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Increasing dividends by industrial firms on the JSE

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UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG
FACULTY OF COMMERCE, LAW AND MANAGEMENT

INCREASING DIVIDENDS BY INDUSTRIAL FIRMS ON THE JSE

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Abstract

This research report analyses industrial firms that are listed on the JSE over the 1989 to 2009 period to determine whether dividends have been increasing or not. The importance and relevance of dividend payments are often questioned when being compared to the advantages offered by share repurchases. Fama and French (2001) find that for their sample of US industrial firms, irrespective of firm characteristics, dividend payments by industrial firms have fallen. In contrast, DeAngelo, DeAngelo and Skinner (2004) find that while dividend payments have fallen, they have fallen exclusively for the smallest group of dividend payers and this group has a negligible impact on aggregate dividend payments. Moreover, they also find evidence of earnings and dividends concentration at the top end of the earnings and dividends spectrum. DeAngelo et al. (2004) find that industrial firms are characterised by a '*two-tier'* structure and that there has been an increase in dividends of the larger dividend payers. This research report replicates the methodology of DeAngelo et al. (2004) and finds consistent with them in that there has been an increase in dividend payments of industrial firms, suggesting that dividends are relevant and important for firms that pay dividends in South Africa. However, while this paper also finds evidence of earnings concentration, the findings are not as clearly defined as those of DeAngelo et al. (2004). No support is found for the '*two-tier'* structure of DeAngelo et al. (2004).

Plagiarism declaration

I, Kaajal Makka, declare that this research report is my own, unaided work, the substance of or any part of which has not been submitted in the past for any degree or examination in this or any other university or will be submitted in the future for a degree in this or any other university. It is submitted in fulfillment of the requirements for the degree of a Masters of Commerce with a 50% Research component at the University of the Witwatersrand, Johannesburg.

_____ _____

Name of Candidate Signature of Candidate

Signed this _____day of_____ 2013 at Johannesburg.

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Increasing Dividends by Industrial Firms on the JSE

1. Introduction

The reasons as to why firms choose to pay or not pay dividends is a much debated area of corporate finance that has received much attention since the contrasting views of both Lintner's (1956) finding that dividends are a central concern in determining a firms payout policy[1] and Miller and Modigliani's (1961) *dividend irrelevance* hypothesis. The seminal work on dividend policy of Miller and Modigliani in 1961 resulted in a vast wealth of literature that analyses and tests the payout policies of firms in various countries. In a more recent extension of the dividend puzzle, Fama and French (2001) find that for industrial firms, there has been an overall reduced propensity to pay dividends, irrespective of firm characteristics. DeAngelo, DeAngelo and Skinner (2004) refute this and find that dividends are not disappearing, but they are in fact increasing and becoming more concentrated.

In light of these studies, there is no consensus as to whether dividend payments are important or not, particularly when being compared to share repurchases which appear to offer two noticeable benefits over paying dividends. The first benefit is that share repurchases are not permanent occurrences and do not force companies to ensure dividend payouts. Thus, companies do not have the same obligatory duties as they do when they begin paying dividends. The second benefit that share repurchases have over dividends is that in many cases, the taxation on dividends is lower than the taxation on capital gains. In South Africa[2], effective 01 April 2012, the Secondary Tax on Companies was replaced by Dividends Taxation. Overall, the differences between the Secondary Tax on Companies and Dividends Taxation is that the Dividends Taxation is a form of taxation imposed on shareholders at a 15% tax rate while the Secondary Tax on Companies was a form of taxation on companies paying the dividends that stood at a level of 10%. Despite the change in taxation policy, many companies in South Africa still pay dividends to their shareholders.

The main arguments put forward as to why companies still pay dividends include that dividends may act as signalling devices that convey 'signals' about the strength or quality of a firms current and future earnings by compelling managers to make dividend payments. Another

[1] Managers are aware of the impact of dividends and take it into account when considering the firms future payout policy. Managers only increase dividends if they are of the opinion that a firms earnings have increased permanently.

[2] www.sars.co.za (Accessed 04 April 2012).

argument often put forward relates to the agency theory of Jensen and Meckling (1976), whereby the payment of dividends ensures the monitoring of managers by forcing them to undergo scrutiny from the capital market. Regular dividend payments can help reduce the wastage of free cash flow by leaving less cash under the control of managers. The last major argument put forward as to why a company will pay dividends is that of dividend clienteles. According to the clientele effect, investors with specific requirements tend to either prefer or not prefer to invest in firms who pay dividends on their stock. For instance, pensioners who depend on dividend payments would want to be invested in firms that pay stable and large dividends.

Despite the potential motivations to pay dividends, the fundamental question examined by Fama and French (2001) and DeAngelo et al. (2004) is arguably the most compelling and revealing; are dividend payments increasing or not?

This paper replicates the methodology of DeAngelo et al. (2004) over the 1989 to 2009 period for JSE-listed industrial firms and finds results consistent with DeAngelo et al. (2004) in that real dividends have been increasing. This paper also finds that for South African firms, while there is support for earnings concentration, it is not as clear-cut as was found by DeAngelo et al. (2004). Additionally, this paper finds that for dividend paying firms, dividends are important, irrespective of the level of earnings. Unlike DeAngelo et al. (2004), this paper does not find support for the '*two-tier'* structure of industrial firms that comprised their sample. Thus, these findings suggest that dividends are still important and relevant to South African dividend-paying firms and shareholders invested in these firms.

This study is organised as follows: Section 2 of this paper reviews the literature around dividend signalling, agency and clienteles. Section 3 defines the research objective of this paper. Section 4 illustrates the methodology and results and Section 5 concludes the findings of this paper. Section 6 outlines areas for further research.

2. Literature Review

2.1. Dividends and Signalling

According to the signalling theory, dividend payments signal information to the market about the future prospects of the firm. This theory states that dividend payouts act as a sign that a firm has strong prospects for growth. Thus, only firms with favourable prospects would pay dividends. Further, managers set the level of dividend payments according to the assessments of future earnings of the firm, implying that dividends convey information regarding the firms' future earnings. Dividends are shown to contain information and send signals to shareholders, effectively reducing the informational asymmetry between managers and shareholders, thereby increasing shareholder wealth. According to Jensen (1986), dividends ensure that firms obtain external financing that is subject to external control.

Miller and Modigliani (1961) posit that in the presence of imperfect capital markets, an increase in the dividend payment conveys positive news to outsiders about the anticipated earnings of the firm. Kalay (1980) tests the effect of the information content of dividend reductions and finds that this hypothesis cannot be refuted. According to Penman (1983), the information content of dividends theory finds that mangers set dividend levels according to the assessments of future earnings of the firm so that with the dividend announcement, these assessments are simultaneously revealed to the market.

Aharony and Swary (1980) and Asquith and Mullins (1983) find that dividend announcements suggest more information than do other announcements. In particular, Asquith and Mullins (1983) find that dividends do communicate valuable information to shareholders. They, in conjunction with and Healy and Palepu (1988)[3], find that a slight positive relationship exists between the initiation of dividends and the anticipated profitability of a firm. Asquith and Mullins (1983) further find that market reaction to dividend payments is significantly related to the magnitude of the payout, in line with that of Lintner (1956) who finds that dividends do indeed communicate unique and valuable information. Asquith and Mullins (1983) conclude that with the initiation of dividend payments, dividend policies are important due to the informational advantage associated with them and the robust and positive market reaction to dividend initiations. Thus, they find strong support for the information contained in dividends and the

[3] As cited in Dyl and Weigand (1998).

messages they signal. Crockett and Friend (1988) state that dividends are sticky[4] therefore a firms payout ratio is strongly impacted by the firms earnings volatility. Dividends therefore provide a simple and comprehensive signal of management's views on a companies' performance. Unlike other announcements, dividend announcements must be sustained by cash. Further, cash signals are credible due to the visibility of dividend payments. DeAngelo, DeAngelo, and Skinner (1992) also find support for information contained in dividends and the messages they signal. In particular, DeAngelo et al. (1992) find that knowledge of whether a firm has significantly lowered its payout ratio vastly improves the ability of current earnings to forecast future earnings. DeAngelo et al. (1992) find support for Modigliani and Miller (1958) and Miller and Modigliani (1961) where it is found that alterations to a firms dividend policy is dependent on the expectations of managers and that a reduction of the dividend suggests that the firm has poor earnings prospects and this would only occur in what the authors define as 'imperfect markets[5]', consistent with the findings of Lintner (1956).

Denis, Denis and Sarin (1994) state that the signalling theory expects dividend changes to transmit information regarding cash flows while according to more recent research, such as Chen and Dhiensiri (2009), the signalling theory posits that dividends can convey information about the current or future level of earnings. Garrett and Priestley (2000) find robust evidence that manager's smooth dividends and find support for the notion that dividends convey information regarding the unexpected positive changes in current permanent earnings. Grullon, Michaely and Swaminathan (2002) find support for Lintner (1956) in that managers only increase dividends when they believe that the increase in earnings is permanent and sustainable and that managers exhibit an aversion to dividend reductions.

