

DIVIDEND POLICY CHANGES IN THE PRE-, MID-, AND POST-FINANCIAL CRISIS: EVIDENCE FROM THE NIGERIAN STOCK MARKET

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ABSTRACT

This paper examines the impact of the global financial crisis on Nigerian listed firms' dividend policies. Our findings indicate that firms adjust their dividend policies in a manner consistent with the need to preserve financial flexibility and mitigate going-concern risks during the crisis period. Specifically, highly leveraged firms and firms with low cash flows are more likely to omit dividend payments during the crisis. Moreover, the negative effects of foreign ownership on dividend payments during the pre-crisis are muted during the crisis. This suggests that the tax-induced clientele effect became irrelevant as cash dividends became the first order of business for foreign investors during the crisis. In the same vein, prevailing investor demand for cash dividends exerts a positive influence on firms' probability to increase dividends during the crisis, implying that markets attach a high valuation to firms that are able to pay during the crisis period. We also find support for past dividends as a reference point for current dividend decisions in both the crisis and non-crisis periods, although the relation is weakened during the crisis. This implies that some managers strive to maintain stable dividends during the crisis period. Nevertheless, their ability to do so weakens during this period.

Keywords: dividend payout, financial crisis, financial flexibility, foreign ownership, signalling.

INTRODUCTION

Does a firm change its dividend policy when dealing with a financial crisis? This is a relatively underexplored question in the literature as extant theories on dividend policy are generally based on the assumption of normal economic conditions. During the financial crisis, the issue of non-payment of dividends may be more pronounced compared to non-crisis periods due to the constrained financial position of firms resulting from the crisis or managers deliberately using

the crisis as an excuse to omit or reduce dividend payments. Therefore, companies may alter their payout policies in response to a financial crisis. Despite the extensive efforts made in explaining dividend policies, very little effort has been made to explain firm dividend payout patterns during a financial crisis. Existing studies in this regard are based on descriptive analysis of dividend payout patterns during crises. Thus, they do not provide explanation for factors that affect payouts during crises.

Therefore, this study seeks to contribute to prior findings on dividend payout policies in the pre-, during and post-financial crisis using the Nigerian market. Prevalence of non-payment of dividend has been reported in the Nigerian market as the leading financial information service in the market; Proshare News (2013) noted that 43 out of 200 companies listed on the market did not pay dividends between 2008 and 2012. Similarly, the Nigerian stock market was not spared from the contagion effect of the financial crisis of 2008 and 2009 as indicated by the market fundamentals. Market capitalisation dropped by 51% from USD 82.17 billion in 2007 to USD 33.99 billion in 2009. Thus, the crisis has put many companies in a difficult financial situation, and this may have an influence on their payout decisions. This creates an opportunity to observe whether dividend payout policies changed during the financial crisis compared to the pre- and post-financial crisis periods.

Based on the foregoing, the aim of the paper is threefold: First, we examine Nigerian firms' dividend policies during the pre-crisis (2003–2007), crisis period (2008–2009) and post-crisis period (2010–2012) with a focus on whether changes in the predictors of dividend payouts during the financial crisis is consistent with the need to preserve financial flexibility. Second, we contribute in terms of methodology by examining the determinants of different payout options (cut, increase, maintain, omit) rather than concentrating on the decision "to pay" or "not to pay" as previous studies have done. This is important as the decision "to pay" may either take the form of dividend cuts, dividend increases or maintaining dividend levels. It is important to examine these different payout choices as changes in existing dividends are more frequent than decisions on initiation and omissions (Li & Lie, 2006).

Third, we consider an explanation that has not received much attention in the literature by examining whether foreign ownership can explain payout decisions. The need for this derives from the dominance of foreign investors over domestic investors in the Nigerian market, with 61.4% foreign ownership reported as of 2012. The Nigerian law allows 100% foreign ownership of firms outside the oil and gas sector. Thus, the market is considered to be foreign driven, and this may have an influence on corporate policies including dividend payout decisions.

EMPIRICAL EVIDENCE AND HYPOTHESES DEVELOPMENT

Determinants of Payout Decisions

In line with Lintner's (1956) dividend smoothing hypothesis, studies show that firms consider their past dividend in making current dividend decisions (Chemmanur, He, Hu & Liu, 2010; Imran, 2011; Jasim & Hameeda, 2011). Thus, we predict that firms that have a past record of dividend payment will pay dividends by increasing, maintaining or at worst reducing dividend levels rather than omitting dividends entirely during normal economic conditions. However, we envisage that firms may abandon the trend of maintaining stable dividends during the crisis due to constrained financial ability. Thus, we predict further that past dividends may not have an effect on current dividend decisions during the crisis.

Rozeff (1982) argued that high leverage has a negative effect on dividend payment due to the need to reduce transaction costs. Dividend payment may lead to an increase in transaction costs associated with raising external finance (Easterbrook, 1984; Rozeff, 1982). This derives from the fact that as resources under management control are reduced through dividend payments, companies are forced to seek external financing by going to the capital market, and this involves transaction costs. In line with this, subsequent studies (Benito & Young, 2003; Eije & Megginsson, 2007) have shown that higher leverage reduces the likelihood of paying cash dividends. This is based on the argument that in order not to increase debt levels, highly levered firms will have less preference for dividend payments to prevent/reduce transaction costs involved in raising external financing. Contrarily, other studies (Khan, Naz, Khan, Khan, Khan, & Mughal, 2013; Mehta, 2012) document an insignificant relationship in this regard. However, from another perspective, studies have shown that one of the ways firms attain financial flexibility is by maintaining low leverage (Daniel, Denis & Naveen, 2008; DeAngelo & DeAngelo, 2007). Thus, due to the need for financial flexibility, firms omit dividends to keep their leverage low (Bulan & Subramanian, 2008; Arslan-Ayaydin, Florackis, & Ozkan, 2014). Therefore, we predict in line with the transaction cost hypothesis and the need to preserve financial flexibility that highly levered firms will prefer to omit dividends than pay through any other option. We predict further that the need to preserve financial flexibility will cause highly levered firms to be more constrained during the crisis period. Thus, we expect the tendency to omit dividends rather than adopt the other payout choices to be higher for highly levered firms during the crisis.

