



Asymmetric Dividend Smoothing in Listed Industrial Goods Firms in Nigeria: Analysis Based on Growth Potentials

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Abstract

Literature on asymmetric dividend smoothing mostly focused on establishing the existence of the behavior within firms without accounting for firm characteristic variables that influence dividend smoothing. Given that firms that smooth dividend payment more tend to have low growth potentials and likely to be affected by severe agency conflict; therefore, asymmetric smoothing behavior is expected to vary according to growth potentials. In this regards, the study aims at examining the determinants of asymmetric dividend smoothing behavior after accounting for whether the behavior exists in firms with high/low growth potentials. The paper used data obtained from a sample of 9 out of 16 Industrial Goods firms listed on the Nigerian Stock Exchange for the period of 11 years - 2006-2016. The model of the study was estimated using Fixed Effect Model. The findings reveal that Industrial goods firms in Nigeria smooth dividend payment and have asymmetric dividend smoothing behavior. The adjustment rate is not only asymmetric below and above their Target Pay Out Ratio (TPR) but also asymmetric below TPR for both High and Low growth potentials. However, the behavior only exists above TPR when the firms have high growth potentials. The paper concludes that firms with high growth potentials have slower adjustment rates than the ones with low growth potentials when they are below their TPR.

Keywords: Target dividend payout; asymmetric dividend smoothing; growth potentials; industrial goods firms in Nigeria

1 Introduction

Dividend smoothing can be seen as paying dividends based on long run target payout ratio instead of current earnings. According to Lintner who conducted an interview with 28 managers from different companies in US identified that, the main concern of managers is the stability of dividends (19). He argued that firms instead of setting dividends periodically based on current earnings they rather first decide on whether there is need to change the dividends or not. If they consider the change to be necessary, then decide on how large the change should be. Hence, they decrease dividends when it happens to be the last option and increase dividends when they are confident that the increase can be sustained. Managers believe that investors are unhappy with dividend decrease because they use it to cater for their own needs and some managers consider it as bad signal to future retained earnings of a firm. Managers achieve stability through maintaining long run target which they adjust their dividend policy gradually toward it. Thus, two important points can be identified;

investors put premium on firms with stable dividend policy and punish those that decrease dividends.

Subsequently, Lintner findings have been upheld by studies in the both the developed and developing countries. In developing countries like Nigeria, where firms hardly adopt constant payout ratio over long period of time probably due the prevalence of economic instability and other related issues. Ozo opines that despite the fact that Nigeria has different economic environment, it has similar dividend setting process to US and other developed countries (10,19). Firms are conservative in setting their dividend policy and focused on stability of earnings, current earnings and availability of cash in determining their dividend policy. However contrary, to the developed counties, Nigerian firm do not have target payout rather they set a target dividend per share when determining the magnitude of dividend level.

Earlier, Adelegan reported that, the issue of dividend behaviour of firms was not given serious attention until the work of Uzoaga and Alozieva (4). The study and others that

followed it such as Adelegan have confirmed findings of Lintner and others that assessed the smoothness of dividend based on factors other than that of Lintner, indicate that, dividend smoothing should be an important factor in dividend policy and Lintner variables are strong in explaining the behavior (4). However, in the era of unclaimed dividend, Moreover, Kighir cautioned regulatory authorities in Nigeria on the activities of earnings management through dividend smoothing by firms and described the behaviour as potential danger to investors and government policies, if it persists in the period of increasing incidences of unclaimed dividend. Therefore, dividend smoothing has been established under Nigerian economic environment (15,19).

Furthermore, Industrial Goods firms fall among the top three sub sectors that strive to maintain stable dividend in Nigeria over the years. More often than not, this may be unconnected with the preferences of majority of shareholders in Nigeria that are described as conservative who need cash dividend and consider cash payment from dividend as means of reducing high risks associated with expected future income in the event of adverse economic conditions ("5 Years Dividend Payment Review for NSE Quoted Companies", 2016). However, due to the operating cost problem, the banning of 40 raw materials from sourcing foreign exchange, problem of poor infrastructure, the competitive ability of manufacturing firms in Nigeria has been eroded and large number of them are utilizing only about 20% of their capacity. The interesting issue is that how the firms in the sector survive the unfavorable economic environment when growth potentialities are likely to be very low; compete with the other sectors of the economy in maintaining relative cash dividend stability, despite the cash flow problems that faced them.

Even though, studies all over the world have consistently re-affirmed the robustness of Lintner model in explaining dividend smoothing, the model was considered as being bias due to the short comings of its assumptions such as; small sample bias, constant response coefficient and inability of the model to incorporate cross-sectional characteristics such as leverage, size, growth and liquidity which are considered as important factors that affect dividend smoothing (18; 2). In addition, due to country specific factors such as tax policies, economic and institutional characteristics, cross-sectional differences and the fact that Lintner study was conducted 60 years back, some studies have gone beyond the boundaries of testing validity of Lintner model in explaining dividend smoothing behaviour of firms. In this respect, Leary & Michaely and Abu-Khalaf, examined the determinant of dividend smoothing by means of more sophisticated measures that include firm median payout as Target Dividend per Share (DPS) Policy and Relative Volatility for measuring dividend smoothing in order to address the Lintner's model shortcomings as earlier noted. Leary and Michaely empirically tested firm characteristics as a function of dividend smoothing (2, 18).

Furthermore, Lambrecht and Myers, explained that there exists asymmetric adjustment smoothing behaviour among firms and this limits the desire of firms to adjust faster to their target (17). Though, Abu-khalaf studied dividend payout, propensity to pay dividend and dividend smoothing, and in addition, examined whether high/low leveraged companies,

small/large companies and high/low profitable companies have an asymmetric smoothing behaviour, his study suffered some limitations (2). One, he measured dividend level as dividend payout instead of dividend per share. It is believed that per share value of dividend is a better factor of interest when compared with dividend payout. Two, though he examined smoothing based on the two adjustment modes and accounted for some firm characteristics, the approach is still considered inadequate in the context of Nigeria because it failed to capture the effect of the Economic Recession that Nigeria experienced from 2015 to 2016. In Nigeria, availability of cash and growth potentials are important factors that could motivate dividend smoothing among firms. Despite the availability of pointers to firms' dividend smoothing, previous studies have been completely silent about it. The implication is that the studies were not able to present a complete picture of dividend smoothing of listed firms in the country.