Penman (1983) finds that dividends are poor predictors of earnings. Within the signalling theory, Bernatzi, Michaely and Thaler (1997) test to see whether dividends contain information that could be signalled to shareholders over the period 1979-1991. They find that there is a more permanent earnings reaction to firms that pay dividends than for firms that do not pay dividends, thus finding limited support that dividends contain information that can be signalled to shareholders. Bernatzi et al. (1997) find that the size of a dividend payment is not a predictor of

[4] 'Dividends are said to be 'sticky' or 'inflexible' when companies decide on and follow a set dividend policy and are reluctant to change this dividend policy, through favourable and unfavourable economic times. On the other hand, 'dividend smoothing' occurs when a firm follows a predominantly constant nominal dividend payment policy with a partial adjustment when there is a change in the permanent earnings of a firm. http://www.cengage.com/resource_uploads/downloads/0324406088_44411.pdf (Accessed 06 July 2013).

[5] Recall that Miller and Modigliani (1961) determine a *perfect market* to be one with no brokerage fees, transaction costs or taxes, with all investors displaying rationality and there being perfect certainty in the market.

future earnings. Thus, they find that the increase in dividends can be seen as permanent. Kumar (1998) finds that dividend increases (decreases) indicate large improvements (deteriorations) in the firm's prospects and that dividends are still weak predictors of earnings.

Lipson, Maquieira and Megginson (1998) find that earnings increase following a dividend initiation and that the earnings surprises for firms that initiate dividends are more favourable than for non-initiating firms. Their results suggest that dividends signal about the dissimilarities in performance by otherwise equivalent firms. They highlight two justifications to the costs associated with dividends: (i) dividends are used to resolve the firms' agency problems; and (ii) dividends convey information to the market. In contrast, DeAngelo, DeAngelo and Skinner (1996[6]) find two objections to this: (i) they find sparse support that links changes in dividends to subsequent surprises in earnings; and (ii) the true amounts of cash committed are trivial in comparison the operations of a firm, thus they find little support for the signalling theory. Lipson et al. (1998) find that there is a positive reaction to the prices of firms that make dividend announcements. Lipson et al. (1998), like Fama and French (2001), find that firms that do initiate dividends are usually larger and have higher levels of profitability than firms that do not initiate dividends that went public at the same time. Lipson et al. (1998) provide limited support for the signalling impact of dividends under the assumption that firms that initiate dividends aim to differentiate themselves and their prospects in relation to other public firms. Firms that initiated dividends were found to be older, larger and more profitable, consistent with Fama and French (2001). Nissim and Ziv (2001) find support for the information content of dividends hypothesis. In particular, they find that changes in dividends provide information regarding a firm's profitability for successive years.

In 2001, Fama and French find that controlling for firms characteristics; firms over the 1978 to 1998 period exhibited an overall reduced propensity to pay dividends. They attribute this reduced propensity to pay dividends to the following phenomenon: smaller firms, more profitable firms and firms with more growth opportunities are less likely to pay dividends. Fama and French (2001) find that overall there has been a change in the characteristics of publicly traded firms towards the characteristics of firms that have never paid dividends: firms with low or negative earnings, small firms and firms following steep investment policies. DeAngelo et al. (2004) test in response to Fama and French (2001) to see whether dividends are disappearing and find that for US industrial firms, dividend payments have increased (224.6% in nominal terms

[6] As cited in Lipson, Maquieira and Megginson (1998).

and 22.7% in real terms) over the 1978 to 2000 period. DeAngelo et al. (2004) find that the increase in dividends is attributable to increasing dividends and earnings concentration, which they ascribe to the *two-tier* structure of their sample. By virtue of this *two-tier* structure of industrial firms, DeAngelo et al. (2004) find (i) there has been a reduction in dividend payers occurring almost entirely amongst the firms that paid small dividends with the loss of these dividends having a negligible impact on the aggregate dividend supply, and (ii) there was a substantial increase in dividends among the largest dividend payers which is accompanied by higher real earnings of these firms.

DeAngelo et al. (2004) rationalise that their finding of highly concentrated dividends amongst a small number of firms with significant earnings causes them to doubt that signalling is a core determinant of a firm's decision to implement a dividend policy. They affirm that if the use of dividends was to communicate to shareholders, this signalling would occur amongst small firms with limited access to the financial press and this phenomenon did not occur for their sample of industrial firms. With regard to the signalling theory, DeAngelo et al. (2004) state that due to their finding of highly concentrated dividends within a small number of firms with substantial earnings, this causes them to doubt that the reason firms pay dividends is to send signals to the market regarding the financial health of the firm.

Hanlon, Myers and Shevlin (2006) find that dividends convey information regarding future earnings that is not contained in current earnings. In their 2006 paper, Amihud and Li propose and find support for the following two propositions: (i) - *the 'disappearing dividend' phenomenon is partly due to a decline in the information content of dividend news increases and decreases*,[7]' - according to Amihud and Li (2006), if there has been a reduction in the information conveyed by dividends, firms may choose to lower costs by lowering the use of dividends to convey information; and (ii) – '*Dividend announcements are becoming less informative due to the increase in stockholdings by institutional investors that are more sophisticated and informed than average individual investors*.[8]'

Fatemi and Bildik (2012) use Fama and French's (2001) methodology and find support for their finding that there has been a reduction in the propensity to pay dividends. Consistent with Fama and French (2001), they also find that large firms, those with high levels of profitability and low

[7] Page 657.
[8] Ibid.

growth opportunities exhibit a lower propensity to pay dividends. Fatemi and Bildik (2012) analyse both civil and common-law countries and find that civil law countries have a higher propensity to pay dividends than common law countries.

In the South African market, Knight and Affleck-Graves (1978) in addition to Ooms, Archer and Smit (1978)[9] find that dividends convey little or no information other than that which is reflected in the firm's earnings. Botha, Bosch and Van Zyl (1978)[10] find that in South Africa, dividend policy does not have an impact on shareholders wealth. Selay and Knight (1987)[11] find that there exists a negative preference for dividends in South Africa and attribute this to the difference in the tax treatments between dividends and share repurchases. On the other hand, Bhana (1991, 1998)[12] finds strong support for the information content of dividends in South Africa. Nell, Hamman and Smith (2001)[13] find that in South Africa, there is no information content contained in dividends regarding future prices, but rather dividends reflect only current information, consistent with Kumar (1988) and Bernatzi et al. (1997). Marx (2001)[14] finds support for both the signalling and clientele effects of dividends. Wolmarans (2003) studies 97 South African firms and finds that the dividend decision is crucial as it affects both the investment and financing decisions of the firm. Overall, Wolmarans (2003) results suggest that various sectors exhibit unique preferences in their payout policies in South Africa.

2.2.Dividends and the Agency Theory[15]

In terms of the *agency theory* of Jensen and Meckling (1976), dividends ensure the monitoring of managers and reduce the wastage of free cash flow by managers by leaving less cash under their control. Dividends are a permanent commitment to distribute cash to shareholders whereas share repurchases are more volatile and flexible. In the event of these dividend-paying firms requiring more capital, it will have to be obtained from the capital market, where such firms will undergo capital market monitoring. Thus, dividend payments have a positive function as they restrict the ability of managers to misuse free cash flow (Easterbrook (1984) and Jensen (1986)).

[9] As cited in Firer, Gilbert and Maytham (2008).
[10] Ibid.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Ibid.
[15] The impact of agency theory on dividends is not tested in this paper but is included as informational so as to better understand the three main reasons companies choose to pay dividends as outlined in the Introduction.

Jensen and Meckling (1976) and Faccio, Lang and Young (2001)[16] find that a firms debt policy can be utilised as a means of corporate governance to lower the incidence of agency conflicts because debt compels managers to pay a periodic interest payment and thereby generates external monitoring. Easterbrook (1984) and Jensen (1986) conclude that dividends can in fact be used to reduce agency costs because firms experience higher levels of monitoring and this occurs at a reduced cost if the firm is always in the capital market. In particular, Rozeff (1982[17]) and Easterbrook (1984) find that a firms dividend policy has the power to reduce agency conflicts by compelling managers to partake in equity market activities more frequently, effectively increasing the incidence of external monitoring by the capital market. Shleifer and Roberts (1997), as cited in Officer (2006), find that agency costs emanate due to informational asymmetries that exist between majority and minority shareholders[18].

