Determinants of Corporate Dividend Policy under Hyperinflation and Dollarization by Firms in Zimbabwe

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Abstract

Studies examining dividend policy within a developing market in the context of hyperinflation and dollarization are scarce. This study investigates the possibility of non-linearity in the determinants of corporate dividend policy; assessed how dividend policy is affected by other financial decisions and tests the applicability of the Lintner model. Panel ordinary least squares (OLS) and generalized methods of moments (GMM) techniques were employed for Zimbabwe listed, 2000 to 2016. The Lintner model is applicable under hyperinflation only and it can be specified as a non-linear function. The study confirms the existence of non-linearity between dividend policy and selected explanatory variables using an extended Lintner model. Furthermore, financing and investment decisions are important in explaining dividend policy. Corporate dividend policy should be developed in view of the future growth prospects, ownership concentration and shifts in monetary policy by the central bank. The policy should be sensitive to prevailing market conditions.

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1. Introduction

The pioneering work by Modigliani and Miller (1961) affirms that firm value is insensitive to dividend policy. Dividends are a residual paid when a firm fails to profitably invest excess earnings. The transactions cost theory (Fama, 1974) shows that high costs of raising finance cause firms to reduce dividend payouts. This is consistent with the pecking order hypothesis (POH) which shows that excess funds are availed for investment opportunities and not for dividend payout (Myers and Majluf, 1984). However, markets are imperfect (Gordon, 1963, Lintner, 1962) as such dividends affect firm value. The agency costs theory argues that payment of dividends removes excess profits which may be used for non-productive purposes (Easterbrook, 1984, Jensen, 1986). The clientele theory (Allen at el, 2000, Seida, 2001) argues that dividend policy matters only when the supply and demand of high dividend paying stocks differ. On the other hand, the bird in hand theory argues that the fear of risk by investors make them to prefer current as opposed to future dividends. Investor uncertainty falls away as they receive dividends in the current period. As a result they discount cash flows using a lower rate giving rise to a high firm value (Gordon, 1963, Lintner, 1962).

Zimbabwe experienced hyperinflation between 1997 and 2008 following the land reform that was done to compulsorily acquire land from the white minority and give it to the landless black majority (Mandizha, 2014, Kararach et al, 2010). In addition, the payment of gratuities to war veterans and finance the war in Democratic Republic of Congo was not supported by the international community. Consequently, the International Monetary Fund (IMF) and the World Bank (WB) withdrew their financial support. In response to this, the government printed money to finance recurrent expenditure which became inflationary. High inflation adversely affected firm operations. Firms (Njanike et al, 2009, Chiwandamira, 2009) survived on speculative profits, investing in stable currencies and stock piling, asking for shorter payback and the level of dividend payout fell due to low real profits. By end of 2008, the rate of inflation had reached 231 million percent. The global political agreement was signed at the end of 2008 following pressure exerted by poor performance of the economy. This gave rise to the formation of the government of national unity at the beginning of 2009. This was followed by introduction of a multi-currency regime composed of the United States Dollar, South African Rand and Botswana Pula which became legal tender and immediately inflation fell to single digits. The economy and exchange rates stabilized, speculative activities and opportunities for making arbitrage profits ceased (Kararach et al, 2010; Sikwila, 2013). However, the country still experienced liquidity problems due to the loss of the lender of the last resort function by the Reserve Bank of Zimbabwe (RBZ). Firms were still unstable which affects the level of dividends distributed to shareholders. Formulating a policy on corporate dividend decisions was still important for firm managers under dollarization period as well. The annual headline inflation has been below 5% during the greater part of 2018. It surged to 21% in October 2018 and to 42.1% in December 2018. Increased

speculative tendencies and ever rising foreign currency rates on the parallel market are fueling inflation (RBZ, 2019). Dollarization ended on 24th of June 2019 through statutory instrument 142 which banned the use of any other currency and recognizes only the Zimbabwe Dollar as legal tender. The currency is now composed of bond notes and coins and electronic money, referred to as Real Time Gross Settlement (RTGS) dollars. Once again, the RBZ has regained its lender of the last resort function. The economic picture is still gloomy due to high uncertainty (Dzirutwe, 2019). The country still suffers from policy inconsistences which affect corporate behavior. These developments require a detailed analysis which falls outside the scope of this study.