In view of the fact that dividend stability is of greatest importance to the overall success of firms and the fact that new emerging country specifics are pointing to the need for further studies in the area, it is imperative to undertake a study that will consider some of these factors as they relate to the industrial goods firms sector. This study therefore, is motivated by the need to provide new evidence on the possible factors that determine dividend smoothing of listed industrial goods firms in Nigeria? Specifically the study seeks to offer answer to the following question; Do firms with lowly growth potentials adjust their dividend slower than the highly growth potential ones in listed non-financial firms in Nigeria?

2 Literature review

On the empirical studies in the field of dividend smoothing, the researchers mostly started by highlighting the theoretical foundation that underlies the debate employing several approaches. Early researches to a great extent adopted field investigation by studying the opinion of some corporate managers in getting insight on what influenced the dividend policy decision of their firms. Studies in the direction include Lintner, Pruitt and Gitman (19, 21). Among the ones that followed survey approach, Lintner further set up the theoretical models and used statistical tests in order to provide reliable estimates that could explain the pattern of corporate dividend smoothing behaviour and policy. These studies found that managers have divergent view on the factors that explain dividend changes (19).

Moreover, Lintner variables which include, current earnings and previous dividend have been found predominantly important over past decades. Though, some researchers have emphasized on the explanatory power of factors such as cash flows (7, 16) and cross-sectional characteristics using more robust smoothing measure (18 & 2011 & 2), in explaining dividend smoothing, current researches are still confirming the appropriateness of Lintner variables either using static models given specific nature of their economic policies, employing more robust techniques and dynamic models that control both firm and temporal effect in their estimations (3, 11). Other also employed the Lintner model and used control variables (6). In assessment of the determinants smoothness of dividend mostly three models were employed; the Lintner partial adjustment model and

Modified Lintner model by Brittain (1964) based on symmetric adjustment and Dividend Deviation model based on asymmetric adjustment (19).

2.1 Lintner (1956) Partial Adjustment Model

The mathematical first model to be considered in this study is Lintner partial-adjustment model of dividend. He conducted interviews of corporate managers of US firms and enquired about their dividend decisions (19). The series of the questions asked were: firstly, whether their firms were primarily concerned with dividend stability; secondly, whether earnings were considered as the most critical factor that determines dividend stability; thirdly, whether financial decisions were taken in pursuance of dividend policy. The conduct of this interview revealed the following findings; managers determine their dividend policies based on a long-run target payout ratio, the likelihood of paying and stabilizing dividend is highly present with matured firms with stable earnings than growing firms. This indicates that dividend changes are important to managers than dividend level and firms smooth their dividend to follow shift in the long-run sustainable earnings. He finally concluded that, managers are reluctant to cut dividends because they believe that shareholders prefer stable dividends as such any cut in dividend may send bad signals about the future prospect of the firm. Therefore, Lintner model assumes that changes in dividend are gradually moving toward achieving target payout not immediately to changes in earnings.

Under this assumption of target payout, the partial-adjustment model was developed to examine the smoothing process in dividend policy. Thus, the target dividend Payments are a proportion of the firms earning per share. Mathematically,

$$DIV^*_{it} = p_i CE_{it} \quad (1)$$

Where; DIV^*_{it} is the expected dividend payment for firm i in period t , p_i is the target payout ratio; CE_{it} is the current earnings after tax for firm i in period t

Knowing that $DIV^*_{it} = p_i CE_{it}$, the model suggests that a firm will only gradually adjust to the target dividend payment in any given year, therefore change in dividend payment from previous year ($t-1$) to current year (t) are explained by the partial adjustment as thus:

$$DIV_{it} - DIV_{i(t-1)} = \tilde{\alpha}_1 + y_i (DIV^*_{it} - DIV_{i(t-1)}) + \varepsilon_{it} \quad (2)$$

Where: $\tilde{\alpha}_1$ is the constant term, y_i is the speed of adjustment coefficient, DIV^*_{it} is the dividend which the company would have paid in the current year if its dividend were based simply on its fixed target pay-out ratio p_i applied to current earnings, DIV_{it} the actual dividend payment for firm i in year t and $DIV_{i(t-1)}$ is the actual dividend payments for firm i in year $t-1$. Thus, the model predicts that a dividend change is a function of the target payout less the previous period dividend payout multiplied by the speed of adjustment factor. From equation (1) and (2) by substituting $p_i CE_{it}$ for target dividend payment DIV^*_{it} in Equation (2), Lintner drives dividend smoothing model as follows:

$$\Delta DIV_{it} = \tilde{\alpha}_{1t} + \tilde{\alpha}_1 CE_{it} + \tilde{\alpha}_2 DIV_{i(t-1)} + \varepsilon_{it} \quad (3)$$

Where: ΔDIV_{it} is the Expected change in dividend payment, $\tilde{\alpha}_{1t}$ is the constant term and is expected to be zero for some companies but will generally be positive to reflect the greater reluctance to increase than to decrease dividend, $\tilde{\alpha}_1$ is equal to $y_i p_i$ and y_i is the speed of adjustment coefficient (That is speed of movement of current dividend to target payout ratio and is $0 < y_i < 1$. therefore the closer the value to zero the higher the smoothing behaviour and vice versa), p_i is the target payout ratio and $\tilde{\alpha}_2$ is $(1 - y_i)$. CE is the current earning for firm i in period t , $DIV_{i(t-1)}$ is the previous year's dividend and ε is the error term. Result of the empirical analysis revealed that there is significant positive relationship earnings, previous dividend and dividend changes. The study document Speed of Adjustment (SOA) of 0.25 and Target Payout Ratio (TPR) of 0.6.

Lintner model performed well in explaining dividend changes of the sample companies. Nonetheless, it suffers from shortcomings such as; the study was conducted over sixty years ago, covers only 28 firms and can only be applied on cash dividend payments firms only (18). In addition, it is based on the assumptions of symmetric movement and only previous dividend and current earnings determine dividend changes, constant response coefficient which suggests that investors' reactions to the explanatory of all firms are identical, which was criticized by (18; 2, 11) as being affected by the dynamic firm-specific, industry specific and economic factors.

2.2 Modified Lintner/Brittain (1964) Model

Ample studies have tested the modified version of Lintner model or after extending it using US and other countries data around the world. Brittain (1964) modified and tested the Lintner model by deflating the variables using total number of ordinary shares outstanding rather than using aggregate data in US. The empirical result revealed SOA of 0.23 and TPR of 0.66 and confirms the findings of Lintner at lower level of SOA. Observation has shown that most of the researchers that tested Lintner model employed Lintner/Brittain model, notably, Al-najjar, Al-Yahyee, Pham & Walter, Jeong, Omar & Rizuan and Sibanda (7, 9, 14, 20, 22)

The findings corroborated the study of Al-Najjar, and Jeong in recent time. Among the variables introduced in the various modifications of the model include; capital structure variables, liquidity measures, firms growth variables and cash flows (7, 14).