For South African firms, Bhana (1991b)[19] finds support for the role of dividends with regard to agency theory whereas Firer, Gilbert and Maytham (2008) do not. Arnott and Asness (2003) find evidence that is consistent with the agency theory in that issuing shares while paying higher dividends, while less tax efficient, could force management to experience more external scrutiny, effectively lowering the conflict of the interests between shareholders and managers and reducing the incidence of empire building. Arnott and Asness (2003) find that with a high payout ratio, there is a corresponding increase in the growth of earnings. They conclude that a low dividend payout ratio (high level of cash retention) precedes low levels of growth in earnings. The authors suggest that the existence of executive stock options may afford an enticement for managers to refrain from making dividend payments as dividends reduce the stock price on which options are valued. Therefore, a lower level of dividend payouts could lead to inefficient empire building as the firm is retaining the cash that it should have paid out to its shareholders.

Dhrymes and Kurtz (1967)[20] find that the targeting of a stable dividend policy may obstruct investment because there will be a reduction in the level of available internal funds for capital expenditure. Elston (1996) finds that a fixed dividend payout policy is undertaken when a firm

[16] As cited in Alwi (2009).
[17] As cited in Alwi (2009).
[18] Majority shareholders are persons or entities that own more than 50% of a company's outstanding stock. As these shareholders control in excess of half the voting rights, they have great influence in the operations and strategy of a firm. (http://www.investopedia.com/terms/m/majorityshareholder.asp#axzz2KUcWQShy), accessed 10 February 2013).
On the other hand, minority shareholders own less than 50% of the company's outstanding stock and very little influence on the operations and strategy of a firm.
[19] As cited in Firer et al. (2008).
[20] As cited in Elston (1996).

desires to promote stability in its payout ratio. They conclude that liquidity constraints are an important factor for the dividend policy of a firm.

Brav, Graham, Harvey and Michaely (2005) find sparse support for the agency, signalling or clientele hypotheses while support for the agency theory is found by Stacescu (2006) in that firms with vast opportunities for growth have a lower tendency to encounter free cash flow problems. On the other hand, In line with Easterbrook (1984), Jensen (1986) and Firer et al. (2008), John and Knyazeva (2006)[21] find that when weak internal and external corporate governance is present, there is a higher tendency for dividend payments to be made. Gillian, Hartzell and Starks (2006)[22] find that dividend policy and corporate governance mechanisms function as substitutes of each other. Officer (2006) concludes that corporate governance influences both the motivation of a firm to pay dividends and the market's response to the announcements of dividend initiations. In particular, Officer (2006) finds that dividend policy is a substitute for weak internal and external corporate governance. Dividend payers that exhibit weak corporate governance have a higher propensity to pay dividends than payers with stronger corporate governance. Firms with weak corporate governance policies experience a higher level of dividend initiation announcement abnormal returns and correspondingly, dividend policy is seen as a substitute to other methods of corporate governance for these firms. Renneboog and Szilagyi (2006)[23] find that among Dutch firms, those with stronger shareholders compel firms to have higher payout ratios.

Alwi (2009) studies Indonesian firms and find that a firm's dividend policy can be used as a method of corporate governance to reduce the conflict of interest between a firm's majority and minority shareholders at both high and low concentrated ownership levels. However, a firm's debt policy was found to be unable to be used in the same way.

Chen and Dhiensiri (2009) study firms in New Zealand and find strong support for the agency theory. They find that firms payout ratios are a positive function of the degree of ownership dispersion and a negative function of the degree of insider ownership. Further, firms that have experienced an increase in their revenue growth rate tend to pay lower dividends. Chen and Steiner (1999)[24] show that since dividends are used as monitoring and bonding devices and reduce agency costs, a firm will institute lower dividend payout ratios when managers hold

[21] As cited in Officer (2006).
[22] Ibid.
[23] Ibid.
[24] As cited in Chen and Dhiensiri (2009).

substantial portions of the firms' equity. According to Chen and Dhiensiri (2009), a firm pays dividends when its internally generated funds are not utilised for investment, when a firm experiences low growth levels or when a firm does not have to undertake large investments. They find that firms that experience increases in revenue exhibit a propensity to conserve funds for the future. Overall, they find that with an increase in dispersion of the ownership structure, there is a correspondingly higher dividend payout ratio, this is consistent with the agency theory and provides support for Easterbrook (1984) that shareholders prefer to increase the dividend payout ratio as they think that their degree of control of the company falls.

Dionne and Ouederni (2010) find that with higher levels of informational asymmetry, there is a corresponding increase in the sensitivity of dividend payments to future prospects. They find that the implementation of corporate risk management reduces the issue of informational asymmetry and has a positive influence on firm values.

2.3.Dividends and the Clientele Effect

According to the clientele effect theory, investors with specific requirements tend to either prefer or not prefer to invest in firms who pay dividends on their stock. For instance, pensioners who depend on dividend payments would want to be invested in firms that pay stable and large dividends. In addition, the theory assumes that the stock price of a company moves in accordance with the needs of shareholders. Thus, shareholders choose to invest in firms that resonate with their goals and needs and the share price of the firm will move accordingly with this movement by shareholders either buying or selling their stock[25].

Miller and Modigliani (1961) find that in the presence of perfect capital markets, rational behaviour of shareholders and perfect certainty, dividend policy is irrelevant, thus no rational shareholder would have a preference between share repurchases and dividends. Black and Scholes (1974)[26] find that the uninformed demand for dividends is the result of dividend clienteles that they attribute to market imperfections that include taxes, transaction costs or institutional constraints on investment.

Petit (1977) [27] finds support for the clientele hypothesis in that pensioners and retirees prefer cash and therefore invest in firms with high payout ratios. Asquith and Mullins (1983) find support for investor clienteles in that with a dividend initiation, there may be a corresponding

[25] http://www.investopedia.com/terms/c/clienteleeffect.asp (Accessed 06 July 2013).
[26] As cited in Baker and Wurgler (2002).
[27] As cited in Wolmarans (2003).

change within the investor clientele. Denis et al. (1994) find support for the cash flow signalling and dividend clientele hypothesis. Graham and Kumar (2006) follow on from Franklin and Michaely (2003) and Hotchkiss and Lawrence (2002)[28] and provide further support for the clientele effect of dividends.

Lewellen, Stanley, Lease and Schlarbaum (1978) are unable to find robust support for the clientele hypothesis of dividends. They do however find that stocks that have lower payout ratios are often held by younger shareholders and older shareholders often hold stocks with higher payout ratios. This is somewhat consistent with the clientele effect in that younger shareholders are often more willing to undertake riskier investments as they have a longer period to recoup losses should they occur. For instance, older shareholders could exhibit risk aversion[29] to new and unfamiliar investment strategies and products and this may be attributable to their shorter period for capital appreciation or preservation in the face of potential losses, or they may require the capital shortly in order to fund their retirement. DeAngelo et al. (2004) do not find support for the clientele hypothesis but instead find evidence that (i) there are a handful of firms with substantial earnings who choose not to pay dividends, (ii) the non-payers from (i) are usually from the technology sector and (iii) large firms in all other industries tend to pay dividends. DeAngelo et al. (2004) extend their argument for the lack of support for the clientele hypothesis by stating that this hypothesis can only hold in very exceptional circumstances.

As shown above, there are various reasons as to why a firm may choose to implement a dividend policy even in the presence of share repurchases. Fama and French (2001) find that overall, regardless of firm characteristics; there has been a reduced propensity of firms to pay dividends. Fama and French (2001) find that newly listed firms comprise of firms that had low levels of earnings, strong investment opportunities and a small market capitalization: all typical characteristics of firms that had never paid dividends. In contrast, DeAngelo et al. (2004) analyse industrial firms, which they find to display a '*two-tier'* structure, (where there are a small number of firms with very high earnings which outweigh the large number of small firms with low earnings), and, instead find that there was an increase in aggregate real dividend payments by industrial firms during the 1978 to 2000 period, in both nominal and real terms. They ascribe this to the '*two-tier'* structure of the industrial firms that comprise their sample. DeAngelo et al. (2004) therefore find evidence of not only increasing dividends by the largest dividend-paying

[28] As cited in Graham and Kumar (2006).
[29] Risk averse investors tend to take on increased risks only if they are guaranteed of the potential for higher returns. http://www.investopedia.com/terms/r/risklover.asp (Accessed 06 July 2013).

firms, but also an increase in the concentration (where a few firms paid the largest dividends) of dividends among these firms. Lintner's (1956) suggestion that a firm bases its payout policy on their earnings provides support for DeAngelo et al.'s (2004) finding that firms with higher earnings pay out more cash as dividends.

3. Research Objective

The objective of this paper is to replicate the methodology of DeAngelo et al. (2004) in South Africa for JSE-listed industrial firms to determine whether dividends are increasing; whether in South Africa there exists the '*two-tier'* structure of industrial firms and as an extension of their research, whether industry-specific characteristics affect the likelihood of whether a firm pays dividends or not.

