusch Godfrey test	No Serial Correlation	p-value= 0.000

Based on the Breusch-Pagan test for heteroskedasticity, the LM < Chi Squared value thus causing the researcher to fail to reject the null hypothesis of homoscedasticity. Results from the Pesaran CD also revealed the absence of cross dependence, thus making the results from hypothesis testing to be valid. On the other hand, the Breusch- Godfrey test revealed the presence of correlation. The author used Newey and West (1987)'s HAC Consistent Covariance estimator to ensure that the effect of serial correlation was countered.

### CONCLUSION AND AREAS FOR FURTHER RESEARCH

This objective of the study was to determine which aspect of financial performance is signalled when firms change dividends. Drawing on recommendations by Vieira (2005), different hypothesis were modelled to estimate if changes in earnings and ROA are explained by changes in prior dividend patterns. The split between earnings and ROA was due to the fact that some authors argue that firms only increase dividends when earnings have increased while other argue that ROA captures the true operational efficiency of a firm.

Unlike most dividend signalling studies which limit the dividend signalling hypothesis to earnings, the study included the signalling of liquidity and gearing in order to capture the essence that dividends can reflect the overall performance of a firm. Interestingly, the results showed that changes in earnings and ROA are not explained by changes in dividends, a finding consistent with studies by Benartzi et al. (1997), Grullon et al. (2005) and Vieira (2005).

This study filled in a vital research gap, especially in South Africa where other dividend signalling hypothesis has not been explored. The positive and significant relationship between dividends and the current ratio echoes Bhattacharya's (1978) theory that firms increase dividends when there is a permanent shift in liquidity.

The results also substantiate the dividend-debt test which showed negative yet significant relationship between dividends and subsequent debt. This showed evidence of the ability of dividends to signal changes in expected debt.

Based on the results from the study it seems that carrying out the study with various financial performance ratios can enable one to understand the financial performance measures affected by dividends. Limiting the dividend signalling hypothesis to profitability would be folly as this study proved that in instances when managers are not sending signals regarding profitability, they could be sending information about an improvement in liquidity and gearing. The author, therefore, recommends for dividend signalling studies to not only test whether

dividends are related to earnings, ROA or ROA but extend the test to various measures of liquidity and gearing.

Findings from this study could help investors who are interested in investing in certain firms to gauge the financial health of a firm especially in instances where dividends signal improvements in liquidity or liabilities. Credit providers can also benefit as they can use signals sent via dividend changes to determine whether or not to approve or extend loans for certain firms.

The author only used data from INET BFA to get data for South African listed companies as data was not consistently available for unlisted firms. Moreover, only firms who operate in South Africa were considered for the study as it was impractical to extend this study to all firms in the world. Finally, a discussion of whether dividends carry short term or long term signals was beyond the scope of this study. The study only sought to decipher the exact signals embedded in dividends.

Other authors can use this study as a foundation and carry out further research to see if managers can also use dividends to send signals regarding other aspects of financial performance other than the ones used in this study. Moreover further research can be carried out to determine whether these signals are long term or short term in nature.

## REFERENCES

- Abrahamsen, S. and Balchen, T.W. 2010. Do Dividends Predict Future Firm Performance? Master of Science in Business and Economics. Norwegian School of Management, Oslo.
- Adelegan, O.J. 2003. 'An Empirical Analysis of the Relationship between Cash Flow and Dividend Changes in Nigeria', *African Development Review*, 15(1): 35–49. doi:10.1111/1467-8268.00061
- Aivazian, V., Booth, L., & Cleary, S. 2003. 'Dividend Policy and the Organization of Capital Markets', *Journal of Multinational Financial Management*, 13: 101-121.
- Arnott, R.D. and Asness, C.S. 2003. 'Surprise! Higher Dividends = Higher Earnings Growth', *Financial Analysts Journal*, 59(1): 70-78.
- Asem, E. and Kaul, A. 2014. Dividend Changes and Future Earnings: A Conditional Analysis. Research paper in the School of Business. University of Lethbridge, Canada.
- Asteriou, D and Hall, S.G. 2007. Applied Econometrics: A modern approach using Eviews and Microfit. New York: Palgrave MacMillan.
- Baker, M. and Wurgler, J. 2011. Dividends as Reference Points: A Behavioural Signalling Model. NBER Working Paper 18242. Available from: <http://www.nber.org/papers/w18242.pdf> [Accessed: 17 August 2015].