Rather than extending the model, several other researchers used advanced methodology to capture the dynamic nature of dividend behaviour in specific term. The result of the two-way fixed and time effect model employed in the study revealed that both the current earnings and previous dividend have positive significant relationship with dividend changes. It also revealed a SOA of 0.5 and above across sectors and low TPR of zero and 0.17 in Industrial goods and Consumer goods companies respectively. This signifies that there is a significant difference in dividend policies across individual firms over time. His findings are consistent with Abubakar, who also used Least Square Dummy variable model in examining the dividend smoothing behaviour among listed manufacturing firms in Nigeria for the period of 2000 to 2009

(3). He found that manufacturing firm in Nigeria adopt unstable dividend policy.

The Lintner model was developed in the US where dividends are taxed higher than capital gains, a system that motivates smoothing. This may cast doubt on its valid application on economies where their tax policies are different from that of US. For instance like Oman where there is no tax on dividend, firms are highly levered, high concentration of stock ownership and variability in cash dividend payment. Al-Yahye, Pham & Walter examined whether Oman financial firms smooth their dividend and have target payout ratio using Lintner model (9). Panel Tobit regression model was estimated using 377 firm-year observations obtained from both dividend-paying and non-dividend-paying firms covering the period of 16 years 1989 to 2004. They found a positive significant relationship between dividend per share and previous year's dividend per share and earnings per share. The analysis returns a value of 0.94 and 0.56 for SOA and TPR respectively. Though, study attempted to contribute to the existing literature by accounting for censoring problem associated with zero dividends and covered larger period which is good to the study of dividend behaviour. However, the effort has failed because dividend smoothing is assessed on firms with dividend record not on both paying and non-paying firms as in the case of other dividend policy studies.

Some other researchers have confirmed the findings of Lintner partial adjustment model in recent time (19). According to Omar & Rizuan Malaysian firms follow the same determinant of dividend smoothing and stability as suggested by Lintner (20). The empirical model was estimated using ordinary least square. The study covered the period of 15 years in examining 319 firms listed on Bursa Malaysia. Only companies with history of nine years cash dividend payment were used. The results revealed that firms in Malaysia were involved in smoothing activities. The study also provided evidence that the firms had target payout and they adjusted to their target ratios with SOA of 0.447 and TPR of 0.64. Despite the fact that the study confirmed the validity of Lintner model in recent time, it suffers the following shortcoming; failure to measure dividend smoothing using dividend changes as suggested by the large number of previous and current studies such as Lintner and Sibanda (19, 22)

Similarly, Sibanda also tested the model and found that firms in South Africa smooth their dividend in line with Lintner argument (22). The result of the analysis revealed that firms smooth their dividend by means of speed of adjustment coefficient. The study returns a value of 0.73 and 0.41 for SOA and TPR respectively. The study also suffers limitation similar to Omar & Rizuan, in that it has avoided the problem of short period and captured dividend smoothing as change in dividend per share (20).

2.3 Modified Lintner/Brittain (1964) Model with Cash flow Variables

Arguing from the angle of the free cash theory introduced by Jensen who posits that the presence of excess cash in the possession of managers provide them an opportunity to use the fund to feather their own nest (13). It also argued that the free cash flow provide managers with the incentive to make investment in less profitable ventures, thereby increasing

agency problems (13, 14). On this premise, they proposed the use of debt as the substitute mechanisms for controlling the problem.

Furthermore, given emphasis on the current development on cash flows, researchers have questioned that earnings provide superior information in explaining dividend smoothing over cash flows. On this grounds, the trends of researches such as Al-Najjar & Belghitar and Kighir, Omar and Mohamed in recent times has shifted from emphasizing on strong link between current earnings and dividend smoothing to the superiority of cash flows over earnings (7,16). In attempt to capture this effect, studies mostly follow two approaches; by modifying Lintner model to include cash flow variables instead of earnings measure or segregating the earnings into two: cash flow and accrual components. In this regard, Al-Najjar & Belghitar examined the superiority of cash flows over earnings in explaining dividend smoothing by exchanging earning measures with cash flows variables- free and operating cash flows (7). The proposed Al-Najjar and Belghitar modified partial adjustment model based on cash flows was developed using Generalized Least squared model (GLS) and Generalized Method of Moments (GMM) in order to control un-observed firm-specific effect for the potential relationship of both the previous year's dividend and cash flows or earnings in case of Lintner model. In consistence with most previous literature, the study excludes financial firms in the analysis but extended by including zero dividend. 432 firm-year observations were used covering the period of seventeen (17) years, 1991 to 2007. The study found that, United Kindom (UK) firms smooth both the operation and free cash flows as source for smoothing dividend and that original version of Lintner partial adjustment is not working in UK, given the lower result of SOA in relation to new version of Lintner's Model. The study has performed remarkably by confirming the superiority of cash flows over earnings and also mitigates the shortcoming of other researches by controlling firm-effect and capturing both paying and non-paying firms. However, it fails to account for asymmetric nature of dividend smoothing and the effect of firm characteristic on the smoothness of dividend. Contrary, Kighir et al. also contributed to the debate using data from non-financial firms quoted on Bursa Stock Exchange in Malaysia and found that non-financial firms in Malaysia consider current earnings and proceeding years cash flow more important than current cash flow and previous year's profit is establishing their dividend payout decisions (16).

In Nigeria, earliest studies mostly focus on dividend behaviour without establishing whether paying firms smooth dividend and used Lintner variables in the studies. Even the dividend behaviour studies, Adelegan affirm that the earliest attempt was conducted during the Indigenization period by Uzoaga & Aloizeuwa who analyzed the dividend payment pattern of sample of 13 companies for the period of 1969 to 1972. They found that there is not enough evidence to prove the validity of traditional variables using Nigerian data and concluded that the best predictors for dividend behaviour are fear and resentment. The findings was later challenged by large number of studies such as Inanga who asserted that both the Lintner variables and non-conventional factor such as excess cash obtained from issue of new capital and share pricing policy of the Capital Issue Commission are the major drivers

of dividend payment pattern (4).

The few identified that assessed dividend smoothing use robust technique that could capture firm effect to investigate whether smoothing behaviour exists in Nigeria, Abubakar studied the sample of listed non-financial firms in Nigeria using fixed and temporal effect model which captures what was neglected by the previous researches (3). It is worthy of note that, Abubakar only examined smoothing based on symmetric assumption, which assumes firms movement from current dividend payment to the target symmetrical (3). That is there is no difference between speed of adjustment when firm is above or below its target. Thus, the study is deficient by its inability to account for asymmetric adjustment as established in the literature (17). Similarly, Kighir assessed the smoothness of non-financial firms in Nigeria during the era of unclaimed dividend and found that the firms use dividend smoothing to manage their reported earnings (15).