Building on these findings as to whether dividends are increasing or not for JSE-listed, industrial firms and whether these firms are characterised by dividend concentration will lend itself to answering the question as to whether dividends are important for South African firms. In addition, the results from the empirical section of this study would also assist in understanding whether the signalling and clientele hypotheses[30] hold for South African listed JSE-industrial firms.

4. Sampling Procedure and Methodology

Figure 1 illustrates the trend[31] of dividend and earnings[32] activity for all industrial firms[33] (non-financial and non-utility firms) listed on the JSE over the period 1989 to 2009 as reported by BFA McGregor. The BFA McGregor database consists only of currently listed firms so firms that have since delisted or merged do not form part of the sample. Firms listed on the Alt-X were also excluded. Figure 1 illustrates that there has been an increasing trend[34] of both dividends and earnings for all industrial firms listed on the JSE (dividend payers and non-payers).There has

[30] Note that only the signaling and clientele hypotheses will be tested in this paper, following the methodology employed by DeAngelo, DeAngelo and Skinner (2004).
[31] Values are logged to the power of 10 to enable us to determine the trends of dividends and earnings activity over the period.
[32] Using Earnings before Interest and Tax (EBIT) as a proxy for earnings.
[33] Both dividend payers and non-payers.
[34] Values are not in ZAR but are logged to the power of 10 to be able to graph the outliers with very high earnings over the 2006 to 2008 period.

been a substantial increase in aggregate earnings over the 2006 to 2008 period, followed by a sharp decline in earnings in 2009, which could be attributable to the recession. However, despite the reduction in earnings growth over 2006 to 2008, dividend payments still increased steadily over the period, highlighting the relevance of dividends for dividend-paying industrial firms in South Africa[35].

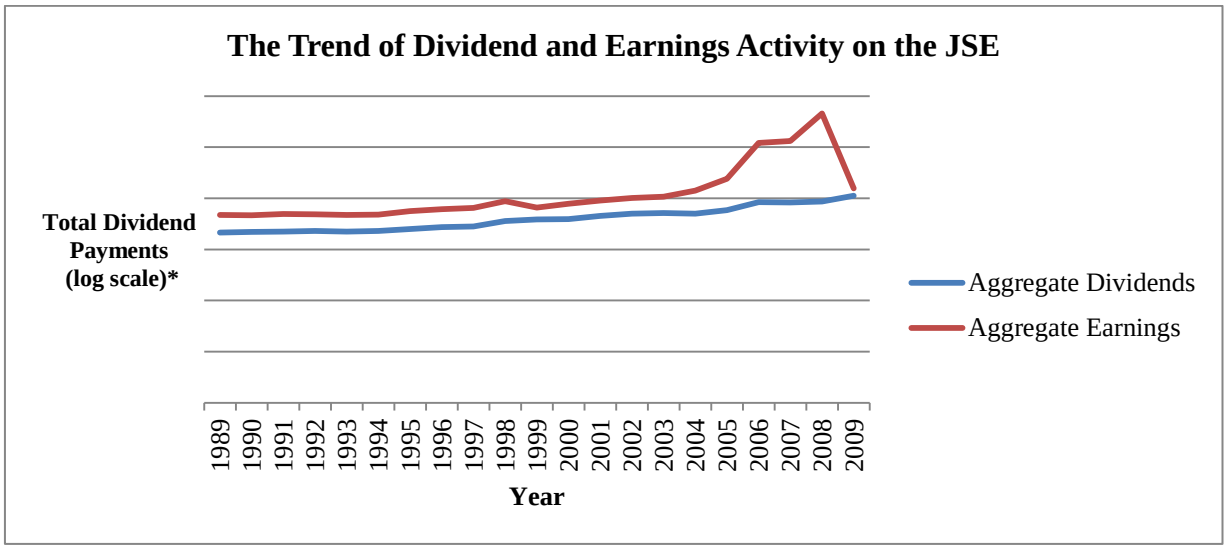


Figure 1: *The Trend[36] of Dividends and Earnings of All Listed Industrial (non-financial and non-utility) Firms on the JSE over the 1989 to 2009 period. There has been an increasing trend in aggregate dividend payments over the period, regardless of changes in aggregate earnings.*

4.1. Descriptive Statistics

In comparing the results of DeAngelo et al. (2004) to this paper, it is important to bear in mind the differences regarding the sample periods used for both papers. While DeAngelo et al. (2004) cover the 1978 to 2000 period, this paper covers the 1989 to 2009 period. This means that the period covered in this paper has an overlap with the recession of 2009. South Africa was effectively in a recession as of Q1 of 2009[37]. Thus, typically in a recession firms may choose to

[35] Hwangwe Colliery Company Ltd was the outlier over the period, with substantial increases in earnings and no dividend payments over the period.
[36] Both dividends and earnings are logged to the power of 10 to enable us to determine the trends of dividends and earnings activity over 1989 to 2009.
[37] A 'recession' is defined as two consecutive quarters of negative growth. http://www.southafrica.info/news/business/33972.htm (Accessed 6 July 2013).

preserve capital rather than pay out dividends, as did Anglo American in South Africa and General Electric in the US[38]. This suggests that the results of this paper are not fully comparable with that of DeAngelo et al. (2004) due to the difference in the characteristics of the sample periods used.

Table 1 shows that aggregate nominal dividends increased by a substantial 1296% for JSE-listed industrial firms from R8.53 billion to R119.11 billion over the 20 year period while aggregate real dividends (as deflated by the Consumer Price Index) increased by 203% to R25.80 billion from R8.53 billion in 1989. In 2009, the mean real dividend paid by listed industrials on the JSE also increased from R1.40 billion per dividend-paying firms to R5.20 billion per dividend-paying firm, an increase of 271%. The differences between both the mean (R1.40 billion in 1989 and R5.20 billion in 2009) and median (R1 billion in 1989 and R53 billion in 2009) dividends paid in 1989 and 2009 illustrate significant dividend concentration in the sample. The percentage of industrial firms paying dividends increased by 39% to 77% in 2009. These findings are consistent with that of DeAngelo et al. (2004) who find that there has been an increase in dividend payments and there is evidence of dividend concentration, illustrating that dividends have increased between 1989 and 2009, rather than fallen, as per the findings of Fama and French (2001).

Table 1: *Aggregate Dividends in 1989 and 2009 for All Industrial Firms (dividend payers and non-payers combined) listed on the JSE. Real dividends in 2009 are calculated as nominal dividends converted to 1989 dividends using the Consumer Price Index.*

	1989	**2009**	**Absolute change**
1. Aggregate Nominal Dividends	8.53	119.11	110.58
(Bln ZAR)			1296%
2. Aggregate Real Dividends	8.53	25.80	17.27
(Bln ZAR)			203%
3. Mean real dividend	1.40	5.20	3.8
(Bln ZAR, per dividend-paying firm)			271%
4. % of JSE listed industrial firms paying dividends	38%	77%	39%
5. Median real dividend	1.0	53.0	52.0
(Bln ZAR, per dividend-paying firm)			5200%

[38] http://www.sharenet.co.za/marketviews/mv_view_article.php?id=896 (Accessed 06 July 2013).

4.2. Dividend Concentration and the JSE

Table 2 ranks industrial firms that pay dividends in both 1989 and 2009 in clusters of 10 firms, in descending order of the size of the dividend payment for both 1989 and 2009. For both time periods 1989 and 2009, the first two columns state the percentage of dividends paid, the centre two columns state the cumulative percentage of dividends paid whilst the last two columns state the real dividend (in 1989 ZAR, as deflated by the Consumer Price Index). Table 2 shows that in 2009, the 10 highest dividend-paying firms paid 77% of all dividends, up from 71% in 1989. The R4.35 billion in real dividends that were paid in 2009 by the 10 highest dividend payers exceeds the dividends paid by the top 60 firms in 1989. Thus, over the 1989 to 2009 period, JSE-listed industrial firms have experienced significant dividend concentration. In 1989, less than 30% of the firms paying the largest dividends in the sample accounts for 87% of total dividends while in 2009, 20% of the firms paying the largest dividends of the firms in the sample accounts for 90% of total dividends. In particular, the R4.35 billion of real dividends paid by the top 10 dividend payers in 2009 is greater than the R4.28 billion total dividends paid out by all firms in the sample in 1989. This finding is consistent with the findings of DeAngelo et al. (2004) of increasing dividend payments and is consistent with their finding that there is evidence of dividend concentration.