Literature is not yet clear on how firms make decisions on whether pay or not to pay dividends in the unique Zimbabwean context. The dearth of studies focusing on dividend policy under these conditions limits our understanding. The understanding of main corporate dividend theories may change, the testing of which has not been done. Potential non-linearity in the determinants of dividend policy have not been discussed in this context. Findings lack consensus on the best measure of corporate dividend policy and they are also country specific. The explanatory power of variables and acceptable theoretical propositions are expected to change under the two periods. Previous studies (Mutenheri, 2003, Elly and Hellen, 2013, Mirbagherijam, 2014, Nor, 2012, Pesantes, 2005) focused on dollarization and hyperinflation without explaining the dynamics in dividend policy. Thus, policy options based on previous studies fail to guide firm managers faced by the Zimbabwean scenario. The analysis of dividend policy in this context brings new insights and widens the scope for policy making. In view of this, the main objectives of study are to: analyse dividend policy to enhance our understanding and applicability of dividend theories; determine the key determinants of dividend policy and bring out the perceived non-linearities between dividend policy and selected variables; examine the impact of other corporate financial decisions and identify the best measure of dividend policy.

This study shows that the Lintner model is applicable under hyperinflation, it can be extended and specified as a non-linear function. Dividend policy is best captured using dividend per share (PR1). Results confirm the existence of non-linearity relationship between dividend policy and selected variables (inside ownership, firm size and earnings per share). Furthermore, financing and investment decisions were important in explaining dividend policy. The effect of explanatory variables was sensitive to the sample period, method of estimation and the measure of the dividend policy employed.

The rest of the study is organized as follows: section two discusses the theoretical framework and provides evidence from previous studies, section three discusses the methodology and data, section four discusses the results and section five concludes and provides policy implications.

2. Literature Review

2.1   Theoretical Framework

According to Lintner (1956) firms have target payout ratios, R_i, applied to current profits after tax (P_{it}). Adjustment rates, C_i, defining the actual change in dividends and remains stable for firms across time since investors prefer stable dividends. Lintner developed a partial adjustment model to capture changes in dividend levels between any two periods. The model was based on the premise that managers are concerned with stability of dividend payments and hence they monitor the actual changes in dividends (ΔD_{it}) from one period to the next.

This is shown as

$$\Delta D_{it} = \alpha_i + C_i[D_{it}^* - D_{i,(t-1)}] + \varepsilon_{it} \tag{2.1}$$

Where,

$$\Delta D_{it} = D_{it}^* - D_{i,(t-1)} \text{ and } D_{it}^* = R_i(P_{it}) \tag{2.2}$$

Dividends in the current and previous years are represented by D_{it} and $D_{i(t-1)}$ respectively, D_{it}^* is the dividend that the firm targets to pay. The theoretical dividend model 2.1 can be written as

$$D_{it} = \alpha_{it} + \beta P_{it} + \gamma D_{i,(t-1)} + \varepsilon_{it} \tag{2.3}$$

Where: $\beta = C_i(R_i)$ and $\gamma = 1 - C_i$, ε_{it} is the error term and α_{it} is a constant which is normally positive to show the reluctance by managers to cut dividends. The pattern of dividends become a smoothed pattern of earnings and shows the time path of permanent earnings. The model has been tested before by establishing factors that explain C_i, establishing the target payout ratio that firms aim to achieve, R_i, and the significance of P_{it} in explaining dividend policy. These three factors are important in explaining the partial adjustment model. Previous studies (King'wara, 2015, He et al, 2016) have employed dividend per share data to measure dividend policy for listed firms. According to Ahmad and Javid (2009) the model by Lintner can be extended by incorporating other variables that affect a firm's dividend policy. Dividend policy interacts with financing and investment decisions, due to market imperfections. For example, Al-Najjar and Belghitar (2011) argued that dividends and investment decisions are negatively related. This is supported by Bildik et al, 2015 who opined that large firms pay dividends in the absence of credible growth opportunities. Furthermore, Lahiri and Chakraborty (2014) showed that dividend and investments decisions are made by firms at the same time.