Jensen (1986) advanced the free cash flow hypothesis and contends that companies with considerable free cash flow may encounter agency conflicts as they are likely to invest in unprofitable projects. However, such conflicts can be mitigated through payment of dividends (Easterbrook, 1984; Jensen, 1986). Thus, companies with sizeable free cash flow are more likely to pay dividends to prevent agency issues. In line with this, cash flow has been reported to be positively related to dividends by subsequent studies (Adelegan, 2003; Amidu & Abor, 2006; John & Muthusamy, 2010). Contrarily, other studies document a negative relationship between dividends and cash flow and indicate that firms plough back into the business with cash flow increases rather than distributing dividends (Bradford, Chen & Zhu, 2013; Imran, 2011). The above indicates inconclusive evidence on the effect of cash flows on dividend payouts. From another perspective, higher free cash flow indicates more financial flexibility, and firms that are financially flexible have better ability to pay dividends (Bancel & Mittoo, 2011; Bulan & Subramanian, 2008). In line with the free cash flow hypothesis and the notion that higher financial flexibility leads to better ability to pay, we predict that firms with higher cash flow will prefer to pay dividends either through cuts, increases or no change in dividend levels than not paying at all. Similarly, Chay and Suh (2005) argued that firms have a lower likelihood to pay dividends when there is uncertainty of cash flow, as such firms fear depletion of cash resources in the future. Due to the uncertainty of cash flow during the financial crisis, we predict further, in line with the desire of firms to preserve financial flexibility, that firms with lower cash flow will have higher tendency to omit dividends during the crisis, while firms with higher cash flow will have more ability to distribute dividends during such a period.

Fama and French (2001) document that the characteristics of a dividend payer include higher profitability, larger size and fewer investment opportunities. The authors indicate that firms with these characteristics are mature firms and are more likely to pay dividends. Subsequent studies (Al-Malkawi, 2007; Bebczuk, 2004; Ehsan, Tabassum, Akram, & Nazir, 2013; Imran, 2011) have reported mixed findings on how these characteristics affect dividend payout. In line with Fama and French (2001), we predict that larger firms and firms with higher profitability will pay through these different options (cut, increase, maintain) rather than omitting dividends entirely. On the other hand, we predict that more investment opportunities will lead to a higher tendency to omit than to pay through any of the choices. We expect that some of the attributes of a dividend payer should still hold during the financial crisis. Particularly, we predict that more profitable firms and larger firms will have better ability to withstand any shock resulting from the crisis. Thus, such firms are more likely to pay through cuts, increases or maintaining rather than omit dividends during the crisis. However, we predict that firms may not see the prospects in investing during the

crisis; thus, growth opportunities may have no influence on payout decisions in such a period.

In addition to the firm characteristics discussed above, different forms of ownership structure have also been used to explain payout policies. However, the effect of foreign ownership on payout policies remains generally scant in the literature. In explaining foreign ownership effects, the scant studies available have argued either in the direction of the agency theory or in line with the clientele theory of dividends. Argument in line with the agency theory holds that dividend payment is an alternative to direct monitoring of firms by large shareholders targeted at reducing overinvestment problems (Easterbrook, 1984; Jensen, 1986). In line with this, few studies (Chai, 2010; Jeon, Lee, Moffett, 2011; Manos, 2003; Ullah, Fida & Khan, 2012) have found a positive relationship between foreign ownership and dividend payment. This is based on the argument that foreign investors cannot directly monitor the actions of management; they, however, press firms to pay out cash to serve as a substitute for direct monitoring.

On the other hand, the tax-induced clientele effect suggests that differences in the tax treatment of dividends and capital gains influence investor preferences for a particular dividend pattern (Brennan, 1970; Elton & Gruber 1970). Thus, investors who are tax disadvantaged will prefer low-yield firms, while tax advantaged investors will prefer high-yield firms. Unlike studies that argued based on agency theory, Ferreira, Massa, and Matos's (2010) findings revealed a negative relationship between foreign institutional ownership and the likelihood to pay dividends as well as the magnitude of dividend payments. This is based on the argument that foreign investors are tax disadvantaged and have lower preference for dividend-paying stocks. Furthermore, other studies document that institutional investor clientele have less preference for dividend paying stocks (Brav et al., 2005; Grinstein & Michaely, 2005; Hankins, Flannery & Nimalendran, 2008). This is attributable to reasons related to tax and transaction costs. Foreign investors on the NSE are predominantly institutional investors. Domestic investors are predominantly retail investors, while domestic institutional investors enjoy tax exemption on their dividend income in the market. Based on the unfavourable tax status of foreign investors, we predict in line with the tax-induced clientele theory that foreign investors have lower preference for dividend-paying stocks. Thus, firms will have a greater tendency to omit than to pay through any of the other options. However, we argue that the foreign ownership effect on dividend payout decisions may be altered during the crisis, as the dividend preference of foreign investors may change during such a period. Therefore, we predict that foreign ownership may lose its explanatory power on dividend payout decisions as a result of the crisis.