Table 3 illustrates the cross-sectional distributions of real dividends in 1989 and 2009. Real dividends are ranked in descending order of paid dividends. The table shows that in 2009, there were six firms paying annual dividends in excess of R0.60 billion compared to in 1989 where there was only one firm. The table also illustrates that in 2009, the number of firms paying real dividends of between R0.20 billion and R0.80 billion increased from 8 in 1989 to 10 in 2009, while the amount of real dividends also increased from R2.72 billion in 1989 to R3.71 billion in 2009. In 1989, 90% of the sample firms paid dividends of less than R0.20 billion while the comparable figure for 2009 is also 90%. Overall, the sample of industrial firms lends itself to the finding that there has been an increase in real dividends paid in 2009 as compared to 1989, consistent with DeAngelo et al. (2004). More so, Table 3 illustrates that there has been an increase in real dividend concentration between 1989 and 2009. For instance, the number of firms paying dividends in excess of R0.6 billion in 1989 was one while the corresponding figure for 2009 was six firms. In addition, the amount of real dividends increased[39] from R0.62 billion

[39] For firms paying dividends greater than R0.6 billion in 1989 or 2009.

in 1989 to R4.49 billion in 2009. Table 3 therefore illustrates that for South African industrial firms listed on the JSE, there has been increasing dividend payments that were accompanied by increasing dividend concentration, consistent with the findings of DeAngelo et al. (2004).

Table 2: *Concentration of Total Dividends Paid in 1989 and 2009 by Industrial Firms (non-financial and non-utility firms). Firms are ranked in clusters of 10 in descending order of real dividend payments in 1989 and 2009. Real dividends are 2009 nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Dividend Ranking	% of total dividends		Cumulative % of total dividends		Real dividends (Bln ZAR, 1989 base)	
	1989	2009	1989	2009	1989	2009
Top 10	71	77	71	77	3.02	4.35
11-20	17	8	87	85	0.72	0.46
21-30	7	5	94	90	0.29	0.28
31-40	3	3	97	93	0.14	0.18
41-50	1	2	99	95	0.06	0.11
51-60	1	1	99	97	0.03	0.07
61-70	0	2	100	99	0.16	0.12
71-80	0	2	100	99	0.20	0.03
81-90	-	0	100	99	-	0.02
91-100	-	0	100	99	-	0.01
101-110	-	0	100	99	-	0.01
111-120	-	0	100	99	-	0.01
121-130	-	0	100	100	-	0.00
131-140	-	-	100	100	-	0.00
141-152	-	-	100	100	-	0.00
Total for all firms	100.0	100.0			4.28	5.66
Number of firms					77	152

***Table 3**: The Number of Firms and their Real Dividend Payments in 1989 and 2009 for Industrial Firms that Paid Dividends. Reported dividends are for fiscal years ending in 1989 or 2009. Real dividends are nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Real dividend payment (1989 Bln ZAR)	Number of firms in 1989	Number of firms in 2009	Change from 1989 to 2009	% change from 1989 to 2009	Real dividends 1989 (Bln ZAR)	Real dividends 2009 (Bln ZAR)	Change from 1989 to 2009 (Bln ZAR)	% change from 1989 to 2009
> R1.5	0	1	1	-	-	1.69	1.69	-
R1 - R1.5	0	2	2	-	-	0.26	0.26	-
R0.8 - R1	0	1	1	-	-	0.99	0.99	-
R0.6 - R0.8	1	2	1	-50	0.62	1.45	0.83	-43
R0.4 - R0.6	1	0	-1	0	0.41	-	-0.41	-100
R0.2 - R0.4	6	8	2	-75	1.69	2.26	0.57	-75
<R0.2	69	138	69	-50	1.56	1.46	-0.10	-107
Total	77	152	75	-51	4.28	8.11	4.24	-48

4.3. Dividends and Earnings Concentrations in 1989 and 2009

Lintner in his 1956 paper suggests that managers set dividend payout ratios in response to expected earnings and are reluctant to change these payments as they act as a signalling device and so possess informational content. Thus, if a firm has high earnings, it has a higher propensity to pay high dividends. High or increasing dividend concentration may be due to high or increasing earnings concentration, as was found by DeAngelo et al. (2004).

Table 4 ranks dividend-paying firms in descending order of their earnings in 1989 and 2009. DeAngelo et al. (2004) for their sample of industrial firms, find evidence of earnings concentration at the top end of the earnings spectrum. Table 4 shows that earnings concentration, while still high, has fallen among the top dividend payers; with 45% of earnings in 2009 accruing to the top 10 dividend-paying firms while in 1989, the corresponding figure was 65%. The top 20 dividend-paying firms cumulatively generate 81% of earnings in 1989 and only 60% in 2009. The table shows that the earnings concentration for South African firms is rather stable, but there have been large changes. It appears that for South African industrial firms contained in the sample, there has been an increase in total dividend payments and dividend concentration, but the earnings concentration has dispersed. This could be as a result of the 2009 recession or that the largest increase in dividend payments emanate from mid-sized companies or from companies that reduced their dividend cover. With their slightly lower earnings concentration, increased dividend payments and lower earnings value, South African companies still paid

dividends and this suggests that that dividends do have a role to play for South African listed industrial firms and that firms are aware of the level and growth of dividend payments, consistent with Firer et al. (2008). Thus, dividends do appear to be important and relevant for South African firms, even for those firms who do not have very high earnings.

4.4. The Pooled Earnings Distribution of Dividend Payers and Non-payer's

Table 5 illustrates the cross-sectional earnings for both dividend payers and non-payers combined. Panel A encompasses the pooled earnings distributions for both 1989 and 2009. Panel B encompasses the pooled distributions of average five-year earnings for years ending in 1989 and 2009, in line with DeAngelo et al. (2004) who follow Lintner's (1956) suggestion that five-year average earnings are a more robust indicator of the ability of a firm to pay dividends than are one-year earnings data.

Table 5 illustrates that in 2009, analysing both dividend payers and non-payers, using real earnings in excess of R5 billion, there is evidence of increasing earnings concentration. For instance, in Panel A, for one-year real earnings in 1989, firms with real earnings in excess of R5 billion accounted for 54% cumulative of total earnings. In 2009, the comparable figure was 97% of cumulative total earnings. In Panel B, the comparable figures for real earnings greater than R5 billion are 40% of cumulative total earnings in 1989 and 90% of cumulative total earnings in 2009. DeAngelo et al. (2004) find that for their sample of industrial firms, earnings in both 1978 and 2000 are concentrated amongst a few firms at the top end of the distribution and evidence of earnings concentration was stronger in 2000 than in 1978. In line with the findings of DeAngelo et al. (2004), this paper also finds support for earnings concentration that is higher in 2009 than 1989 (for both Panels A and B).

Table 4: *Concentration of Earnings of Industrial Firms that Paid Dividends in 1989 and 2009. Firms are ranked in descending order of dividend payments in 1989 and 2009. Real earnings are nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Dividend Ranking	**% of total earnings of dividend-paying industrial firms**		**Cumulative % of total earnings of dividend-paying industrial firms**		**Real earnings (Bln ZAR, 1989 base)**	
	1989	**2009**	**1989**	**2009**	**1989**	**2009**
Top 10	65	45	65	45	13.48	19.31
11-20	17	15	81	60	3.51	6.18
21-30	12	11	93	71	2.43	4.84
31-40	2	9	95	80	0.46	3.77
41-50	3	4	98	84	0.55	1.63
51-60	1	3	99	87	0.23	1.38
61-70	1	7	99	94	0.09	2.83
71-80	1	1	100	95	0.12	0.61
81-90	0	1	100	96	-	0.28
91-100	0	1	100	97	-	0.40
101-110	0	1	100	98	-	0.28
111-120	0	1	100	98	-	0.31
121-130	0	0	100	98	-	-0.08
131-140	0	0	100	98	-	0.04
141-152	0	2	100	100	-	0.77
Total for all firms	100.0%	100.0%			20.87	42.56
Number of firms	77	152				

***Table 5**: Cross-Sectional Earnings for both Dividend Payers and Non-Payers. **Panel A:** Pooled earnings distributions for both 1989 and 2009. **Panel B:** Pooled distributions of average five-year earnings for years ending in 1989 and 2009. Real earnings are nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Panel A: Cross-sectional distribution of real earnings in 1989 or 2009 for industrial firms in RSA.

Bln ZAR	Number of firms		Real earnings (Bln ZAR)		Real earnings as a % of the total	
	1989	2009	1989	2009	1989	2009
> R10.0	0	6	0	123.02	0%	54%
R5.0 - R10.0	0	3	0	19.71	0%	9%
R1.0 - R5.0	7	34	11.3	77.37	54%	34%
R0.75 - R1.0	1	12	0.82	10.23	4%	4%
R0.50 – R0.75	6	7	3.71	4.25	18%	2%
R0.25 – R0.5	6	14	2.16	5.35	10%	2%
R0 – R0.25	57	72	2.79	6.62	13%	3%
Negative earnings	2	4	-0.02	-16.92	0%	-7%
Total	79	156	20.75	229.62	100%	100%
Total positive earnings only	77	152	20.77	246.54		

Panel B: Cross-sectional distribution of five-year average real earnings in 1989 or 2009 for industrial firms in RSA 2009.