2.4 Dividend Deviation Model

In another development, other researchers are of the view that the argument that firms set a long-run target payout and move toward it does not hold water nowadays based on Lintner SOA assumptions, since the advancement in the nature of business activities, conflicted economics situations and policies are not as the way they were in the sixties. In this regard, they proposed factors such as cross-sectional characteristics, and asymmetric adjustments as the most important variables that derive dividend smoothing. Under this argument smoothing is also assessed based on the SOA and TPR but the method differs. Here, TPR is either firm /industry average or firm/industry median dividend payout. And the speed of adjustment is the coefficient of dividend deviation variables when it is regressed against dividend changes. The dividend deviation variable is calculated by subtracting the respective year's dividend from TPR.

According to Leary & Michael traditional variables for testing smoothing are biased and are not the best measures for explaining firm cross-sectional differences in dividend policy (18). They estimated dividend smoothing using more sophisticated SOA measures that include Relative Volatility and Target Dividend Per share (TDPS) Policy as against the traditional Lintner's SOA factor. Firm cross-sectional characteristic were employed in predicting the behaviour of the dependent variables; dividend changes. These measures were suggested based on the argument that dividend target today is different from what Lintner understands and in recent time managers are more concerned about Target DPS than Target POR. The result revealed that firms with more tangible assets, lower price volatility, lower earnings volatility, institutional investors, higher payout ratio and large size tend to smooth more. This result is consistent with Agency consideration that lower growth firm, firm with free cash flow and better corporate governance tend to smooth dividend more.

Furthermore, other researchers extended by testing the smoothing behaviour in both negative and positive earnings on the assumption that the adjustment towards target differs in the two conditions differs or is asymmetric. Hence, firms with positive earnings and having dividend lower than its target are expected to move faster to the target compared with those with negative earnings. In this regard, Zurigat & Gharaibeh

investigated the smoothing behaviour of Jordanian firms using data obtained from sample of 38 listed non-financial firms in Amman Stock Exchange covering the period of 1998 to 2009 (23). The study employed Fixed effect panel regression and used Lintner model after segregating the data into positive and negative earnings firms in order to ascertain whether dividend adjustment below and above target is present in the two different conditions and firms with less than six years dividend payments were excluded from the study. The empirical results indicate that Jordanian firms have target dividend payout with low rate of adjustment below 0.5 and it is asymmetrical adjustment process depending on whether they are above or below target with both positive and negative earnings. Though the study attempted to assess dividend smoothing in both positive and negative earning and captured firm's specific effect that has not been considered by most researches, it fails to account for the inherent, asymmetric adjustment when firms is at different levels of firm characteristics and small period against the tradition of dividend payment studies without justification.

Similarly, Abu-Khalaf examined the smoothness of dividend of listed non-financial firms in Jordan covering the period of 1997 to 2006 using random effect model (2). He extended the prior researches by examining both symmetric and asymmetric adjustments toward the target payout in context, three cross-sectional characteristics; profitability, leverage and size were used in order to ascertain whether firms in Jordan differ in movement toward the target if they are below or above their target payout and the differences in the movements in large/small size, high/low leverage and high/low profit companies. The study revealed that firms in Jordan adjust toward target moderately and the process is asymmetrical instead of symmetrical; they move at different rate when below or above target and the asymmetric movement is influenced by the firms characteristics; size, leverage and profitability. In line with signaling theory in the case of profitability but contradict the theory in the context of size and supports agency cost theory in respect of leverage.

Based on this background, therefore, an analysis of the dividend smoothing based on asymmetric adjustment and growth potentials was conducted in order to ascertain where dividend smoothing behaviour in listed industrial goods is asymmetric whether firm with high growth potential smooth dividend slower than those with low growth potentials. Thus the following hypotheses are proposed:

H0₁ Dividend smoothing in listed industrial goods firms in Nigeria is symmetric

H0₂ Firms with high growth potentials with below target dividend smooth their dividend payment faster than the ones with low growth potentials in listed industrial goods firms in Nigeria.

H0₃ Firms with high growth potentials with above target dividend smooth their dividend payment slower than the ones with low growth potentials in listed industrial goods firms in Nigeria.

2.5 Theoretical framework

This study was anchored on signaling theory. The theory was chosen predicated from the view that dividend is a signaling device for investors regarding firm's prospect (19).

The theory is based on the idea of information asymmetry between owners and managers, which assumes that managers possess higher knowledge than investors about the firm's prospect. Managers use dividend as a signaling device to convey their performance to investors thereby aligning their knowledge with that of investors. The fact that higher dividends translate into higher stock price and consequently increase in firm value is the idea behind the use of dividend as a signaling mechanism. Since smoothing is a movement to a target payout, it can be either upward when firms are below their target or downward when they are above. The fact that increases in dividend signals good news and increases represent bad news to investors the firms are expected to move slower above than when they are below target (2). Therefore, the level of information asymmetry determines the smoothness of dividend which suggests that the firms with more severe information asymmetries are likely to smooth more (20-23). Furthermore, dividend smoothing behaviour is more prevalent in a firm with high growth potentials because they have severe information asymmetry. This indicates that firms with high investment opportunities and very little tangible assets smooth more and it reduces over time in accordance with information revealed to the market increases (18).

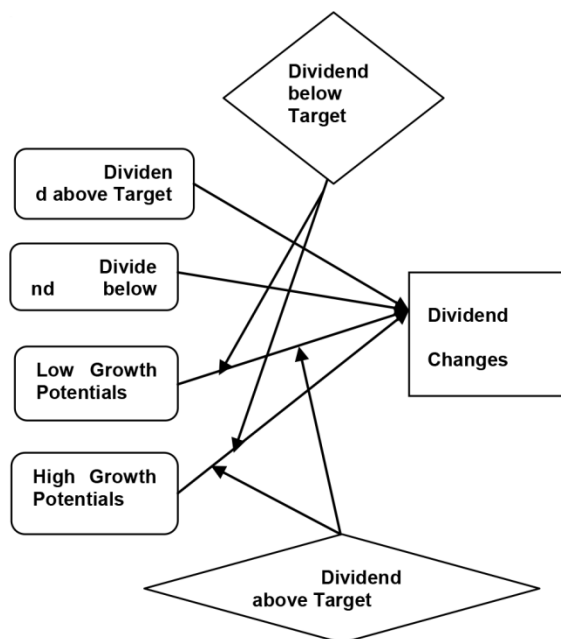


Figure 1: Interaction of below and above target dividend between low and high growth potentials and dividend changes.