- Barreiro, P.L. and Albandoz, J.P. 2001. Population and sample. Sampling techniques. Working Paper. Management Mathematics for European Schools.
- Benartzi, S., Michaely, R. & Thaler, R. 1997. 'Do changes in dividends signal the future or the past?' *The Journal of Finance*, 52(3): 1007-1034. Available from <<http://www.jstor.org/stable/2329514> > [Accessed: 23 May 2015].
- Bernstein P., L. 1996. *Against the gods: The remarkable story of risk*. New York: Wiley.
- Bessler, W. and Nohel, T. 2000. 'Asymmetric information, dividend reductions, and contagion effects in bank stock returns', *Journal of Banking & Finance*, 24(11): 1831-1848.
- Bhattacharya, S. 1979. 'Imperfect information, dividend policy and the 'bird-in-hand' fallacy', *Bell Journal of Economics*, 10(1): 259 -270.
- Bijia, C. 2013. The Dividend Initiation Decisions Of Newly Listed Companies in Hong Kong: Does Dividend Initiation Signal Firm Prosperity? Honors Research Project. Hong Kong Baptist University, Hong Kong.
- Black, F. 1976. 'The dividend puzzle', *Journal of Portfolio Management*, 2(2): 5-8
- Bradley, M., Capozza, D.R. & Seguin, P.J. 1998. 'Dividend Policy and Cash-Flow Uncertainty', *Real Estate Economics*, 26(4): 555-580.
- Brigham, E. and Houston J. 2007. *Fundamentals of Financial Management*. 11<sup>th</sup> ed. Ohio: Thompson South Western.
- Charitou, A. and Vafeas, N. 1998. 'The Association Between Operating Cash Flows and Dividend Changes: An Empirical Investigation', *Journal of Business Finance & Accounting*, 25(1-2): 225-249. doi/10.1111/1468-5957.00185
- Chipeta, C. 2012. FINANCIAL LIBERALISATION AND THE CAPITAL STRUCTURE OF FIRMS LISTED ON THE JOHANNESBURG STOCK EXCHANGE. Unpublished doctorate thesis. University of Pretoria, South Africa.
- Denis, D., Denis, D., & Sarin, A. 2009. 'The Information Content of Dividend Changes: Cash Flow Signaling, Overinvestment, and Dividend Clienteles', *Journal of Financial and Quantitative Analysis*, 29(4): 567-587. Doi: 10.2307/2331110
- Enekwe, C.I., Nweze, A.U. & Agu, C.I. 2015. 'The Effect Of Dividend Payout On Performance Evaluation: Evidence Of Quoted Cement Companies In Nigeria', *European Journal of Accounting, Auditing and Finance Research*, 3(11): 40-59.
- Eniola, O.J. and Akinselure, O.P. 2016. 'Impact of Dividend Policy and Earnings on Selected Quoted Companies in Nigeria', *International Journal of Innovative Research and Development*, 5(6): 450-450.