Bln ZAR	Number of firms		Real earnings (Bln ZAR)		Real earnings as a % of the total	
	1989	2009	1989	2009	1989	2009
> R10.0	0	4	0	62.78	0%	36%
R5.0 - R10.0	0	3	0	19.49	0%	11%
R1.0 - R5.0	4	35	8.08	74.18	40%	43%
R0.75 - R1.0	4	5	3.49	4.37	17%	3%
R0.50 – R0.75	5	11	3.13	6.63	15%	4%
R0.25 – R0.5	6	14	2.43	4.41	12%	3%
R0 – R0.25	58	74	3.18	5.95	16%	3%
Negative earnings	2	6	-0.01	-3.85	0%	-2%
Total	79	156	20.29	173.97	100%	100%
Total positive earnings only	77	152	20.30	177.82		

4.5. The Separate Earnings of Dividend Payers and Non-payers

Table 6 partitions the pooled distributions of real earnings from Table 5 into separate distributions for dividend payers and non-payers. Table 6 Panel A shows that of the firms reporting negative earnings in 2009, 22% did not pay dividends over the one-year earnings period while over the five-year earnings period (Panel B), 2% of firms with negative earnings did not pay dividends. Thus, even over the longer period of five years, the majority of companies with negative earnings still paid dividends.

In Panel A, in 1989, 88% of firms paid dividends and the corresponding figure for 2009 is 54%. Despite this reduction from 1989 to 2009, firms with real earnings less of than R0.75 billion tend to pay higher dividends in 2009 than in 1989. For instance, in 1989, dividend-paying firms with real earnings between R0.5 billion and R0.75 billion amounted to 7 while the corresponding figure for 2009 was 15. Similarly, for Panel B, dividend-paying firms with real earnings between R0.5 billion and R0.75 billion amounted to 7 in 1989 and 21 in 2009.

DeAngelo et al. (2004) find evidence of substantial earnings concentration and that firms with higher earnings exhibit a propensity to pay higher dividends. In South Africa, is appears that firms with earnings of less than R0.75 billion exhibit strong earnings and dividend concentration for dividend paying firms. In 1989, there are no firms with positive earnings who failed to pay dividends while in 2009, a few firms chose not to. Despite this, as shown in Table 1, there has been an increase of dividend payments of 203%. In addition, consistent with DeAngelo et al. (2004), this paper finds that there has been an increase in earnings concentration over the 1989 to 2009 period, but it is not as strong and clearly defined as was found by DeAngelo et al. (2004). Unlike DeAngelo et al. (2004) who find that industrial firms exhibit a '*two-tier'* structure; this paper does not find robust support for this characteristic.

Table 6: *Partitioned Separated Real Earnings distributions for Dividend Payers and Non-Payers.* **Panel A:** One-year average real earnings for Payers and Non-Payers ending in 1989 and 2009. **Panel B:** Five-year average real earnings for Payers and Non-Payers ending in 1989 and 2009.

Panel A: One-year average real earnings for Payers and Non-Payers ending in 1989 and 2009.

Real earnings (Bln 1989 ZAR)	**1989 Number of firms**			**2009 Number of firms**			**1989 EBIT (Bln ZAR)**			**2009 EBIT (Bln ZAR)**		
	Payers	Non Payers	% from payers	Payers	Non Payers	% from payers	Payers	Non Payers	% from payers	Payers	Non Payers	% from payers
> R15.0	0	0	0	6	0	100	-	-	-	2.62	0	100
R10.0 - R15.0	0	0	0	3	0	100	-	-	-	0.37	0	100
R5.0 - R10.0	0	0	0	6	1	86	-	-	-	0.39	0.06	86
R1.0 - R5.0	9	0	100	39	9	81	0.14	-	100	0.91	0.24	79
R0.75- R1.0	1	0	100	13	2	87	0.01	-	100	0.11	0.02	86
R0.5 - R0.75	7	11	39	15	5	75	0.04	-	100	0.10	0.03	75
R0.25 - R0.50	8	1	89	22	10	69	0.03	0.00	86	0.08	0.04	68
R0-R0.5	78		100	84	88	49	0.03	0.00	95	0.08	0.05	62
Negative earnings	3	3	50	16	58	22	-0.00	-0.00	47	-0.05	-0.04	53
Total	106	15	88	204	173	54	0.25	0.01	98	4.61	0.40	92

Panel B: Five-year average real earnings for Payers and Non-Payers ending in 1989 and 2009.

Real earnings (Bln 1989 ZAR)	**1989 Number of firms**			**2009 Number of firms**			**1989 EBIT (Bln ZAR)**			**2009 EBIT (Bln ZAR)**		
	Payers	Non Payers	% from payers	Payers	Non Payers	% from payers	Payers	Non Payers	% from payers	Payers	Non Payers	% from payers
> R15.0	0	0	0	8	0	100	-	-		486.77	0	100
R10.0 - R15.0	0	0	0	4	0	100	-	-		0.50	0	100
R5.0 - R10.0	0	0	0	5	0	100	-	-		0.36	0	100
R1.0 - R5.0	8	0	100	53	0	100	0.19	-		1.1	0	100
R0.75- R1.0	4	0	100	9	0	100	0.03	-		0.08	0	100
R0.5 - R0.75	7	0	100	21	0	100	0.04	-		0.13	0	100
R0.25 - R0.50	6	0	100	26	0	100	0.02	-		0.09	0	100
R0-R0.5	86	6	93	128	70	65	0.04	0.00		0.13	0.01	95
Negative earnings	2	2	50	1	52	2	-0.00	-0.00		-0.04	-1.01	71
Total	113	8	93	255	122	68	0.33	0.00	1.00	0.00	489.10	-0.86

4.6. Payout Ratios and the Propensity to Pay Dividends

Fama and French (2001) and Fatemi and Bildik (2012) both find that there has been a reduced propensity to pay dividends, regardless of firm characteristics. DeAngelo et al. (2004) do not find evidence of a reduced propensity to pay dividends; rather they find flat payout ratio data for 1978 and 2000 for both one and five year periods. Row 1 of Table 7 illustrates that the ratio of aggregate dividends to aggregate earnings of both payers and non-payers fall drastically when using current earnings over both the one (from 20% to 7%) and five-year periods (from 20% to 0.2%). This finding suggests a drastic reduction in the payout ratio when using both payers and non-payers in the denominator. As mentioned by DeAngelo et al. (2004), this measure is not the cleanest in trying to examine the behaviour of dividend paying firms. A possible reason for this is because both payers and non-payers are included, the payout ratio may have remained unchanged but dividends, as a means to compensate shareholders may have fallen. Row 2 remedies this and measures the ratio of aggregate dividends to total earnings for dividend payers and finds an increase of 42% (from 21% to 63%) over the one-year period and 11% (22% to 33%) over the five-year period for dividend-paying firms, thereby suggesting that dividends have increased among dividend-paying firms, consistent with DeAngelo et al. (2004). DeAngelo et al. (2004) find no significant differences in the payout ratios for their sample period while this paper does find changes. For instance, row 3 suggests that the median dividend payout has fallen both over the one and five-year periods and this could be due to the fact that while dividends are increasing among firms with positive earnings, they are not necessarily increasing substantially at the top end of the earnings spectrum. Rather, they appear to be increasing for firms with positive but not very large earnings. Row 5 illustrates that there has been a slight reduction in the median payout ratio over both the one and five year periods. This reduction could be due to the fact that although there has been an increase in the number of firms paying dividends, the size in the constant composition sample has fallen. This phenomenon could be as a result of firms choosing to reduce their dividend payment rather than to cut them out completely, consistent with the signalling theory. Thus, for dividend paying firms, dividends are increasing for listed indutrials, consistent with DeAngelo et al. (2004) and inconsistent with both Fama and French (2001) and Fatemi and Bildik (2012).