2.2   Empirical Review

Several studies have been done in developed and developing countries and also in the African context. They have identified various determinants of dividend policy. Their findings fail to provide direction on the determinants of dividend policy in our context. This validates the argument that policy making in developing economies may not entirely rely on studies done elsewhere. Past studies found mixed effects for determinants of dividend policy and results on the impact of each variable remain inconclusive. Furthermore, some studies have identified some variables that are not important in explaining dividend policy. Table 2.1(a) and (b) summarize the determinants of dividend policy from previous studies.

Table 2.1(a): Determinants of Dividend Policy

Variable	Significant Positive Effect	Significant Negative Effect	Insignificant Effect
Previous Dividends	Zameer et al, 2013, Ahmad and Javid, 2009, Alzomaia & Al-Khadhiri, 2013, Edmund, 2018, Mirbagherijam, 2014		
Firm Growth (FG)	Mutenheri, 2003, Hosain, 2016, Bushra and Mirza, 2015.	Arshad et al, 2013, Farinha, 2003, Gill et al, 2010, Kania and Bacon, 2005, King'wara, 2015, Bushra and Mirza, 2015	Nguyen et al, 2013; Zameer et al, 2013, Ahmad and Javid, 2009, Edmund, 2018, Farinha, 2003, Alzomaia & Al-Khadhiri, 2013, Gangil and Nathani, 2018.
Leverage (FLEV6)	Nguyen et al, 2013, Ahmad and Javid, 2009, Kania and Bacon, 2005, Arshad et al, 2013, Gill et al, 2010	Al-Najjar and Kilincarslan, 2018, Ahmad and Javid, 2009, Hosain, 2016, Uwuigbe, 2013, Huda and Abdullah, 2013, Edmund, 2018, King'wara, 2015,	Zameer et al, 2013, Ahmad and Javid, 2009, Farinha, 2003, Rizqia and Sumiati, 2013, Alzomaia & Al-Khadhiri, 2013
Inflation (INFLN)	Mirbagherijam, 2014, Basse, 2009	Edmund, 2018, Khan et al, 2013	Mambo, 2012, Elly and Hellen, 2013
Inside ownership (OWN1)	Zameer et al, 2013, Saez and Gutierrez, 2015	Farinha, 2003, Rizqia and Sumiati, 2013, Kania and Bacon, 2005	Nguyen et al, 2013, Arshad et al, 2013, Hosain, 2016
Firm Size (SIZE2)	Al-Najjar and Kilincarslan, 2018, Uwuigbe, 2013, Arif & Akbar, 2013, Arshad et al, 2013, Pathan et al, 2016	King'wara, 2015, Farinha, 2003, Bushra and Mirza, 2015	Zameer et al, 2013, Huda and Abdullah, 2013, Rizqia and Sumiati, 2013, Hosain, 2016

Table 2.1(b): Determinants of Dividend Policy

Variable	Significant Positive Effect	Significant Negative Effect	Insignificant Effect
Money Supply (MSP)	Pandey and Bhat, 2004	Akyildirim et al, 2013	Mambo, 2012
Earnings per Share (EPS)	Ahmad and Javid, 2009, Alzomaia & Al-Khadhiri, 2013, Mirbagherijam, 2014, King'wara, 2015		
Taxation Paid (TP)	Rehman and Takumi, 2012	Arif & Akbar, 2013, Morck and Yeung, 2005, Chuang et al, 2018	Gul et al, 2012, ul Hassan et al, 2013, Khan et al, 2017
Investment Decisions (INV1)	Adediran and Alade, 2013	Al-Najjar and Belghitar, 2011	
Institutional Ownership (OWN5)	Farinha, 2003, Allen et al, 2000 and Bozec et al, 2010	Kania and Bacon, 2005, Huda and Abdullah, 2013, Bushra and Mirza, 2015	

3. Data and Methodology

3.1   Model Specification

The Levin, Lin and Chu (LLC) and Im, Pesaran and Shin (IPS) were used to test for unit root. The best panel ordinary least squares (OLS) estimation method was selected by applying tests on redundant fixed effects and the Hausman (1978) test on random effects panel OLS. The panel OLS model was specified as:

$$y_{it} = \beta_0 + \beta_f firm'_{it} + \beta_m macro'_t + \varepsilon_{it} \tag{3.1}$$

Where: y_{it} measures dividend policy, explanatory variables are captured using two composite variables: *firm and macro* as discussed. β is a vector of parameters to be estimated. The error term (ε_{it}) captures individual specific or time invariant component (a_i) and a remainder component (v_{it}). Diagnostic tests (coefficient and residual diagnostics) were applied on the FE model.