Other explanations have been offered recently on dividend payout decisions. DeAngelo, DeAngelo, and Stulz (2006) employed a new proxy for testing the implication of the lifecycle theory of dividends given by Fama and French (2001). De Angelo et al. (2006) argued that the implication of lifecycle theory can be tested by relating dividend payment to its mix of earned and contributed capital as measured by retained earnings to total equity (RE/TE) or high retained earnings to total assets (RE/TA). The authors consider this proxy as reasonable for measuring the stage of a firm in its financial lifecycle, as the proxy assesses the degree to which the firm is self-financing or reliant on external capital. Thus, it was argued that mature firms usually have most equity earned rather than contributed [indicated by high retained earnings to total equity (RE/TE) or high retained earnings to total assets (RE/TA)]. Thus, their findings indicate that when equity is earned rather than contributed, firms have a greater tendency to pay dividends as such firms are largely self-financing and are regarded as better candidates for dividend payment. On the other hand, the tendency to pay dividends is very low when most equity is contributed. Using the proxy of De Angelo et al. (2006), studies (El-Ansary & Gomaa, 2012; Khani & Dehghani, 2011; Shin, Kwon & Kim, 2010) have provided support for the lifecycle theory with respect to the decision to pay dividends. Contrarily, Ishikawa (2011) found no evidence in support of the lifecycle theory of dividends. In line with the approach of De Angelo et al. (2006), we predict that firms with higher retained earnings to total equity will prefer to pay through any of the different options rather than omit dividends entirely. We expect this prediction to still hold during the crisis as it is expected that self-financed firms will have better ability to withstand the crisis.

Another recent explanation on dividend payout is the catering theory of dividends propounded by Baker and Wurgler (2004a). This theory explains that managers cater to the demand of investors for dividends and therefore pay when investors place a high premium on dividend payers and do not pay when investors prefer no dividend payment. Thus, the theory predicts that firms are more likely to pay dividends when the dividend premium is high. Baker and Wurgler (2004b) found that catering theory is the most significant explanation for dividend initiation and omission decisions. Empirical studies (Eije & Megginsson, 2007; Ferris, Jayaraman & Sabherwal, 2009; Li & Lie, 2006) subsequently provided support for catering theory, as the dividend premium was found to be positively related to payout decisions. Contrarily, Baker, Saadi, Dutta and Gandhi (2007) indicate that managers did not express support for catering theory in their dividend decisions. In line with catering theory, we predict that firms will pay through any of these options (cut, increase, maintain) rather than omit dividends entirely when the dividend premium is high. We predict that catering theory will be more relevant during the crisis as firms desire to retain

investor confidence and will respond more to their demand for dividends during such a critical period.

Dividend Behaviour during the Financial Crisis

A dividend cut is usually considered undesirable as it may send negative signals to investors; however, Reddemann, Basse, and Johann-Matthias (2010) argued that a dividend cut is an appropriate act to ensure financial stability during distress. Their findings indicate that during the financial crisis of 2008 and 2009, insurance firms in Europe adjusted their dividend policies through dividend cuts to strengthen liquidity and preserve their capital base. Similarly, a survey study by Bancel and Mittoo (2011) revealed that one of the ways in which managers of French firms preserved financial flexibility during the global financial crisis was through dividend cuts. De Angelo and De Angelo (1990) reported similar findings on NYSE firms during the financial distress that occurred between 1980 and 1985. Their findings revealed that managers reduced dividends significantly in response to the crisis, and this was attributed to poor financial performance witnessed during the distress period.

Hauser (2013) also observed that the tendency to cut dividends increased among US firms between 2008 and 2009 due to low cash ratios, which resulted from the financial crisis. In another study, Bistrova and Lace (2012) reported that 23% of the total number of dividend payers in the Central Eastern European (CEE) region ceased payments of dividends during the 2008 and 2009 financial crisis. Similarly, Ronapat and Evans (2005) documented that the Asian financial crisis that occurred within their study period led to an increase in the number of non-payers on the Thailand Stock Exchange due to the financial distress witnessed by the firms. In the same vein, Kirkulak and Kurt (2010) noted that the financial crisis experienced in the Istanbul market in the year 2001 led to a significant reduction in the number of dividend-paying firms.

Bebczuk's (2004) findings differ slightly as the result of the study indicates that firms in Argentina increased dividends at the beginning of the crisis and then subsequently cut dividends. It was argued that the initial increase resulted from the desire of investors to change their domestic wealth into dollars. This pressed firms to pay high dividends to allow investors to safeguard themselves from expected devaluation. The authors attributed the subsequent cut to a weak financial position and a lack of alternative financing sources. Floyd, Li, and Skinner (2011) reported that financial and industrial firms in North America adjusted their dividend policies in different ways in response to the financial crisis. Financial firms cut dividends sharply between 2008 and 2009, while industrial firms modestly reduced their dividends with a barely noticeable drop during the same period. Dividend patterns of financial firms during the crisis

were attributed to dire financial circumstances and direct regulatory intervention that forced them to cut their payouts. On the other hand, the barely noticeable drop in dividend payments by the industrials during the crisis was linked to manager reluctance to cut dividends.

Contrarily, other evidence indicates that dividend payments increased during the financial crisis. Kuo, Philip, and Zhang (2013) revealed that the global financial crisis influenced dividend payments in the UK positively, as a considerable upward trend occurred during the period. The authors attributed this to the desire of firms to signal sound financial health to sustain increased investor confidence. Similarly, Acharya, Gujral, and Shin (2009) reported that despite the huge losses recorded by sampled banks in the US, UK and Europe during the crisis period, these banks paid dividends throughout the crisis. The authors argued that such payment depleted the banks' capital. However, other studies found no evidence to indicate that firms alter their payout policies during crises. Mollah (2011) reported no significant difference in the payout behaviour of firms on the Dhaka Stock Exchange before, during and after the Asian financial crisis of 1997 and 1998. Similarly, Sierpińska and Mlodkowski (2010) reported that Japanese firms did not decrease dividend payments during the prolonged crisis that occurred between 1991 and 2008. Based on the foregoing, it is evident that the empirical evidence on dividend payment during crises is inconclusive, thus necessitating further research in this area.