3 Methodology / Materials

The study employed correlational research design. The design was adopted predicated to the objectives of the study which is to examine the factors that determine dividend smoothing patterns of firms. The population of this study consists of all sixteen (15, 16) listed Industrial Goods firms in Nigeria as at 31 December, 2016. Seven (7, 8) firms were excluded from the population as a result of not having five (4, 5) years dividend payment history. This is because dividend

smoothing behaviour can only be examined in dividend paying firms and to minimize the likelihood of spurious result (2, 8). Therefore, the adjusted population is nine (9) firms and these firms includes, Ashaka, Avon Crown Caps & Containers Plc, Berger Paints Plc, Beta Glass Co. Plc, Chemical and Allied Product Plc, Cement company of Nigeria Plc, Cutix Plc, Greif Nigeria Plc, and Lafarge Africa Plc. The study used secondary data because the variables under investigation can be best measured using data in the form of financial information available in the selected firms' financial reports. The sources of the data therefore are the annual reports and accounts of the selected firms for the period covered by the study - 2007 to 2016.

Multiple regression technique was employed in modeling the relationship that exists between the dependent and independent variables of the study. In checking the smoothness of dividend payment, Panel data analysis technique was employed through the use of Fixed and Random effect models in estimating the coefficients of the model employed for the study. The technique was chosen because it produces more informative data, less collinearity among variables, more variability, more efficiency and more degree of freedom (11, 12). Due to nature of the measure chosen for measuring dependent variable of dividend smoothing models; dividend changes, which is the change between current year's and the previous year's dividend, some negative figures were obtained whenever the previous dividend is higher than the current one, as such the use of Tobit will be biased since the technique is meant for analyzing restricted variables model. Having any value below zero the restriction cannot be obtained and the values will now be continuous to both left and right of zero. Therefore, this suggests the use of FE and RE models. Hausman specification test is used for testing the FE against RE model estimates under the null hypothesis that the coefficient estimated by the consistent FE estimator are same as the ones estimated by the consistent RE. The significant Hausman test leads to the rejection of the null hypothesis in all our three estimated models, suggesting that FE estimates are the most appropriate estimator in the relation to RE estimates.

3.1 Models specification and variables measurement

The study employed both symmetric and asymmetric Partial adjustment models for testing smoothing behaviour. In addition, Target DPS was used to estimate firm median DPS and it was used to investigate the impact of the high/low growth potentials using both symmetric and asymmetric partial adjustment toward the long run target.

3.2 Symmetric Adjustment Model

Symmetric adjustments model assumes a symmetric speed of adjustment for dividends above and below the long run target ratio. This implies that the costs and benefits associated with adjustment below and above target are equal (2). In line with him, the model was estimated in order to determine whether actual lag dividend deviates from the long run target payout. In achieving this dividend deviation variable (D_{devit}) was calculated by taking the difference between target payout ratio (TPR) of the current year and actual lag dividend payments. The target payout ratio was calculated by multiplying the target ratio (TR) with the current earnings (CE)

that is TPR is equal to TPPE. The median of the firm payout ratio was used as against the industry or firm mean because its use is associated with the problems of outliers.

For estimating dividend smoothing using firm's median payout ratio as Target Dividend Per share, the model is presented in equation 1:

$$\Delta DPS_{it} = \alpha_0 + \alpha_1 \bar{D}_{pevit} + \varepsilon_{it} \quad \text{----- I}$$

Where ΔDPS_{it} change in dividend payment ($DPS_{it} - DPS_{it-1}$), $\bar{D}_{pevit}$ = dividend deviation, α_1 = the adjustment coefficient which captures the adjustment in dividend changes to the target dividend payout ratio, ε_{it} error term. The adjustment coefficient is assumed to lie between $0 < \alpha_1 \leq 1$, indicating that firms have target ratio and they do not instantly adjust their dividend payment ratio to the TPR. If $\alpha_1 = 1$, indicates no absence of adjustment cost and then instant shift towards the target occurred, implying no dividend smoothing exist. On the other hand if $\alpha_1 = 0$, implies that no movement towards the target exist, since the actual adjustment at a time t is equal to the observed in the previous time period and then dividend payment is completely stable. $\alpha_1 > 1$ indicates abnormal adjustment take place and the target has not been attained. Therefore if the coefficient is found to be significant, it indicates that the selected firms have TPR and gradually move to the target overtime when paying dividend.

3.3 Asymmetric Adjustment Model

Given the controversies in the literature that there is difference in cost of adjustment between firms that are below and above the target or otherwise, this study further adopted asymmetric model from the studies of Leary and Michaely and Abu-Khalaf, in order to prosper a solution to the controversies (2, 18). This test is important especially when dividend payment differs significantly in a situation where firms are below or above the target, that is, if firms are above the target they tend to adjust downwards and accordingly, if they are below the target, they adopt upward adjustment. In such a case, Managers of a value a maximizing firms adopt a dividend policy that always maximizes their share value (19). Hence, the managers of these firms achieve this by smoothing the actual dividend payments toward a target level.

When dividend deviation is less than zero ($\bar{D}_{pevit} < 0$) it implies that the company is above its target payout ratio, while it's below the target if $\bar{D}_{pevit} > 0$. Therefore, to examine whether adjustment rate differs across firm that are below or above their target level, the following models are used by splitting the values of $\bar{D}_{pevit}$ into two new variables:

$\bar{D}_{pevit}^{above} = \bar{D}_{pevit}$ if $TPRE_{it} - DPS_{it-1} < 0$ and zero otherwise

$\bar{D}_{pevit}^{below} = \bar{D}_{pevit}$ if $TPRE_{it} - DPS_{it-1} \geq 0$ and zero otherwise

When the variables $\bar{D}_{pevit}^{above}$ and $\bar{D}_{pevit}^{below}$ are substituted in place of $\bar{D}_{pevit}$ in model (I) above, model (II) will be presented as thus:

$$\Delta Div_{it} = \gamma_0 + \gamma_1 \bar{D}_{pevit}^{above} + \gamma_2 \bar{D}_{pevit}^{below} + \varepsilon_{it} \quad \text{----- II}$$

where $\bar{D}_{pevit}^{above}$ and $\bar{D}_{pevit}^{below}$ represents dividends payment that are above and below long run target ratio respectively. γ_1 and γ_2 are the adjustment coefficients to be estimated. We hypothesize that the two adjustment coefficients must be significant, greater than zero ($\gamma_1 > 0$, $\gamma_2 > 0$) and not equal ($\gamma_1 \neq \gamma_2$). Furthermore, in line with Abu-Khalaf, the work argues that if the cost of decreasing dividend is higher than that of increasing it, then the coefficient of $\bar{D}_{pevit}^{above}$ is greater than that of $\bar{D}_{pevit}^{below}$ $\gamma_1 > \gamma_2$. Hence, the speed of adjustment for increasing dividend below the target will be faster than that for decreasing when firms are above their target (2).