The dynamic model explained the impact of previous dividends on current levels as specified in the Lintner model. The study also employed the generalized method of moments (GMM) by Arellano and Bond (1991). The model used a lag to show the speed of adjustment towards the desired level of corporate dividend policy (Myers,

1977). The dynamic model was specified as follows:

$$y_{it} = \alpha_0 + \alpha y_{i(t-1)} + \beta X'_{it} + \varepsilon_{it} \tag{3.2}$$

Where, y_{it} is a measure of dividend decisions, X'_{it} is a vector of explanatory variables, $\varepsilon_{it} = \mu_i + \lambda_t + \omega_{it}$. All variables are defined in Table 3.1.

3.2   Description of Variables and Expected Signs

Dividend policy (PR) was measured using 3 variables to check for robustness of results (Table 3.1). It was specified as a function of firm and macro variables as follows.

$$PR = f(FG, LEV, INV, MSP, INFLN,\ TP, SIZE,\ EPS, OWN) \tag{3.3}$$

Highly levered firms (LEV) pay less dividends due to high debt service costs (Al-Najjar and Kilincarslan, 2018, Edmund, 2018). More dividends are paid where a firm relies on other sources of cash flows (Arshad et al, 2013, Nguyen et al, 2013). Payment of dividends may differ according to debt composition. High investment expenditure (INV) reduces the likelihood of paying dividends (Al-Najjar and Belghitar, 2011). Firms with more investment opportunities may source external funding where access to financial markets is easy and they can still maintain dividend payouts (Adediran and Alade, 2013). High earnings per share (EPS) guarantee payment of more dividends (Mirbagherijam, 2014, King'wara, 2015). Again, firms may not necessarily make huge dividend disbursements as they seek to retain funds for future use. More dividends are paid where managers seek to reward themselves using free cash flows (Zameer et al, 2013, Saez and Gutierrez, 2015). On the other hand, managerial ownership (OWN) may mean that managers would postpone the payment of dividends and invest to increase the firm's future income generating capacity (Farinha, 2003, Rizqia and Sumiati, 2013). Institutional ownership (OWN5) provides an effective monitoring device for firms to help reduce overinvestment by firm managers. It reduces payment of dividends (Huda and Abdullah, 2013, Bushra and Mirza, 2015). On the other hand, firms with a good capital base may still pay dividends to institutional investors as they may not need to retain additional funds (Farinha, 2003, Allen et al, 2000 and Bozec et al, 2010). Taxation (TP) reduces funds available for payment of dividends (Arif & Akbar, 2013, Morck and Yeung, 2005, Chuang et al, 2018). Taxation may have a positive relationship with dividend payout where firm managers have chosen a certain dividend policy, desire to use dividends as a way to retain investors or have access to other financing alternatives (Rehman and Takumi, 2012). Large sized firms (SIZE2) pay more dividends as they are likely to be financially stable (Al-Najjar and Kilincarslan, 2018, Uwuigbe, 2013, Arif & Akbar, 2013). These firms could have taken more debt to finance their current levels of growth. This would reduce payment of dividends as they service past debts (King'wara, 2015, Bushra and Mirza, 2015). Inflation (INFN) and money supply (MSP) were useful in controlling

for hyperinflation and dollarization respectively as firms designed their dividend policy (Mirbagherijam, 2014Akyildirim et al, 2013). Firms are expected to have reduced dividends payout under hyperinflation and more payouts during dollarization period.