DATA AND METHODOLOGY

The study is based on a sample of 126 non-financial firms listed on the Nigerian Stock Exchange between 2003 and 2012. We identify three distinct sub-samples that include the pre-crisis period (2003–2007), crisis period (2008–2009), and post-crisis period (2010–2012). For the purposes of this study, we define the crisis period as the years 2008 and 2009, as the impact of the global financial crisis was primarily felt in these years. Consistent with prior studies, we exclude financial firms, as most countries subject such firms to certain requirements and restrictions to ensure confidence and stability in the financial system. Such regulatory issues may distort results (Ap Gwilym, Seaton, & Thomas, 2004). The final sample after the deletion of missing values and outliers is 1048 firm-year observations. Data on firm level characteristics were obtained from the financial reports of the listed companies. We also obtained data on stock market performance from various issues of the fact book of the Nigerian Stock Exchange and data on macroeconomic variables from Datastream. Descriptive analysis is used to show how the firms have adjusted their dividend policies during the financial crisis, while multinomial logistic regression analysis is used to identify the determinants of the different payout options across the different sub-samples.

Logistic regression is employed because the dependent variable is categorical in nature. Specifically, the study employs multinomial logistic regression because the dependent variable has more than two categorical outcomes.

The multinomial logit model estimated is given as follows. The dependent variable in the model is the firm dividend payout decision, which is broken into four discrete payout choices: The decision to cut dividends, the decision to increase dividends, the decision to maintain dividends, and the decision to omit dividends; thus, the dependent variable is measured as a dummy variable with values of 1, 2, 3, 4 for the different payout choices, respectively. There are nine explanatory variables in the model, and the study relies on the literature to obtain the measurement of these variables. We employ the proxies for the variables based on what is commonly used in the dividend literature. Foreign ownership (FOREIGN) is measured as the percentage of foreign investor shareholdings to total shareholdings. The variable tests the implication of the tax-induced clientele theory, and it is included in the model because it has not received much attention in the dividend literature. In addition, the rise in the percentage of foreign investor shareholdings in the Nigerian market necessitates its inclusion. Dividend premium (PREM) is the proxy for catering theory. In line with Baker and Wurgler (2004a; 2004b), it is measured as the log difference between the average market to book ratio for payers and non-payers. Retained earnings to total equity (RE/TE) is the proxy for the lifecycle theory. As given by De Angelo et al. (2006), it is measured as retained earnings divided by total equity. Catering and lifecycle theories are relatively new theories. They have primarily been tested in developed markets and are yet to be applied in an African setting. Thus, we include the proxies for these theories in the model to ascertain whether they can also explain payout policies in the Nigerian market. All the other variables in the model have been tested by previous studies, and they are regarded as traditional determinants of dividend payouts. Thus, these traditional determinants are included in the model to ensure that the model is correctly specified. SIZE, ROA, and INV represent the characteristics of a dividend payer. SIZE is the size of the firm, and it is measured as the natural log of total assets. ROA is the measure of firm profitability, and it is measured as net income divided by total assets.¹ INV represents the growth opportunities of the firm, and it is measured using the market-to-book ratio. Most studies use this ratio as a proxy for investment opportunities as it has higher information content than the price-earnings ratio, which some studies also employ (Adam & Goyal, 2008).

CF is the cash flow of the firm. We employ the popular measure of cash flow, which is the net cash flow from operating activities. This is extracted directly from the companies' statement of cash flow in the reports. LEV represents the leverage of the firm. The study employs debt to total assets, which

is commonly used as a measure of leverage in the dividend literature. Both CF and LEV, in addition to explaining the free cash flow hypothesis and transaction cost hypothesis, respectively, have been used to provide an explanation for financial flexibility. PYDPS stands for dividend payment in the previous year, and it explains the stability of the dividend.

$$\ln \frac{pr(DIV = j)}{pr(DIV = m)} = \alpha_0 + \beta_1 FOREIGN_{it} + \beta_2 PREMIUM_{it} + \beta_3 RE/TE_{it} + \beta_4 SIZE_{it} + \beta_5 ROA_{it} + \beta_6 INV_{it} + \beta_7 CF_{it} + \beta_8 PYDPS_{it} + \beta_9 LEV_{it}$$

In the equation above, j represents the different outcome levels: 1 (cut dividend), 2 (increase dividend), and 3 (maintain dividend), while m is the base outcome, 4 (omit dividend). Outcome level 4 (decision to omit dividend) is chosen as the base outcome not only because it is the outcome with the highest category, which the software chooses automatically, but also because it is regarded as the most extreme way that firms can adjust their dividend during a crisis. Apart from the choice to "omit dividend", all other options still fall under the choice to pay.

EMPIRICAL RESULTS

Descriptive Statistics of Variables

The summary statistics of the variables in the regression model are presented in Table 1 for the different sub-periods. After deletion of missing values and outliers, the table shows 471 firm-year observations for the pre-crisis period, 227 firm-year observations for the crisis period and 350 firm-year observations for the post-crisis period. The firm payout decision is a dummy variable with four outcome levels. The statistics in Table 1 reveal that on average, foreign investors own 11% of total shareholdings in the Nigerian Stock Exchange in the pre-crisis period. The mean value increased to 24% during the crisis and to 55% in the post-crisis period. This indicates a consistent rise in foreign ownership in the market. The mean value of dividend premium shows that investor demand for dividends increased considerably during the crisis. The highest mean value (0.68) was reported during the crisis, while the lowest mean value was reported in the pre-crisis period (0.39). Thus, investors place higher value on dividend-paying firms during the crisis than during non-crisis periods, indicating higher preference for funds due to the economic downturn.