Table 7: *Aggregate and Median Dividend Payout Ratios for Industrial Firms Listed on the JSE in 1989 and 2009. The payout ratio ratios in row 1 and 2 are based on aggregate dividends paid by industrial firms in 1989 or 2009. In Row 1, the denominator is the sum of all earnings (payers and non-payers) while the denominator in Row 2 comprises the earnings of only payers. Row 3 shows the median firm's payout ratio for dividend payers. Row 4 calculates the payout ratio as (1) total dividends paid by firms in the constant composition sample divided by (2) total earnings of firms in that sample. Row 5 reports the median firm's payout ratio within the constant composition sample. The values in the Column 'Five-year average real earnings' describes payout ratios based on the firms average real earnings over the five year period, ending with the year in question. Nominal figures are converted into real figures by the Consumer Price Index.*

Payout Ratio Measure	**One-year earnings (%)**		**Five-year average real earnings (%)**	
	1989	**2009**	**1989**	**2009**
1. Aggregate dividends/aggregate earnings (Pooled payers and non-payers)	20%	7%	20%	0.2%
2. Aggregate dividends/total earnings of dividend payers	21%	63%	22%	33%
3. Median firm's payout ratio (Dividend payers)	20	12	19	15
4. Constant composition sample of firms that paid dividends in both 1989 and 2009 (Total dividends/total earnings of dividend payers)	19%	33%	19%	27%
5. Constant composition sample of firms that paid dividends in both 1989 and 2009: Median firm's payout ratio	25.34	20.04	18.07	17.68

4.7. The Identity of the Highest Dividend Payers, Non-Payers and Earners in 2009

Table 8 lists the JSE-listed industrial firms in the sample in order of the dividends paid. As Table 8 illustrates, the industries from which the 10 highest dividend payers in 2009 originate are mainly Basic Materials (Impala Platinum Holdings Limited, Kumba Iron Ore and BHP Billiton) and Telecommunications (MTN Group Limited, Vodacom Group Limited and Telkom SA Limited). The dividends of these 10 firms contribute the majority of dividends of industrial firms in 2009 (77%) which was largely driven by Impala Platinum Holdings Limited, followed by Kumba Iron Ore. Table 8 also illustrates that the top three firms account for 41% of total real dividends and 16% of total earnings in 2009 (Impala Platinum Holdings Limited, Kumba Iron Ore and Vodacom Group Limited) while BHP Billiton, the MTN Group Limited and Telkom SA (firms four to six) account for 22% of total real dividends and 23% of total earnings in 2009.

What is interesting to note is that in 1989, seven of the top 10 firms (Kumba Iron Ore Limited, Vodacom Group Limited, BHP Billiton Plc, MTN Group Limited, Telkom SA Limited, British

American Tobacco Plc and Woolworths Holdings Plc) were not publicly listed companies. Thus, despite the apparent advantages offered by share repurchases in comparison to dividends, newly listed industrial companies, irrespective of sector, choose to pay dividends. This suggests that for firms that pay dividends, dividends continue to be important and dividends do have a role to play in the signalling and clientele effect.

Table 9 shows the earnings in 2009 for the top 10 dividend-omitting[40] firms with the highest reported earnings. Table 9 illustrates that five of the top 10 non-dividend paying firms had cumulative 2009 real earnings in excess of R4 billion and these five firms account for 62% of the total earnings. What is interesting is the composition of this group on non-payers with high earnings: five of the ten companies are categorised as being 'Basic Materials' (Anglo American Plc, Anglo Platinum Limited, Simmer And Jacks Mines Limited, Harmony Gold Mining Company Limited and Mvelaphanda Resources Limited). The rest of the firms in the sample are Steinhoff International Holdings Limited (Consumer Goods), Netcare Limited (Health care), Eqstra Holdings Limited (Industrials), Blue Label Telecoms Limited (Telecommunications) and Super Group Limited (Industrials). DeAngelo et al. (2004) find that for their sample, there is significant earnings concentration amongst both dividend payers and non-payers. The table illustrates that these ten firms account for 80% of the earnings of those firms with positive earnings. Thus, even firms with strong positive earnings may chose not to pay dividends.

Comparing Tables 8 and 9 illustrates that earnings are not necessarily indicative as to whether a firm will pay dividends or not. Firms that pay dividends appear to continue to do so and these firms are not necessarily the firms with the highest earnings. Table 9 shows that the top three non-payers (ranked in terms of real earnings) Steinhoff International Holdings Ltd, Anglo American Plc and Netcare Limited account for 54% of total earnings.

It is important to remember the distinction that is applied to separate payers from non-payers is simply to be classified as a payer; the firm had to be paying a dividend in both 1989 and 2009. Anglo American Plc, under the control of Cynthia Carrol as Chief Executive, had suspended dividends in 2009[41]. At the same time of the dividend suspension, BHP Billition Plc had more

[40] These are firms not paying dividends in both 1989 and 2009.
[41] http://www.angloamerican.co.za/~/media/Files/A/Anglo-American-South-Africa/Attachments/media/a_magazine_issue1.pdf (Accessed 10 February 2013).

than doubled its dividend payment while Rio Tinto had also increased its payout[42]. Dividends were reinstated for Anglo American Plc in 2010[43].

If this paper used the periods prior to 2009 as the sample period, Anglo American Plc. would be classified as a dividend payer. For illustrative purposes, if the period under analysis were 1989 to 2008, Anglo American Plc would be the 15th largest dividend payer in the sample. Replicating Table 2 for the new sample period of 1989 to 2008 (see Appendix, Table 10), it can be seen that in 2008, the 10 highest dividend-paying firms paid 65% of all dividends, slightly lower than the 1989 figure of 71%. The comparable figure for 2009 is 77%, illustrating that even without having Anglo American Plc, who is a substantial dividend payer in the sample, dividends concentration has increased between 2008 and 2009.

Replicating Table 3 for the new period of 1989 to 2008[44], it can again be seen that there has been an increase in real dividend concentration over the 1989 to 2008 period. Interestingly, there no being any firms in the R0.2 to R0.4 million dividends payout region in 2008. Replicating Table 4 for 1989 to 2008[45], one will see that, consistent with the original period, earnings concentration is still high although it has fallen slightly. Overall, it appears that although Anglo American Plc. is categorised as a non-payer using the 1989 to 2009 time, using a shorter period of 1989 to 2008 does not change the findings of this paper that dividends paid by industrial firms have been increasing and there is evidence of earnings concentration.

Wolmarans (2003) finds that in South Africa, various types of firms tend to exhibit specific preferences when it comes to payout policies. Comparing Tables 8 and 9 brings a new perspective, as it appears that the type of industry is no longer an indicator of whether a firm will pay dividends or not. Rather, within each industry there seem to be companies which have chosen to pay dividends and others not. Additionally, seven of the top 10 dividend payers were not around in 1989, suggesting that dividends are still considered important by both companies and shareholders alike and they still have a role to play in South Africa.

[42] http://www.dailyfinance.com/2012/10/27/cynthia-carroll-to-quit-anglo-american/ (Accessed 10 February 2013).

[43] http://www.angloamerican.co.za/~/media/Files/A/Anglo-American-South-Africa/Attachments/media/a_magazine_issue5.pdf Accessed 10 February 2013).

[44] Table 11 in Appendix.
[45] Table 12 in Appendix.

Table 8: *Dividends and Earnings in 1989 and 2009 for the Top 10 Industrial Firms who Pay the Highest Dividends in 2009. Real dividends and earnings are 2009 nominal values converted to 1989 ZAR using the Consumer Price Index.*

	Real Dividends (Bln ZAR, 1989 base)			Real earnings (Bln ZAR, 1989 base)			Nominal Dividends and Earnings (Bln ZAR)	
	1989	**2009**	**Change**	**1989**	**2009**	**Change**	**2009**	**2009**
Impala Platinum Holdings Limited	0.14	0.93	0.79	1.07	1.98	0.90	7.82	9.52
Kumba Iron Ore Limited	0	0.77	0.77	0	2.74	2.73	6.48	13.17
Vodacom Group Limited	0	0.62	0.62	0	2.43	2.43	5.20	11.72
BHP Billiton Plc	0	0.54	0.54	0	2.46	2.46	4.56	11.82
MTN Group Limited	0	0.40	0.40	0	6.41	641	3.38	30.84
Telkom SA Limited	0	0.32	0.32	0	1.13	1.13	3.31	5.46
British American Tobacco Plc	0	0.21	0.21	0	0.87	0.87	1.80	4.18
ArcelorMittal South Africa Limited	0.22	0.19	-0.03	1.25	0.08	-1.17	1.63	-0.37
Woolworths Holdings Limited	0	0.17	0.17	0	0.42	0.42	1.40	2.02
Tiger Brands Limited	0.08	0.15	0.07	0.49	0.77	0.28	1.24	3.69
Total for Top 10	0.44	4.35	3.91	2.81	19.31	16.5	36.82	92.03
Total as a % of all industrial firms	11%	77%		10%	45%		77%	45%

Table 9: *Earnings in 2009 for the Top 10 Dividend-Omitting Firms with the Highest Reported Earnings. Real earnings are nominal earnings in 2009 converted to 1989 ZAR Consumer Price Index.*

Name	2009 Real earnings (Bln ZAR, 1989 base)	2009 Nominal earnings (Bln ZAR)	Cumulative earnings as a % of total earnings of all non-payers with positive earnings in 2009 (%)
Steinhoff International Holdings Limited	1.34	6.16	18
Anglo American Plc	1.01	4.67	32
Netcare Limited	0.88	3.79	43
Anglo Platinum Limited	0.77	3.60	53
Simmer And Jack Mines Limited	0.66	3.04	62
Harmony Gold Mining Company Limited	0.46	2.10	69
Mvelaphanda Resources Limited	0.36	1.67	73
Eqstra Holdings Limited	0.18	0.91	76
Blue Label Telecoms Limited	0.15	0.68	78
Super Group Limited	0.11	0.50	80
Total	5.87	27.11	80[46]

[46] The sum of the top 10 non-dividend payers amounts to 80%. The other 20% accrues to other non-dividend paying firms who have positive earnings.