Table 3.1: Variables Definitions and expected signs

Variable	Definition	Expected signs
Dividend Decisions (PR1)	Dividend paid/Total Shares	Dependent variable
Dividend Decisions (PR2)	Dividend Paid/Net Income	Dependent variable
Dividend yield (DYD)	Dividend Per Share/Market price per share	Dependent variable
Firm growth (FG)	% Change in total sales ((Current year Sales-Previous year Sales)/Previous Year Sales)	+/-
Leverage (Flev 6)	Total debt/equity	+/-
Investment decisions (INV1)	Net Fixed Assets (Total Fixed Assets-Total Liabilities-Depreciation)/Total Assets	+/-
Inflation (INFLN)	Annual Inflation Rate divided by 100	+/-
Insider Ownership (OWN1)	Management shareholding/Total shares	+/-
Institutional Ownership (OWN5)	Total shares owned by Institutional Investors/Total Shares	+/-
Firm size (SIZE2)	Log of Total Assets	+/-
Money Supply (MSP)	M2 over GDP, as a decimal	+/-
Earnings per Share (EPS)	Total Earnings over total shares outstanding	+
Taxation (TP)	Taxation paid/Operating income	+/-

3.3 Sources of Panel Data and Sample Size

The study covered a 17-year period as follows: period of inflation (2000 – 2008) and dollarization (2009-2016). The choice of this period is detected by political and economic factors in Zimbabwe. Data was obtained from financial statements on company websites and the African Financials website. Data on macro-economic variables was obtained from World Bank (2017) and RBZ reports. There were 63 firms listed on the ZSE as at 31 December 2018. The study excludes three (3) companies under suspension, six (6) banking institutions and six (6) insurance firms. There was a total of eighteen (18) firms with incomplete data sets and some of them were registered after the year 2000. This leaves a total of thirty (30) firms giving a total of 510 firm years. Comparatively, Kowerski and Wypych (2016) employed 71 firms with 307 firm years.

4. Results and Discussion

4.1 Descriptive Statistics and Diagnostic Tests

The problem of multicollinearity was checked using Pearson correlation matrix. Correlation coefficients were mostly less than 0.5 which implies that there was no serious problem of multicollinearity between any pair of variables. Thus, all the variables could be used in the same model without giving spurious results (Table withheld). Findings further showed that fixed effects are not redundant for all the three sample periods. Random effects were correlated with explanatory variables. This implies that the FE model would be useful in the analysis. Furthermore, the study conducted unit tests at 5% level of significance. Results showed that all variables were stationary at levels (Table 4.1).

Table 4.1: Unit Root Tests

	Levels		1st difference	
	Levin, Lin & Chu	Im, Pesaran & Shin	Levin, Lin & Chu	Im, Pesaran & Shin
Variable	Statistic	Statistic	Statistic	Statistic
FLEV6	-3.95***	-5.33***	-14.00***	-14.68***
INV1	-3.66***	-4.31***	-6.67***	-11.69***
PR1	-7.35***	-6.70***	-13.64***	-13.39***
PR2	-8.16***	-7.01***	-14.56***	-14.33***
DYD	-6.71***	-6.34***	-11.56***	-12.14***
INFLN	-11.60***	-6.72***	-18.59***	-13.63***
OWN1	-1.57*	-1.71**	-9.31***	-10.12***
OWN5	-5.51***	-3.65***	-8.25***	-9.38***
SIZE2	-3.86***	-3.02***	-13.86***	-13.59***
MSP	-16.02***	-11.64***	-62.39***	-47.75***
EPS	-6.93***	-4.59***	-16.62***	-14.77***
TP	-5.82***	-5.89***	-13.88***	-14.89***
FG	-12.00***	-11.67***	-16.19***	-18.89***
*** significant at 1%; ** significant at 5%; *significant at 10%				

4.2 Evidence on the Determinants of Dividend Policy

Firstly, the study tested the predictive power of the Lintner model. More variables were incorporated and estimations were done using GMM and FE models. Squared variables for ownership structure (Morck et al 1988, McConnel and Servaes, 1990), earnings per share and firm size were used to test for non-linearity in the model.

Secondly, the study specified models with no lagged variables to examine the determinants of dividend policy. These allowed for the selection the best measure of dividend policy.

4.2.1 The Lintner Model

The model is specified as follows:

$$DPS_{it} = \alpha_0 + \alpha DPS_{i(t-1)} + \beta EPS_{it} + \varepsilon_{it} \tag{4.1}$$

Where $\varepsilon_{it} = \mu_i + \lambda_t + \omega_{it}$

Dividend per share (DPS) was represented by PR1 and earnings per share is denoted as EPS. The error term ε_{it} is composed of firm specific component, μ, time specific component, λ_t and a component varying across firms and across time, ω_{it}. The parameters are represented by α and β.