The mean value of retained earnings to total equity, which is approximately 37% in the pre-crisis period, dropped to 23% during the crisis and increased to 47% in the post-crisis period. This implies that firms have less retained earnings in the composition of their equity during the crisis. Thus, they

have less retained earnings to rely on due to a decline in earnings during the period. The mean value of size, which increased across the different sub-periods, indicates the expansion of firms over the years. The highest mean value was reported in the post-crisis period. Thus, as measured by the natural log of total assets, the average size of the firm in the post-crisis period is 22.5 (USD112 million).

Decline in the profitability of firms is shown by the mean figures, which declined from 19% in the pre-crisis period to 10% and 9% during the crisis and post-crisis period, respectively. This suggests that firms recorded declines in profitability during the crisis, and the effect of the crisis possibly extended until the post-crisis period. The table indicates the availability of valuable investment opportunities amongst firms listed in the market across the different sub-periods. A market-to-book ratio of less than one indicates a lack of valuable investment opportunities (Chung, Wright, & Charoenwong, 1998). The ratio is above one for the different sub-periods, although the least value was recorded during the crisis.

Table 1
Descriptive statistics of variables

Variables	Pre-Crisis (2003–2007)			Crisis (2008 & 2009)			Post-Crisis (2010–2012)		
	Obs	Mean	S.D.	Obs	Mean	S.D.	Obs	Mean	S.D.
DIV (1,2,3,4)	471			227			350		
Foreign ownership	471	0.109	0.383	227	0.238	0.434	350	0.549	0.222
Dividend premium	471	0.388	0.131	227	0.681	0.384	350	0.525	0.238
Retained earnings to total equity	471	0.371	1.307	227	0.227	1.150	350	0.470	1.163
Size	471	21.26	1.892	227	22.13	1.825	350	22.51	1.846
Profitability	471	0.185	0.620	227	0.104	0.637	350	0.095	0.642
Growth opportunity	471	1.951	1.514	227	1.813	1.558	350	1.946	1.323
Cash flow	471	0.292	0.288	227	0.193	0.608	350	0.172	0.927
Leverage	471	0.484	0.529	227	0.502	0.318	350	0.528	0.360
Past dividend	471	0.719	1.406	227	0.586	1.798	350	0.516	1.833

There is an indication that firms listed on the Nigerian Stock Exchange are highly levered across the different sub-periods. In the pre-crisis period, 48% of total assets were financed by debt as reflected in the mean value. This

increased to 50% during the crisis and increased further to 53% in the post-crisis period. Descriptive statistics also reveal that cash flow levels decreased during the crisis. The mean value of cash flow decreased from 0.29 in the pre-crisis period to 0.19 during the crisis. The figure decreased slightly in the post-crisis period. Thus, firms suffered depletion in cash flow levels as a result of the crisis. The mean value of past dividends decreased over the sub-periods, indicating a decline in the average dividends paid by firms in the market.

Dividend Adjustment in Response to Financial Crisis

Figure 1 depicts the nominal dividends as well as the proportion of dividend payers over the period. The dotted line in Figure 1 indicates that nominal dividends recorded a consistent rise in the pre-crisis period (2003–2007). The figure rose from USD228 million to USD406 million. However, the proportion of dividend payers declined during this period (except in 2004, when an increase occurred). The proportion of dividend payers fell from 57% in the year 2003 to 52% in the year 2007. This signifies that the increased dividend payments during this period were coming from a reduced number of payers.

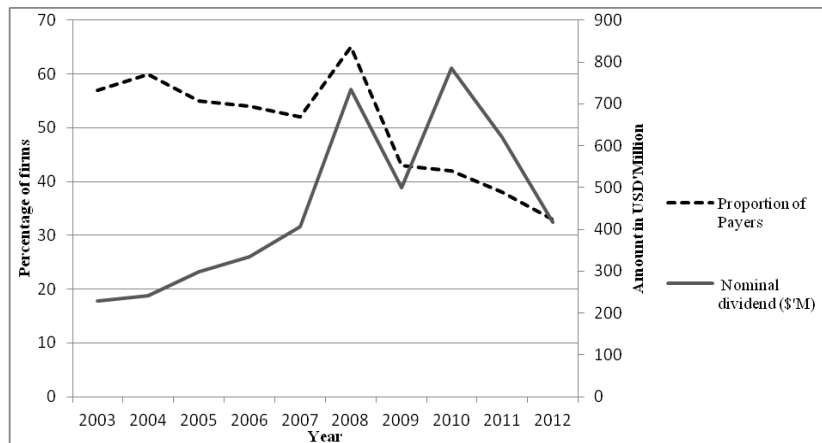


Figure 1. Dividend payment on the NSE (2003–2012)

The crisis period (2008 and 2009) witnessed a varying trend. At the early stage of the crisis (2008), both the nominal dividends as well as the proportion of dividend payers increased. However, both figures declined in the year 2009. The proportion of payers rose by 25% in 2008 and then fell by 34% in 2009. A sharp increase in the amount of dividends paid was also recorded in the year 2008 as the nominal dividends, which were USD407 million in 2007, increased to USD734 million in 2008 and then declined again to USD499 million in 2009 when the crisis was at its worst. There was an initial sign of recovery in the post-

crisis period (2010-2012) as nominal dividends increased in the year 2010. However, the reverse trend occurred in the last two years, indicating that the recovery was not sustained. On the other hand, the percentage of dividend payers recorded consistently fell from 2009 to 2012. Nominal dividends, which increased to USD786 million in 2010, fell to USD416.7 million in 2012. The trend during the crisis indicates that dividend payments were greatly affected in the second year of the crisis. More explanation on this is given in the subsequent sub-section.