- Fama, E.F., and French, K.R. 2000. 'Forecasting Profitability and Earnings', *Journal of Business*, 73 (2): 161–75.
- Farsio, F., Geary, A. and Moser, J. 2004. 'The Relationship between Dividends and Earnings', *Journal for Economic Educators*, 4(4): 1-5.
- Forti, C. and Schiozer, R.F. 2015. 'Bank dividends and signalling to information-sensitive depositors', *Journal of Banking & Finance*, 56: 1-11.
- Frankfurter, G.M. 1999. 'What Is the Puzzle in "the Dividend Puzzle"?', *Journal of Investing*, 8(2): 76-85.
- Galai, D and Wiener, Z. 2013. 'Stakeholders and the composition of the voting rights of the board of directors', *Journal of Corporate Finance*, 14(2): 107-117.
- Geske, R.L and Delianedis, G. 2001. The Components of Corporate Credit Spreads: Default, Recovery, Taxes, Jumps, Liquidity, and Market Factors. Unpublished Working Paper.
- Gitman, L.J. and Zutter, C.J. 2011. Principles of Managerial Finance: Brief. 6<sup>th</sup> ed. Australia: Pearson.
- Greene, W.H. 2003. Econometric Analysis. 5<sup>th</sup> ed. New Jersey: Prentice Hall.
- Gullon, G., Michaely, R. & Swaminathan, B. 2002. 'Are Dividend Changes A Sign of Firm Maturity?' *Journal of Business*, 75(3): 387–424.
- Gullon, G., Michaely, R., Benartzi, S. 2003. 'Dividend Changes Do Not Signal Changes in Future Profitability', *Social Science Research Network*, 1-33.
- Gullon, G., Michaely, R., Benartzi, S. & Thaler, R.H. 2005. 'Dividends Changes Do Not Signal Changes in Financial Performance', *Journal of Business*, 78(5): 1659-1682.
- Hausman, J. 1978. 'Specification Tests in Econometrics' *Econometrica*, 46(1): 1251-1271.
- Henning, E., Van Rensburg, W. & Smit, B. 2004. *Finding your way in qualitative research*. Pretoria: Van Schaik.
- Huang, C., You, C. & Lin, S. 2009. 'Dividend payout ratios and subsequent earnings growth: evidence from Taiwanese stock-listing companies', *Investment Management and Financial Innovations*, 6(2): 83-97.
- Iqbal, M. (2014). Effectiveness of Signalling Theory in Pakistan - Testing The Relationship between Current Dividends and Future Profit. Paper presented at the *9th International Academic Conference*, 13 April 2014, Istanbul, Turkey.
- John, K. and Williams, J. 1985. 'Dividends, Dilution, and Taxes: A Signalling Equilibrium', *The Journal of Finance*, 40 (4): 1053-1070.

- Joos, P.R. & Plesko, A. 2004. Costly Dividend Signalling: The Case of Loss Firms with Negative Cash Flows. Working Paper, Massachusetts Institute of Technology.
- Kale, J.R. and Noe, T.H. 1990. 'Dividends, Uncertainty, and Underwriting Costs under Asymmetric Information', *Journal of Financial Research*, 13(4): 265-277. Available from: < <http://dx.doi.org/10.1111/j.1475-6803.1990.tb00631.x>> [Accessed: 12 August 2016].
- Kapoor, S. 2009. Impact of Dividend Policy on Shareholders' Value: A Study of Indian Firms. Unpublished doctor of philosophy thesis. JayPee Institute of Information Technology University, Noida, India.
- Kauko, K., 2012. 'External deficits and non-performing loans in the recent financial crisis', *Economics Letters*, 115(2): 196-199.
- Lee, K.F. 2010a. 'An Empirical Study of Dividend Payout and Future Earnings in Singapore', *Review of Pacific Basin Financial Markets and Policies*, 13: 267-286.
- Lee, K.F. 2010b. 'The Information Content of Dividend Policy on Future Earnings in Australia: A VECM Approach', *International Research Journal of Finance and Economics*, 49: 68-86.
- Lee, S.P., Isa, M. & Lim, W.L. 2012. 'Dividend changes and future profitability: evidence from Malaysia', *Asian Academic of Management Journal of Accounting and Finance*, 8(2): 93-110.
- Lintner, J. 1956. 'Distribution of incomes of corporations among dividends, retained earnings, and taxes', *American Economic Review*, 46: 97- 113.
- Lukose, J., and Rao, S.N. 2010. 'Dividend changes and profitability: An empirical study of Indian manufacturing firms', *The IUP Journal of Applied Finance*, 16(1): 5-26.
- Manneh, M.B.A. 2014. Determinants of Dividend Policy: Evidence from Non-Financial Companies Listed on Abu Dhabi Securities Exchange (ADX). Master's Thesis. Cardiff Metropolitan University, Cardiff, UK.
- Mbithi, E.M. 2014. The Relationship between Interim Dividend Changes and Future Earnings for listed Companies in Kenya. Master of Commerce thesis. Strathmore University, Kenya.
- Montgomery, L. 2015. The Relationship between Dividend Payout and Subsequent Earnings Growth: A South African Study. Master of Commerce Research Report. University of Cape Town, South Africa.
- Moscu, R.G., Grigorescu, C.J. & Prodan, L. 2014. 'Dividend Policy and Payout Ratio. Evidence from Bucharest Stock Exchange', *Knowledge Horizons-Economics*, 6(4): 25-29.
- Mui, Y.T. and Mustapha, M. 2016. 'Determinants of Dividend Payout Ratio: Evidence from Malaysian Public Listed Firms', *Journal of Applied Environmental and Biological Sciences*, 6(1S): 48-54.