5. Summary and Implications:

There has not been much research in the South African market regarding whether dividends have been increasing or decreasing and the relationship between dividends and earnings. This paper set out to broadly determine these relationships and to understand whether dividends are important in South Africa.

In particular, this paper sought to determine whether, as found by DeAngelo et al. (2004), South African industrial firms exhibit a '*two-tier'* structure where they are a small number of firms with significant dividend payments and increases in this group of payers swamp the reduction of firms paying lower dividends. In addition, this paper also sought to determine whether earnings are indicative as to whether a firm pays dividends or not for JSE-listed industrial firms.

This paper finds that over the 1989 to 2009 period, there has been an increase in dividend payments of listed industrial firms on the JSE, consistent with DeAngelo et al. (2004). In addition, it appears that in South Africa, earnings are not a predictor as to whether a firm will pay dividends or not. More importantly, it appears that for South African dividend-paying firms, dividends are important. In addition, dividends do not appear to be industry-specific. This paper does not find support for DeAngelo et al.'s finding that industrial firms are characterised by a '*two-tier'* structure.

Looking at the clientele effect, this paper finds that (i) high earnings do not ensure that a firm will pay dividends and (ii) the decision to pay dividends is not industry-specific. Thus, this paper is unable to support the finding of DeAngelo et al. (2004) on the irrelevance of the clientele effect using their criteria. Overall, due to the fact that dividends have increased, this suggests that the clientele effect does hold for South African JSE listed industrial firms.

Regarding signalling, this paper finds that dividends are not concentrated among firms with the highest earnings and that earnings are not industry specific either. Therefore, for South African JSE-listed industrial firms, the signalling theory cannot be refuted using the criteria utilised by DeAngelo et al. (2004). Overall, due to the fact that dividends have increased, this suggests that the signaling theory does hold for South African JSE listed industrial firms. This paper also finds evidence of dividend concentration, consistent with DeAngelo et al. (2004), although the concentration for South African JSE listed firms is not as defined as was found by DeAngelo et al. (2004).

Overall, in South Africa, it appears that the dividends of JSE-listed industrial firms are increasing among dividend payers. Towards the latter part of the sample period, the world experienced a recession and in South Africa, even among dividend-paying firms with lower earnings, dividends payments were made. This suggests that in times of uncertainty and risk, companies and shareholders seem to prefer to have a more stable dividend policy (even at lower levels) and that dividends are important for dividend-paying industrial firms.

In conclusion, this paper finds support of increasing dividends payments for South Africa JSE-listed industrial firms. There have been increases in not only dividend payments, but also in the number of dividend payers. There is also evidence of earnings concentration for JSE-listed industrial firms, but this is not at as high levels as was found in DeAngelo et al.'s (2004) sample. Thus, for South African firms, dividends are important and relevant and dividends do not appear to be industry-specific. South African industrial firms do not appear to follow the *'two-tier'* structure that was found by DeAngelo et al. (2004). Lastly, the signalling hypothesis cannot be refuted for South African industrial firms.

6. Suggestions for Further Research:

Overall, there has not been much research surrounding dividend activity in South Africa. Particularly, there has not been much recent literature regarding the roles of the various dividend theories in explaining why dividend payments are important or not. Suggested areas for further research include analysing the impact of the changing of the taxation policy on dividend policy.

As this paper used the criteria outlined by DeAngelo et al. (2004), the clientele effect was not tested, thus another suggested area for further research is whether the investor clienteles exist and which are the strongest groups of clienteles.

There is often a degree of overlap amongst the various theories as to why a firm may choose to pay dividends or not. While none of these theories are mutually exclusive, it could be beneficial to determine which of these theories share the highest and lowest correlations to analyse what is it that attracts certain shareholders to invest in particular companies.

While dividends do appear to be relevant and important for South African shareholders and firms currently, there are companies who are undertaking share repurchases. Another potential area for further research could be a comparison and analysis of firms who only pay dividends, firms who engage in both share repurchases and dividends and (if possible) firms who only engage in share repurchases to determine the progression of these firms. This could help companies understand what various shareholder profiles are interested in and perceive as relevant to them.

As a suggestion for further research, the methodology used in this paper can be modified to be applied for a longer period and could have two testing periods (i) a pre-recession period (pre-2009) and (ii) a post-recession period (post-2009). Both periods should be sufficiently long enough to average out the results and smooth over any possible outliers. In comparing both pre- and post-recession results, one can infer whether dividend policy has been affected by the recession and whether dividends are still relevant to South African shareholders after the recession.

7. Appendix:

Table 10: *Concentration of Total Dividends Paid in 1989 and 2008 by Industrial Firms (non-financial and non-utility firms). Firms are ranked in clusters of 10 in descending order of real dividend payments in 1989 and 2008. Real dividends are 2008 nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Dividend Ranking	% of total dividends		Cumulative % of total dividends		Real dividends (Bln ZAR, 1989 base)	
	1989	2008	1989	2008	1989	2008
Top 10	71	65	71	65	3.02	11.25
11-20	17	14	87	78	0.72	2.36
21-30	7	8	94	86	0.29	1.34
31-40	3	5	97	91	0.14	0.80
41-50	1	3	99	94	0.06	0.58
51-60	1	2	99	96	0.03	0.36
61-70	0	1	100	97	0.16	0.23
71-80	0	1	100	98	0.20	0.17
81-90	-	1	100	99	-	0.12
91-100	-	0	100	100	-	0.08
101-110	-	0	100	100	-	0.05
111-120	-	0	100	100	-	0.03
121-130	-	0	100	100	-	0.02
131-140	-	0	100	100	-	0.01
141-152	-	0	100	100	-	0.00
Total for all firms	100.0	100			4.28	17.4
Number of firms					77	151

***Table 11**: The Number of Firms and their Real Dividend Payments in 1989 and 2008 for Industrial Firms that Paid Dividends. Reported dividends are for fiscal years ending in 1989 or 2008. Real dividends are nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Real dividend payment (1989 Bln ZAR)	Number of firms in 1989	Number of firms in 2008	Change from 1989 to 2008	% change from 1989 to 2008	Real dividends 1989 (Bln ZAR)	Real dividends 2008 (Bln ZAR)	Change from 1989 to 2008 (Bln ZAR)	% change from 1989 to 2008
> R1.5	0	1	1	100%	-	3.20	1.69	100%
R1 - R1.5	0	3	3	100%	-	4.05	0.26	100%
R0.8 - R1	0	1	1	0%	-	2.35	0.99	100%
R0.6 - R0.8	1	3	2	200%	0.62	1.32	0.70	113%
R0.4 - R0.6	1	2	1	100%	0.41	0.60	-0.41	46%
R0.2 - R0.4	6	0	-6	-100%	1.69	0.00	-1.69	-100%
<R0.2	69	142	73	104%	1.56	5.87	4.31	276%
Total	77	152	74	-51%	4.28	17.39	6.26	-64%

Table 12: *Concentration of Earnings of Industrial Firms that Paid Dividends in 1989 and 2008. Firms are ranked in descending order of dividend payments in 1989 and 2008. Real earnings are nominal dividends converted to 1989 dividends using the Consumer Price Index.*

Dividend Ranking	% of total earnings of dividend-paying industrial firms		Cumulative % of total earnings of dividend-paying industrial firms		Real earnings(Bln ZAR, 1989 base)	
	1989	**2008**	**1989**	**2008**	**1989**	**2008**
Top 10	65	61	65	61	13.48	78.17
11-20	17	22	81	84	3.51	28.62
21-30	12	5	93	88	2.43	5.80
31-40	2	4	95	92	0.46	4.64
41-50	3	3	98	95	0.55	3.71
51-60	1	0	99	95	0.23	-0.09
61-70	0	2	99	96	0.09	2.14
71-80	1	2	100	98	0.12	2.56
81-90	0	0	100	99	-	0.54
91-100	0	0	100	99	-	0.28
101-110	0	0	100	99	-	0.18
111-120	0	0	100	99	-	0.14
121-130	0	0	100	99	-	0.05
131-140	0	0	100	99	-	0.29
141-152	0	1	100	100	-	0.78
Total for all firms	100.0%	100%			20.87	127.90
Number of firms	77	151				

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