In line with signaling hypothesis, it also expects the rate of adjustment to differ when firms are above and below the target and the smoothing behaviour should also to be affected by high/low growth potentials. This is because firms with high growth potentials tend to have high investment opportunities and low free cash and the reverse is the case with those with low growth potentials. Lintner argues that earnings influences dividend smoothing and firms mostly smooth their dividend in relation to changes in their earnings (cash flows) (19).

Therefore, adjustment below or above the target dividends differs in firms with high or low growth potentials. Hence, two new variables $Hgwth$ for high growth potentials and $Lgwth$ for low growth potentials were introduced as interaction variable in the model. Based on the above variables introduced in the model, the new model is presented as thus:

$$\Delta DPS_{it} = \beta_0 + \beta_1 \bar{D}_{pevit}^{above} + \beta_2 \bar{D}_{pevit}^{below} + \beta_3 Lgwth_{it} + \beta_4 Hgwth_{it} + \beta_5 Lgwth_{it} * \bar{D}_{pevit}^{above} + \beta_6 Hgwth_{it} * \bar{D}_{pevit}^{above} + \beta_7 Lgwth_{it} * \bar{D}_{pevit}^{below} + \beta_8 Hgwth_{it} * \bar{D}_{pevit}^{above} + \beta_9 \quad \text{----- (III)}$$

where $Lgwth_{it}$, $Hgwth_{it}$, are low growth potentials and high growth potentials respectively. $\bar{D}_{pevit}^{above}$ and $\bar{D}_{pevit}^{below}$ represents dividends payments that are above and below long run target ratio respectively. $\bar{D}_{pevit}^{above} (Lgwth_{it} + Hgwth_{it})$ is the interaction between dividend deviation above the target and low/high free growth potentials. $\bar{D}_{pevit}^{below} (Lgwth_{it} + Lgwth_{it})$ is the interaction between dividend deviation below the target and the low/high growth potentials for firm i in year t . If the coefficients; β_5 , β_6 , β_7 , and β_8 , are significant then dividend smoothing exists and they should not be jointly equal to zero for asymmetric adjustment to exist. β_9 Error is the term.

3.4 Variables measurement

Having specified the model of the study, the variables employed for the study, their measurements are presented in the Table 1:

4 Analysis of results

The results obtained from the descriptive and inferential statistics are presented in this section. It started from the empirical distribution of the variables and then determines the existence and direction of relationship between the variables of the study.

4.1 Descriptive statistics

From table 2, it can be seen that the rate of changes in dividend payment over number of ordinary shares has increased by an average rate of 38 kobo per share while dividend deviation below target and deviation above target have average of about 0.42, 0.55 and , -0.14, respectively. These imply that dividend deviation with about 42 kobo per share average is far above average changes in dividend per share. This suggests that magnitude of dividend changes does not change at the same rate with dividend deviation and also a

clear indication that the selected firms may likely smooth dividend in line with Linter's findings. Dividend deviation below target returns an average value of 0.55; indicating that average changes from actual lag dividend to target pershare when the firms are below the target is an increase by average by about 55kobo per share. A mean value of -0.13 for deviation above implies that dividend deviation above target per share has recorded a decrease on average by 13 kobo per share within the period of the study.

Table 1: specified the model of the study

Variables	Acronym	Measurement	Source
Dividend smoothing measured by dividend changes	ΔDiv	Current Dividend per share minus lagged Dividend per share	Driver et al, Al-Najjar and Klinkarslan (8,11)
Dividend Deviation	D_{pev}	Target Dividend payout less lagged Actual Dividend payout Ratio	Abu-khalaf and Zurigatand Gharaibeh (2,23)
Dividend Deviation above the Target	$D_{pev_{it}^{above}}$	A firm is above the target if actual payout is higher than target payout. That is D_{pev} less than zero	Abu-khalaf , Zurigat and Gharaibeh, Leary and Michaely (2,18,23)
Dividend Deviation below the Target	$D_{pev_{it}^{below}}$	A firm is below the target if actual payout is lower than target payout. That is D_{pev} is greater than zero.	Abukhalaf, Zurigat and Gharaibeh, Leary and Michaely (2,18,23)
Target Dividend per share	TDPS	Median of firm's dividend paid over number of ordinary shares.	Abu-khalaf and Zurigat and Gharaibeh, Leary and Michaely (2,18,23)
Growth potentials	Gwth	Market to book value of equity	Abu-Khalaf Xian, (2)
Low growth potentials	Lgwth	A dummy variable; 1 for firms that have growth potentials lower than the median and zero otherwise multiply by growth potential value	Abu-Khalaf (2)
High growth potentials	Hgwth	A dummy variable; 1 for firms that have growth potentials higher than the median and zero otherwise multiply by growth potential value	Abu-Khalaf (2).

Table 2: Descriptive statistics

Variables	Obs.	Mean	Std. Dev	Min	Max
ΔDPS	98	0.0379	0.6214	-2.6062	2.3277
D_{pev}	88	0.4157	1.1442	-1.9293	4.8761
Gwth	89	3.7480	5.0082	0.1528	24.1346
$D_{pev_{it}^{below}}$	88	0.5537	1.0181	0	4.8761
$D_{pev_{it}^{above}}$	88	-0.1379	0.3441	-1.9293	0
Lgwthf	89	0.9723	1.0856	0	10.0235
Hgwthf	89	2.7756	0.1178	0	24.1346

Source: STATA output (2019)

Table 3: Correlation Matrix

	ΔDPS	D_{pev}	GWTH	$D_{pev_{it}^{above}}$	$D_{pev_{it}^{below}}$	Lgwth	Hgwth
ΔDPS	1.0000						
D_{pev}	0.3407	1.0000					
GWTH	-0.0857	0.5249	1.0000				
$D_{pev_{it}^{below}}$	0.1975	0.9559	0.5849	1.0000			
$D_{pev_{it}^{above}}$	0.5483	0.4982	0.0159	0.2217	1.0000		
Lgwth	0.2115	0.4190	0.1582	0.4471	0.0711	1.0000	
Hgwth	-0.1704	0.3430	0.9150	0.3903	-0.0135	-0.2538	1.0000

Source: STATA output (2019)

It also shows that the selected firms on average are slightly decreasing their dividend from actual lag dividend payment to target whenever they are above target per share. The presence of average increase above and average decrease below target is an indication that the selected firms are likely to have asymmetric smoothing behavior. Furthermore, the result shows that the average value of growth potentials is 3.75. This

indicates that the total value of market to book value of equity is about ₦3.75 in the sub-sector over the period of the study. The result also shows that the average value of low growth potentials and high growth potentials are 0.97 and 2.78 respectively. This indicates that on the average the selected firms have 97 kobo and 2.78 kobo market to book value of equity for low and high market to book value of equity

respectively. Deviation above has the lowest standard deviation of 0.34 while high growth potentials have the highest value of 5.11. This implies that observations for high growth potentials have widely dispersed away from their mean value in relation to other variables and a variable with observations not far away from the average value is dividend deviation above target payout.