- Murekefu, T.M. and Ouma, O.P. 2012. 'The relationship between dividend Payout and firm performance: A study of listed firms in Kenya', *European Scientific Journal*, 8(9): 199-125.
- Mworia, V.G. 2016. The Relationship Between Financial Leverage And Dividend Pay Out Ratio Of Firms Listed At The Nairobi Securities Exchange. MBA Research Project. University of Nairobi, Kenya
- M'rabet, R. and Boujjat, W. 2016. 'The Relationship Between Dividend Payments And Firm Performance: A Study of Listed Companies in Morocco', *European Scientific Journal*, 12(4): 469-482.
- Nissim, D. and Ziv, A. 2001. 'Dividend changes and future profitability', *Journal of Finance*, 56(6): 2111-2133. Available from: <<http://www.jstor.org/stable/2697818>> [Accessed: 12 May 2015].
- Njonge, P.N., 2014. The effect of dividend policy on share prices of companies listed at the Nairobi securities exchange Doctoral dissertation. University of Nairobi, Kenya.
- Oliveira, R.D.F., Schiozer, R.F. and Barros, L.A.D.C., 2015. 'Depositors' Perception of "Too-Big-to-Fail"', *Review of Finance*, 19(1): 191-227.
- Pervan, M. and Visic, J. 2012. 'INFLUENCE OF FIRM SIZE ON ITS BUSINESS SUCCESS', *Croatian Operational Research Review*, 3: 213-223.
- Pandey, I.M. 2015. *Financial Management*. 11<sup>th</sup> ed. Noida: Vikas Publishing House.
- Shahwan, T.M. 2015. 'The effects of corporate governance on financial performance and financial distress: evidence from Egypt', *Corporate Governance*, 15(5): 641 – 662. Available from: <http://dx.doi.org/10.1108/CG-11-2014-0140> [Accessed: 12 May 2016]
- Sharma, F.C. 2015. *Financial Management*. SBPD Publishers. Available from: <[http://sahityabhawan.com/index.php?route=product/product&filter\\_name=8931&product\\_id=187](http://sahityabhawan.com/index.php?route=product/product&filter_name=8931&product_id=187) > [Accessed: 23 July 2016].
- Steenkamp, M. 2013. Headline Earnings per share (HEPS)-Part 2 How to calculate heps. Available from: <<http://www.rsmbettyanddickson.co.za/Articles/Article-Heps-How-to-calculate-Part2.aspx>> [Accessed: 20 September 2015].
- Thanatawee, Y. 2014. 'Life-Cycle Theory and Free Cash Flow Hypothesis: Evidence From Dividend Policy in Thailand', *International Journal of Financial Research*, 2(2): 52-60
- Thomas, P.Y. 2010. Towards developing a web-based blended learning environment at the University of Botswana. Doctoral dissertation. University of South Africa, South Africa.
- Velnampy, T., Nimalthasan, P & Kalaiarasi, K. 2014. 'Dividend Policy and Firm Performance: Evidence from the Manufacturing Companies Listed on the Colombo Stock Exchange', *Global Journal of Management and Business Research: Administration and Management*, 14(6): 63-68.

Vermeulen, M. 2011. Dividend payout and future earnings growth: A study of South Africa. Master's thesis. Stellenbosch University, Stellenbosch.

Vermeulen, M. Smit, E. 2013. 'Dividend payout and future earnings growth: A study of South Africa', *South African Journal of Business Management*, 42(4). Available from: <http://hdl.handle.net/10019.1/18876> [Accessed: 20 May 2015].

Vieira, E.F.S. 2005. Signalling with Dividends? New evidence from Europe. Master's thesis. University of Aveiro, Portugal.

Vieira, E.F.S. and Raposo, C. 2007. The Effects of Dividend Announcements: Evidence from a Small European Market. Working Paper.

Watts, R. 1973. 'The information content of dividends', *Journal of Business*, 46 (4): 191-211.

Wolff, J and Auret C.J. 2009. 'Do dividend changes in South Africa signal earnings changes?' *Studies in Economics and Econometrics*, 33(3): 19-38.

Zhou, P. and Roland, W. 2006. 'Dividend payout and future earnings growth', *Financial Analysts Journal*, 62(3): 58 – 69.