The Wald statistic for the joint significance of regressors was significant at 1%. This implies the models have predictive power to explain the level of dividend behaviour. The J-Statistic for all the models estimated by GMM were close to zero, thus all the models were good. P-values were not reported since J-stats were all close to zero. The problem of heteroscedasticity was dealt with using robust standard errors in all estimations. Generally, the results (Table 4.2) are consistent with the Linter model. The constant is positive and significantly different from zero. Thus, the hypothesis that firm managers are reluctant to reduce dividends is rejected at 1% level. The level of dividend payout and earnings per share are positive and significantly different from zero as expected. Dividend payments do not follow a random walk since the co-efficient of the lagged dividend variable was significant and positive. Under hyperinflation and using the pooled sample, current earnings and previous dividends, individually, have a significant effect on dividend policy as suggested by Linter. The adjustment factors for all the models were at least 0.50 which shows that dividend payments were not smoothened. By considering the values for R^2 the best model was estimated using FE. Under dollarization the Lintner model was not applicable. The coefficient of lagged DPS variable was negative and insignificant. Firms may not rely on past dividends to predict future dividends under dollarization. In this case firms, may be paying dividends only when there is residual income. Results show that the adjustment factors were at least 0.74 while the estimated payout ratios were around 0.11 for the three estimation periods. Thus, the adjustment to the targeted payout ratio, by firms, is not instant.

Table 4.2: The Lintner Model

Period	2000-2016		2000-2008		2009-2016	
Variable	FE	GMM	FE	GMM	FE	GMM
DPS_{it-1}	0.2512***	0.4628***	0.1822***	0.496***	-0.0469	0.4161***
EPS_{it}	0.093***	0.1933**	0.0992***	0.2100***	0.1157***	0.205***
C	0.0147***	0.0018***	0.0171***	0.0010***	0.0200***	0.0024***
Target PR ($\rho=\beta/\delta$)	0.1242	0.3598	0.1213	0.4167	0.1105	0.3511
Adj Factor ($\delta = 1-\alpha$)	0.7488	0.5372	0.8178	0.504	1.047	0.5839
R^2	0.7645	0.6196	0.856	0.7508	0.8131	0.5983
Adj R^2	0.7481	0.6180	0.8346	0.7487	0.785	0.5949
F-Test	46.69***	-	39.91***	-	28.92***	-
DW	2.11	2.24	2.18	2.22	1.84	2.40
J-Stats		3.88E-29		8.12e-28		5.12E-28
Observations	478	448	240	240	238	238
Wald Joint	376.73***		374.79***		150.89***	
*** significant at 1%; ** significant at 5%; *significant at 10%, *significant at 10%, p-values not reported since J-stats are close to zero						

The extended Lintner model was specified as follows:

$$DPS_{it} = \beta_0 + \beta_1 DPS_{i(t-1)} + \beta_2 FG_{it} + \beta_3 FLEV6_{it} + \beta_4 INFLN_{it} + \beta_5 OWN1_{it} + \beta_6 OWN1SQD_{it} + \beta_7 MSP_{it} + \beta_8 EPS_{it} + \beta_9 EPSSQD_{it} + \beta_{10} TP_{it} + \beta_{11} INV1_{it} + \beta_{12} OWN5_{it} + \beta_{13} OWN5SQD_{it} + \varepsilon_{it} \qquad (4.2)$$

Results (Table 4.3) for the specific FE models that were selected based on the number of significant parameters, value of R^2 and the diagnostic tests applied earlier. The best model was chosen from each sample period and the values of R^2 were ranging from 75% to 82%. The models were considered good as reflected by the statistically significant values for F-tests. The adjustment factors were at least 0.88 and the payout ratios ranged from 0.07 to 0.20. The constant was negative and significant using the pooled sample. The estimation by Lintner did not apply when using the pooled sample. However, the constant was positive and significant in the two subsamples. Thus, firms do not adjust instantly to the desired payout level as suggested by Khan et al (2013). The differences observed between the subsamples and pooled sample could be due to different reactions by firm managers under the two dispensations. This would demand different policy responses considering the different market conditions.