4.2 Correlation matrix result

From Table 3 it can be seen that there is positive relationship between dividend changes, dividend deviation, deviation below, deviation above and low growth potentials. While the relationship between the dividend changes, growth potentials and high growth potentials are negative. On the relationship among the independent variables themselves, the correlations that calls for concern is 0.96 which is between deviation and deviation above and 0.95 between growth potentials and high growth potentials. Though, this implies that there is tendency of harmful multi-collinearity among the variables but since the variables are extractions from each other the condition is inevitable.

4.3 Result for symmetric partial adjustment model (model I)

In order to determine the best estimates of the symmetric partial adjustment model for the listed Industrial Goods firms in Nigeria both FE and RE models were estimated. The diagnostic test between FE and RE model estimates shows that Hausman specification has a chi2 of 24.40 and a probability value of 0.0000. This provides evidence for rejecting the hypothesis that the coefficients estimated by the efficient RE estimator are the same as the ones estimated by the efficient FE model estimator. This suggests that the best specification

is FE model and the summary of the result is presented in table 4. The result in the table shows that the Wald Chi2 is statistics is 35.42 with p-value of 0.0000 implying that the model is fitted. The adjustment coefficient of common intercept exhibits a value -0.2104 and a p-value of 0.002. This indicates that constant term is negative significant at 1% level. In consistent with Al-Malkawi, Bhatti and Magableh the finding implies low reluctant to cut dividend and that if a given firm decides to reduce dividend, the action will negatively affect its reputation in the market (6). On the other hand, this finding contradicts Lintner and Abu-Khalaf who posit that the constant term will usually be positive to show greater reluctance to decrease than to increase (2,19). The results further shows that dividend deviation variable $D_{pev_{it}}$ returns a coefficient of 0.5035 with a p-value of 0.000 suggesting that the adjustment coefficient is statistically significant at 1% level and that listed Industrial Goods firms in Nigeria have target dividend payout and adjust gradually toward the target rate. Also their speed of adjustment rate is 50% which is equal to 50% (that is the rate that signifies average rate of adjustment) higher than the ones obtained by studies such as 25% in Oman by Al-Malkawi et al and 45% in Malaysia by Omar and Rizwan (6, 20). In Nigeria, Abubakar found SOA of 235% after covering the period of 2000-2009. This shows that the SOA has drastically reduced from 235% to 50% indicating that now Nigerian firms have transformed from unstable dividend behaviour to excessive dividend smoothing as compared to about 8 years ago (3).

4.4 Result for Asymmetric Partial adjustment Model

Given that dividend adjustment assumes firms are reluctant to cut dividend indicates that the adjustment can take the form of asymmetric not symmetric.

Table 4: Result of the Symmetric Partial Adjustments Model (model I)

	Coefficients	t-value
Common intercept	-0.2104*** (0.002)	-3.20
D_{pev}	0.5035*** (0.000)	5.95
R²	31.23%	
Wald Chi2.	35.42	
P-value	0.0000	
Hausman Test (chi2 value)	24.40	
P-value	0.0000	

Note ***, **, * represents values are significant at 1%, 5%, and 10% level

Source: STATA output (2019)

Table 5: Result of the Asymmetric Partial Adjustments Model (model II)

	Coefficients	t-value
Common intercept	-0.0231 (0.789)	-0.27
$D_{pev_{it}^{below}}$	0.2823** (0.010)	2.64
$D_{pev_{it}^{above}}$	0.9736*** (0.000)	5.72
R²	39.01%	
Wald Chi2	24.62	
P-value	0.0000	
Hausman Test (chi2 value)	11.82	
P-value	0.0027	

Note ***, **, * represents values are significant at 1%, 5%, and 10% level

Source: STATA output (2018)

In this regard, the asymmetric adjustment is analyzed in this section in order to determine if adjustment rate above is different from that of below target payout. Also, the best specification of the model is FE model due the significant of the Hausman specification test suggesting the rejection of the hypothesis that says RE is the most appropriate model. Therefore, FE robust model was estimated in order to take care of the problem. The summary of result of the robust FE model is presented in Table 5. It can be seen from Table 5 that model is fitted due the value of Wald Chi2 of 24.62 and p-value of 0.000. It can also be seen that the adjustment coefficient is asymmetric for movement below and above target payout. This is determined after estimating adjustments coefficients γ_1 and γ_2 for deviation below and deviation above target respectively are estimated and the hypothesis which proposes that the two coefficients are jointly equal to zero and are equal (that is $\gamma_1=0, \gamma_2=0$, and $\gamma_1=\gamma_2$) was tested. The result of the test shows F-stat value of 24.62 and P-value of 0.000 and F-stat value of 9.81 and P-value of 0.0025 for the $\gamma_1=\gamma_2=0$, and $\gamma_1=\gamma_2$ test respectively. Implying that adjustments coefficients γ_1 and γ_2 for deviation below and deviation above target have satisfied the conditions for testing dividend smoothing. Thus the two hypotheses are rejected at 1% level. Meaning that dividend smoothing behaviour is symmetric in listed Industrial Goods firms in Nigeria. The result reveals value of 0.2823 and 0.9736 which are statistically significant at 1% and 5% for γ_1 and γ_2 respectively. Evidence from the result the two adjustment coefficients are positively and statistically significant justify the rejection of the first hypothesis (H_{01}) which says dividend smoothing behaviour in listed industrial goods in Nigeria is symmetric. Therefore, the smoothing behaviour is asymmetric.