Table 2
Dividend payout choices on the Nigerian stock exchange (in percentage)

Year	Cut dividend	Increase dividend	Maintain dividend	Omit dividend
2003	21.7	28.3	7.6	42.4
2004	14.1	34.8	12.0	39.1
2005	15.2	27.2	13.0	44.6
2006	13.7	28.4	12.6	45.3
2007	5.0	31.0	16.0	48.0
2008	14.5	41.8	9.2	34.5
2009	17.9	18.8	6.0	57.3
2010	12.6	21.0	7.6	58.8
2011	11.8	15.3	11.0	61.9
2012	11.8	15.3	6.0	66.9
Average	13.8	26.19	10.1	49.9

To gain insight into how firms adjusted their dividend policies during the study period, Table 2 presents the proportion of firms that cut, increase, maintain or omit dividends over the study period. Following the approach of Andres, Betzer, Bongard, Haesner, and Theissen (2013), dividend increasing (decreasing) events are defined as changes in dividends that constitute more than a 5% increase (decrease) in dividend per share. Dividend-maintaining events constitute dividend changes of equal to or less than 5%. Non-payment in a particular period is regarded as dividend omission.

Table 2 shows that the percentage of firms that cut dividends decreased from the year 2003 to 2007 (except in the year 2005). The percentage that had declined to 5% in 2007 increased during the crisis to 14.5% and 17.9% in 2008 and 2009, respectively. The percentage declined again from the year 2010 onwards. The percentage of firms that omitted dividends increased from the year 2003 to 2007 (except for a decline recorded in 2004). In the year 2008, the percentage decreased by 28% from what was recorded in 2007. However, the

percentage increased again in the year 2009 with a 19% increase above what was recorded in 2007. Increases in the percentage of dividend-omitting firms continued from the year 2010 to 2012.

The percentage of firms that increased dividends fluctuated between the years 2003 and 2007. However, regardless of the crisis, some firms still recorded dividend increases in the years 2008 and 2009. This supports the signalling theory as firms may desire to portray a sound financial condition despite the crisis. However, the proportion of firms that recorded dividend increases, which increased to 41.8% in 2008, declined to 18.8% in 2009. In the year 2010, the percentage increased again but fell in the years 2011 and 2012. Similarly, the percentage of firms that maintained dividends increased between the years 2003 and 2007 (except in 2006). In accordance with the dividend smoothing hypothesis, Table 2 indicates that some firms maintained their dividends despite the crisis; however, a drop in the percentage of such firms was recorded for both years of the crisis, 2008 and 2009. The proportion of firms that maintained dividends decreased from 16% in 2007 to 9.2% in 2008 and decreased further to 6.0% in 2009. The proportion increased again in 2010 and 2011 but fell in 2012.

Consequently, it can be inferred that the negative impact of the crisis was primarily felt at the peak of the crisis, the year 2009. We attribute the rise in dividends at the beginning of the crisis to the desire to signal sound financial standing even in the face of crisis. The subsequent decline in 2009 may be due to the inability of some firms to sustain an increase in dividend payments due to aggravation of the effect of the crisis and the costs associated with signalling. Miller and Rock (1985) noted that a major cost associated with signalling is the need to maintain paying high level of dividends, which small firms cannot imitate. Thus, many firms might have cut down their dividends in the year 2009 due to the inability to sustain signalling costs.

Our findings concur with the findings of Bebczuk (2004) on the Argentine stock market, which is also an emerging market. The findings reported that Argentine firms paid higher dividends at the start of the crisis and subsequently cut dividends. Descriptive analysis suggests further that firms listed in the Nigerian market have primarily adjusted their dividends in response to the crisis through dividend cuts. Although dividend omissions recorded high figures in both years of the crisis, this level has been maintained from the beginning of the study period. Thus, it cannot be totally attributed to the crisis. In addition, the percentage of firms that omitted dividends increased only at the peak of the crisis. Findings that indicate that firms adjusted their dividends through cuts match prior findings (Bancel & Mittoo, 2011; De Angelo & De Angelo, 1990; Hauser, 2013; Reddemann et al., 2010) that also reported firms cut dividends during the financial crisis to strengthen their liquidity. The average value of each outcome

level of the dependent variable depicted at the bottom of Table 2 shows that approximately 50% of the sampled firms omitted dividends over the study period.

Regression Results

The logit model is a non-linear model, and therefore, the assumptions related to the distribution of independent variables such as linearity, normality and homoscedasticity are not required to be satisfied to execute the models (Schwab, 2010). However, the variance inflation factor (VIF) was used to test for the existence of possible multicollinearity. The mean VIF (1.22) and the VIF values for each of the variables fall below 10. Thus, the model has no problem of multicollinearity.

The estimation results from multinomial logistic regression analysis are presented in Table 3. The model's likelihood ratio χ^2 values of 163.9, 61.7, and 67.9 are statistically significant at 1%. This indicates the overall fit of the model for all the sub-periods. The coefficient estimates compare the likelihood of different payout options [cutting dividends (1), increasing dividends (2), maintaining dividends (3)] to the likelihood of omitting dividends (4). The number of observations is 1048: The pre-crisis period has 471 observations, the crisis period has 227 observations and the post-crisis period has 350 observations.