The main contribution from this discussion is the modification the Lintner model

and specifying it as a non-linear model. This is a contribution, not only in the context of developing markets, to literature on corporate dividend policy. More so, the results contribute to the understanding of the Lintner model in the context of hyperinflation and dollarization. Past dividends are important in predicting future dividends when using the pooled sample. These findings are consistent with previous studies (Khan et al, 2013, Hosain, 2016) which showed that previous dividends have a significant effect on future dividends. Previous dividends were not important in explaining the dividend policy under dollarization and hyperinflation. These findings are not consistent with the Lintner model as indicated by the insignificant coefficient(s). This suggests that firms were using the residual approach that requires them to pay dividends by considering the remaining equity after meeting capital requirements. However, the study shows that EPS have a positive effect on future dividends. The size of the EPS coefficient, was significant at 1%, varied among the three periods of estimations being 0.1813 (pooled sample), 0.1257 (hyperinflation) and 0.0672 (dollarization). There were differences because under hyperinflation firms had more nominal earnings than under dollarization and hence they would afford to payout more dividends. Furthermore, the study shows that EPS have a non-linear relationship with dividend policy under the period of hyperinflation and using the pooled sample. This is reflected by the negative coefficient of the squared earnings variable. Firm managers would exercise their power to increase dividend payouts up to a level of earnings per share of 21.18 cents (2000-2016) and 21.57 cents (2000-2008). After this level, dividend payout would fall which may be explained by firm managers' actions to distribute residual earnings to other uses like investment expenditure. Average EPS are still at 4.10 cents which shows that earnings are still an important consideration on the level of dividends payouts.

Results show that firm growth (FG) has a negative and significant effect on dividend policy. These findings are consistent with previous studies (Arshad et al, 2013, Al-Najjar and Kilincarslan, 2018) which suggest that firms were more concerned with their investment opportunities than with paying of dividends. The more sales grow then the less firms were willing to pay dividends. Firms were more willing to take up investment opportunities. These findings are also consistent with the pecking order hypothesis and transactions cost theory. Therefore, firm managers would desire to allocate cheaper internal finance to exploit growth opportunities. It was cheaper for firm managers in Zimbabwe to reinvest using available free cash flows than to rely on outside funding, hence a cut in dividends.

Financial leverage has a significant and positive effect on dividend policy during the period of dollarization. Most of the studies predicted that leverage has a negative effect since dividend payments and debt may be used interchangeably as alternative forms of firm control. The trade-off theory also argues that highly leverage firms resort to the use of internal sources of finance to make debt repayments as such they avoid the payment of dividends (Khan et al, 2013). As a point of departure, results are, however, consistent with Arshad et al (2013) who showed that debt has a positive relationship with dividend policy. Easterbrook (1984) argued that firms can

afford to simultaneously pay out dividends and raise new funds in the capital market where monitoring costs for managers are low. Under hyperinflation, leverage had a negative and insignificant effect on dividend policy. These results could be attributed to the fact that debt repayments were eroded, and firms were making profits from arbitrage activities as opposed to production. Thus, they could afford to pay dividends with no regard to debt levels. The other explanation could be that firms did not take much of long-term debt to avoid being exposed to long term debt obligations hence facing the risk of bankruptcy. This is consistent with results by Alzomaia and Al-Khadhiri (2013) who argued that debt has no effect on dividend policy. For Zimbabwe, this can further be explained by lower debt-equity ratios during that period. The value of equity was increasing, more than changes in debt, in line with inflationary trends since the equities would act as an inflation hedge.