This result suggests that the dividend smoothing in listed Industrial Goods firms is asymmetric instead of symmetric. Also, the adjustment rate for above the target 97% is higher

than that of below the target 28%. The rate of adjustment for dividend below the target than that of above is an indication that the selected firms are more reluctant to increase rather than reducing dividend. The result further contradicts the position of agency cost theory which says that the cost of increasing is lower than that of decreasing dividend. In addition, the finding show that the behaviour of the firms is in conflicts with signalling theory because they are more interested to decrease than to increase dividend and asserts that the firms use dividend as signalling device. The result further corroborates with Lintner corroborate with Zurigat and Gharaibeh and Abukhalaf (2,19,23). A possible explanation to this is that listed Industrial Goods in Nigeria do not increase dividend until making sure that the increase can be sustained. Also with an above target-dividend a slow reduction is expected but given the nature of the firms and the period covered by the study, the firms are likely to face liquidity problem due to the adverse economic condition. As such it would not possible for them to be fully reluctant to decrease than to increase.

4.5 Result of asymmetric partial adjustment model including interaction with high/low Growth potentials (Model III)

The asymmetric partial adjustment model has been examined not only to determine whether adjustment is asymmetric below and above target payout ratio, but also asymmetric if the adjustment rate varies for below/above-targets dividend adjustment when firm is having low/growth potentials as well as below/above-target dividend adjustment when firm is experiencing high growth potentials. The best fitted estimation of the result is based on FE model due to significant of the Hausman specification test which exhibits a chi2 value of 26.99 with p-value 0.0007. On the bases of this, the hypothesis that says RE is the most appropriate estimate was rejected. The FE model was estimated and summary result is presented in Table 6.

Table 6: Result of the Asymmetric Partial Adjustments Model including interaction with growth potentials (Model III)

	Coefficients	t-value
Common intercept	-0.0935 (0.566)	-0.58
Δ_{pevit}^{below}	-0.0306 (0.877)	-0.16
Δ_{pevit}^{above}	1.5582*** (0.000)	4.55
Lgwth	0.0957 (0.195)	1.31
Hgwth	0.0052 (0.829)	0.22
$Hgwth \times \Delta_{pevit}^{below}$	0.0213* (0.049)	2.00
$Lgwth \times \Delta_{pevit}^{below}$	0.0512* (0.076)	1.8
$Hgwth \times \Delta_{pevit}^{above}$	-0.0721 (0.117)	-1.36
$Lgwth \times \Delta_{pevit}^{above}$	-0.3934* (0.064)	-1.88
R²	52.59%	
Wald Chi2	9.71	
P-value	0.0000	
Hausman Test (chi2 value)	26.99	
P-value	0.0007	

Note ***, **, * represents values are significant at 1%, 5%, and 10% level

Source: STATA output (2018)

Result presented in Table 6 shows the model has a Wald Chi2 of 9.71 with a p-value of 0.000 indicating that the model is fitted at 1% level. It can also be seen that dividend smoothing behaviour in listed Industrial Goods firms in Nigeria is not only asymmetric for below and above target but also asymmetric when firms experience high/ low growth potentials when below. This is evident from the coefficient of 0.0213 and 0.0512, for $Hgwth \cdot \Delta_{pevit}^{below}$, and $Lgwth \cdot \Delta_{pevit}^{below}$, respectively. The coefficients are found to be statistically and positively significant all at 10% level respectively. Also, the coefficient of -0.3934 for $Lgwth \cdot \Delta_{pevit}^{above}$ is significant at 10%, while the coefficient for $Hgwth \cdot \Delta_{pevit}^{above}$ is not significant at all levels of significance. This suggests that firms smooth their dividend when the dividend payment only above their target payout ratio and when they experience high growth potentials in listed industrial goods firms in Nigeria. Thus test of hypotheses that propose $J_7 = 0$, $J_8 = 0$ and $J_7 = J_8$ with Fstat. Value of 2.98 and 4.29 for the two test respectively were all found to be statistically significant at 10% and 5% respectively. This suggest that the variables are not equal and also not equal to zero. However the test cannot be performed between coefficients J_5 & J_6 because they are not positive significant as specified by the study requirement.

Based on these findings the **hypothesis H0₂** that says firms with low growth potentials and below -target dividend move to their target payout slower than the firms with high growth potentials in listed Industrial Goods firms was rejected. This is because the speed of adjustments coefficient $Hgwth \cdot \Delta_{pevit}^{below}$ (49%) and $Lgwth \cdot \Delta_{pevit}^{below}$ (76%) are significant and statistically. This indicates that firms with low growth potentials adjust their dividend toward target payout ratio in listed industrial goods firms faster than the ones with high growth potentials. This is expected because dividend adjustment below-target is usually up-ward movement and in order to reduce agency cost, firms that are cash cows have high free cash flow are supposed to adjust quickly than those otherwise.

The finding also confirms dividend signalling, which says managers of high profitable firms tend to signal their good prospect in the future cash flow their smooth less and pay more and Zurigat and Gharaibeh, who posit that Jordanian firms are highly sensitive to smoothing when they experience negative earnings as such with positive earning. But contradicts Abu-Khalaf who found that high profitable firms smooth their dividend firm faster than low profitable (2,23).

On the **hypothesis H0₃** which states that firm with high growth potentials and above-target dividend smooth faster than the firms with low growth potentials in listed Industrial Goods firms in Nigeria. The results reveal that coefficient for $Hgwth \cdot \Delta_{pevit}^{below}$ (177%) and $Lgwth \cdot \Delta_{pevit}^{below}$ (64%) are not significant positive significant. In addition a test whether the two coefficients are jointly significant for asymmetric adjustment to exist was not satisfied. Thus, hypothesis H0₃ was not rejected. A possible explanation to this is that with a above target-dividend a continuous decrease is expected and the firms with high growth potentials are highly constrained as such it would not rational for them to engage in an increase that cannot be maintained. This result is consistent with Al-

Malkawi et al who posits that firms with high profit (cash flow) pay high dividend than low profitable ones (6). Therefore, high growth potentials enable listed Industrial Goods firms in Nigeria to adjust to their target payout more quickly. The findings is also in line with signalling theory because firms with high free cash flow are likely to have severe information asymmetry and tend to pay more and smooth less.

5 Conclusion

The paper concludes that listed Industrial Goods firms in Nigeria have target payout ratio and move to their target at a moderate rate of adjustment. Also the process of the movement is asymmetrical instead of symmetrical because the firm have different down-ward/up-ward movement when they are below/above their target payout ratio. Furthermore on examining the effect of high/low growth potentials on the smoothness of dividend, the paper concludes that firms smooth their dividend when their dividend payment is below-target payout with high and low growth potentials. The speed adjustment is faster when below-target with low growth potentials.

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