Payout Choices before the Crisis

Factors explaining dividend payout choices in the pre-crisis period include foreign ownership, retained earnings to total equity, size, profitability and past dividends. The results shows that firms with a higher level of foreign ownership prefer to omit dividends than to pay through dividend cuts or dividend increases. Consistent with the tax-induced clientele effect, we attribute this to the fact that foreign investors in the Nigerian market are predominantly institutional investors who have less preference for dividends due to their unfavourable tax status and reasons related to transaction costs. Our finding suggests that firms listed in the market shape their dividend payout policies to suit the preference of foreign investors in the pre-crisis period. However, the result does not support the agency theory, which argues that foreign investors will press for more dividends to substitute for direct monitoring.

Table 3
Multinomial logit model for dividend payout decisions

Explanatory variables	Base outcome = Omit dividend (4)								
	Pre-crisis (2003-2007)			Crisis (2008-2009)			Post-crisis (2010-2012)		
	1 (cut)	2 (increase)	3 (maintain)	1 (cut)	2 (increase)	3 (maintain)	1 (cut)	2 (increase)	3 (maintain)
Constant	-2.12***	-1.32***	-1.98***	-0.50	-1.19**	-2.15**	-1.56**	2.20	-2.41
Foreign Ownership	-0.96**	-1.03**	-0.80	-1.40	-0.09	-0.30	-1.49*	-1.20**	-0.59
Dividend Premium	1.80	0.16	0.53	0.51	0.98***	0.31	0.65	2.25***	0.80
Retained Earnings to Total Equity	-0.21**	-0.28***	-0.27***	0.32	0.31	0.40	-0.33	-0.12	-0.06
Size	0.04	0.10***	0.06*	0.03	0.04	0.01	0.01	0.01	0.02
Profitability	1.25*	1.83***	1.72***	1.97*	2.05*	3.34**	0.43*	0.68**	0.45*
Growth Opportunities	-0.04	-0.03	-0.02	-0.01	-0.01	-0.01	-0.04	-0.03	-0.01
Leverage	-0.12	-0.22	-0.36	-0.69**	-0.18**	-0.39	-0.11**	-0.35*	-0.25
Cash flow	1.48	0.14	1.30	1.17**	1.01**	1.12	0.40**	0.39**	0.28
Past Dividend	2.33***	1.93***	1.96***	0.67**	0.61**	0.34**	0.51***	0.38**	0.39**
R ²			163.9***			61.7***			67.9***
No. of Observations	471	471	471	227	227	227	350	350	350

*significant at $p < 0.10$; **significant at $p < 0.05$; ***significant at $p < 0.01$.

Note: We controlled for stock market performance and interest rate in unreported results and found that they had no significant impact on the payout choices across the different sub-samples

Findings on past dividends indicate that firms with a past record of dividends will maintain, increase or at worst reduce dividend levels rather than omit them entirely. This implies that past dividends are a reference point for current dividend decisions on the Nigerian Stock Exchange. In particular, the result that indicates that firms will prefer to maintain rather than omit dividends is consistent with the dividend smoothing hypothesis of Lintner (1956). Two of the characteristics of a dividend payer indicated by Fama and French (2001) are supported in the pre-crisis period. Findings show that more profitable firms will prefer to pay through any of these options (cut, increase, maintain) rather than not paying at all. Similarly, results obtained for size indicate that larger firms will prefer to increase or maintain dividends than to omit. The negative coefficient obtained for retained earnings to total equity contradicts the prediction of the life cycle theory. Thus, firms that place more reliance on earned capital will prefer to omit dividends than to pay through any of the other options. This finding suggests that firms plough back funds into investment opportunities when they rely more on earned capital. Variables found insignificant in the pre-crisis period include dividend premium, growth opportunities, leverage and cash flow. This indicates lack of evidence in support of catering theory, transaction cost hypothesis and the free cash flow theory during this period. Lack of support for leverage and cash flow also indicates that firms do not prioritise maintaining financial flexibility before the crisis.

Payout Choices during the Crisis

Findings indicate a shift in dividend policy during the crisis as a predictor of dividend changes during this period. Theories that could not explain dividend policy in the pre-crisis period became relevant during the crisis (catering theory; transaction cost hypothesis; free cash flow hypothesis). Factors found significant during the crisis include: dividend premium; profitability; leverage; cash flow; and past dividend. Contrary to expectations that the crisis may impede the ability of firms to respond to investor demand for dividends, findings show that firms respond to demand for dividends by increasing rather than omitting when the dividend premium is high. This is in agreement with the catering theory of dividends (Baker & Wurgler, 2004a) and shows that firms cater to meet investor demand for dividends during the crisis. This suggests that Nigerian companies become more conscious of investor demand and perceive that dividends are particularly important to investors during a crisis period and thus respond to demand for dividends.

Leverage and cash flow also became significant during the crisis. The results indicate that firms with higher debt levels will prefer not to pay at all than paying through increases or even through dividend reductions. Thus, firms become mindful of their debt level during a crisis. This finding is consistent with

the transaction cost hypothesis and indicates that highly levered firms are particularly concerned about reducing transaction costs for raising external financing during a crisis. Contrarily, findings indicate that firms with higher cash flow will cut or increase dividends rather than omit dividends entirely. The results obtained for cash flow suggests that companies seek to boost investor confidence, which may be eroded during a crisis. Thus, consistent with the free cash flow hypothesis, companies with higher free cash flow will tend to distribute dividends rather than omit to indicate that such funds are not invested in unprofitable investments. Moreover, findings on leverage and cash flow that indicate that highly levered firms and firms with lower cash flows will prefer to omit than to pay through increases or reductions is an indication of the need to preserve funds during the crisis. Thus, financial flexibility becomes a priority during a crisis.

Findings indicate that the explanatory role of profitability is unaffected by the crisis. This finding is also in line with the fact that firms that have better financial slack have more ability to distribute dividends during a crisis. The role of past dividends weakened during the crisis, indicating that firms' ability to maintain stable dividends declined as a result of the crisis. Other variables (foreign ownership; retained earnings to total equity; size) lost significance during the crisis. The insignificance of foreign ownership during the crisis indicates that the tax-induced clientele theory became irrelevant. Therefore, firms are not concerned about shaping dividend policies to suit the preferences of foreign investors during the crisis. Results obtained on foreign ownership during the crisis also do not support the agency theory that foreign investors will press for more dividends to substitute for direct monitoring. Growth opportunities remain insignificant even during the crisis. Therefore, among the characteristics of a dividend payer given by Fama and French (2001), only profitability is relevant in explaining payout choices during the crisis. This matches our expectation that more profitable firms should have better ability to withstand any shock that may result from the crisis.

Payout Choices Post Crisis

Findings indicate strong resemblances in payout policy during the crisis and in the post-crisis period. Apart from foreign ownership, which became significant again in the post-crisis period, all other variables remain as they were during the crisis. All the predictors of alternative payout choices during the crisis remained significant in the post-crisis period under the same outcome categories. This suggests that the effect of the crisis is still felt in the post-crisis period. Our evidence indicates considerable changes in dividend policy during the crisis, as some theories only become relevant as a result of the crisis and others lose significance due to the crisis.

Plausible Explanation for Shift in Dividend Policy During the Crisis

Some studies indicate that firms tend to pay more to signal sound financial health during a financial crisis, while others state that firms reduce dividends to preserve financial flexibility. Evidence from descriptive analysis indicates the presence of a signalling motive evidenced by an increase in dividend payouts in the year 2008; however, this could not be sustained.

Our evidence indicates that the need to preserve financial flexibility prevailed above the signalling motive. Descriptive analysis indicates a sharp decline in nominal dividends at the peak of the crisis (the year 2009). Similarly, a careful look at Table 2 shows that the magnitude of change in dividend reductions during the crisis is the highest compared to the other payout choices. Dividend cuts rose by 258% between the year 2007 and year 2009. Moreover, our findings indicate that predictors of dividend payout changed during the crisis in a manner consistent with the need to preserve financial flexibility. Retained earnings to total equity, which became insignificant during the crisis, suggests that dividend omissions by firms during the crisis are not tailored towards ploughing back for investment; rather, it suggests the need to conserve funds. Similarly, the insignificance of size during the crisis suggests that bigger firms may not necessarily pay dividends either through increases or maintaining dividend levels from the pre-crisis period. This indicates that such firms may have a different motive, i.e., the need to preserve cash. Most importantly, using leverage and cash flow as indicators of financial flexibility, Bancel and Mittoo (2011) argued that firms with higher financial flexibility suffer a lower impact from the crisis. Therefore, our finding, which shows that leverage and cash flow only became relevant during the crisis, indicates the importance of financial flexibility in such periods. In addition, Miller and Rock (1985) noted that a major cost associated with signalling is the need to maintain paying high levels of dividends, which small firms cannot imitate. On the other hand, studies have shown that one of the ways in which financial flexibility can be achieved during a crisis is through dividend cuts. Therefore, signalling costs, which entail keeping dividend payments at high levels, may be difficult to maintain during a crisis as a result of the need to preserve financial flexibility. Thus, many firms might have cut down their dividends in the year 2009 due to the inability to sustain signalling costs. Therefore, we infer from our findings that changes in dividend policy during a financial crisis indicate the inability of firms to sustain signalling costs due to the need to preserve financial flexibility.

CONCLUSION

Based on a sample of 1048 firm-year observations obtained from 126 companies over 10 years (2003–2012), we investigate factors that influence a firm's dividend payout decisions over three distinct sub-samples. We investigate further whether dividend policy changed during the financial crisis and the possible explanation for the changes observed. Our evidence, which indicates a noticeable shift in dividend policy across the different sub-periods, is consistent with the notion that dividend policy changes during financial crises. We provide empirical evidence on how dividend policy changed during the crisis in a manner consistent with the need to preserve financial flexibility. Findings indicate that firms with higher leverage and lower cash flow are more likely to omit dividends during the crisis. Specifically, our findings indicate that some dividend policies become costly to maintain as a result of the crisis. Tax-induced clientele lost relevance, indicating that firms do not shape dividend policies to suit the preference of the foreign investors during the crisis. The role of dividend smoothing also weakened, and this shows that the ability of firms to maintain stable dividends decreased as a result of the crisis. However, dividend policies that help preserve firms' cash flows, as indicated in the transaction cost hypothesis, become crucial during the crisis period. Thus, firms become more concerned about maintaining adequate financial slack due to the uncertainty associated with the crisis. In addition, dividend policies that will increase firms' valuation are adopted during the crisis. This is reflected in the catering theory, which only became significant during this period.

Findings on the predictors of alternative payout decisions will serve as a guide to existing and potential investors in shaping their investment plans. Stakeholders will be aware that financial viability is an important consideration in firm payout policies during a crisis. Given such awareness, firms reducing dividend levels during a crisis may have no cause to fear negative investors' reaction, as such cuts will be generally viewed as necessary to preserve financial flexibility. The findings of the study will also be useful to policy makers in developing improved policies for managing any crisis that may occur in the future. They will also serve as a guide to regulatory authorities for future policy direction when setting rules that relate to dividend payments.

NOTES

1. In unreported results, our findings on profitability are robust to the use of ROE as its proxy. We found ROE to be consistently significant across the different sub-periods.

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