The agency theory posits that ownership structure is important in explaining dividend policy for firms. It shows that firms with more insider and institutional ownership have low agency costs. Such firms are expected to have low dividends payouts and they signal firm value by paying high dividends. As a point of departure from the agency theory, this study finds that ownership structure has a positive effect on dividend policy. This is evidence of the presence of managerial entrenchment within the Zimbabwe market which could be explained by weak monitoring by boards. The finding is consistent with previous studies (Ahmad and Javid, 2009, Zameer et al, 2013) which show that firms with more inside ownership use dividends to signal firm value. Results agree with the proposition that firms with more inside control regard the consequences of cuts in dividends and omissions to be ineffective. Tightly controlled firms pay more dividends as they respond to temporary fluctuations in earnings than firms with diffused ownership. Principal shareholders require more dividends to reduce agency costs by mopping up excess liquidity (Easterbrook, 1984, Shleifer and Vishny, 1986). Most importantly, the study shows that dividend payout and inside ownership have a non-linear relationship. Dividend payout increases as inside ownership increases up to a level of 79.79% and declines thereafter. None of the firms have reached this level of ownership under the period of dollarization. Using the full sample, the turning point is at 40% of inside ownership. These critical points show the decline in levels of managerial entrenchment. Thus, inside ownership is still an important consideration regarding payment of dividend in the current environment.

Institutional ownership has a negative effect in dividend payout ratio under hyperinflation and a positive effect under dollarization. The result under dollarization is consistent with proposition (Allen et al, 2000, Bozec et al, 2010) that institutional investors can influence management to pay more dividends to reduce agency costs. The negative effect, found under hyperinflation, is consistent with propositions (Mehrani et al, 2011) that institutional shareholders may use their influence over managers to pay low dividends and instead use funds for other purposes. However, such practices are applicable for a short time otherwise the relationship may turn out to be positive where ownership becomes more concentrated. Thus, hyperinflation eroded cash payments for dividends by

Zimbabwe firms and investors would rather prefer to be rewarded by other means like getting more shares which maintain their value. This is in line with previous propositions (Thanatawee, 2014, Huda and Abdullah, 2013).

Firm size has no effect on dividend payout ratio within the two subsamples. Using the pooled sample, it has a positive and significant effect on dividend policy which shows that larger firms are paying out more dividends than smaller ones. This is consistent with empirical literature (Pathan et al, 2016, Al-Najjar and Kilincarslan, 2018 and Uwuigbe, 2013) which developed the proposition that firms use large payouts as a signaling device that they are doing well. The explanation for Zimbabwe could be that large firms endeavored to pay more dividends as a way of retaining investors. Firms enjoyed more cash flows from arbitrage opportunities as such they would afford to pay more dividends. Furthermore, firm size has a non-linear effect on dividend payout which is evidenced by a negative and significant coefficient of the squared variable. The regression model showed a curvilinear relationship between firm size and dividend payout in which firm size increases at first and then decreases as the log of assets goes up.

Taxation coefficient is positive and significant in both sub sample periods which is contrary to most findings in literature. This suggests that Zimbabwe firms were able to payout more dividends even as they paid tax. This is consistent with the proposition (Amidu and Abor, 2006, Gill et al, 2010, Rehman and Takumi, 2012) that firms with an increasing trend in tax liability have a high preference for paying out more dividends. In the case of Zimbabwe, it is possible that firms were having income from alternative sources to compensate for dividend payments. Another explanation could be that firm managers may have selected their dividend policy and they would continue to honour such payments to retain investors. Again, the market was dominated by anxiety as such payment of dividends helped in investor retention. Firms managed to take advantage of debt financing, as opposed to after tax profits, to maximize their value while paying out dividends. This is consistent with theoretical arguments by Ince and Owers (2012).

The investment variable is insignificant during the hyperinflation period and therefore dropped from the analysis. The study shows that, under dollarization, investment and dividend decisions have a positive association which is consistent with simultaneous dividend theory (Lahiri and Chakraborty, 2014). The study suggests that dividend payouts are increasing as firms increase investment expenditure. This is possible where firms do not rely on internal sources of finance for investment. Zimbabwean firms were able to access some form of debt finance considering the advanced financial sector. Furthermore, financial constraints seemed to be insignificant in relation to dividend policy. Hence, the variable capturing financing constraints was dropped from the analysis because it was insignificant. The other explanation consistent with the Zimbabwe market, given by Franc-Dabrowska (2009), is that most firms that paid dividends could have been at their maturity stage as such they had enough assets for long term investment and for dividend payouts. Furthermore, Kato et al (2002) proposed that dividend increasing firms significantly increase their investment activities as they have higher earnings

and lower debt ratios. Firms in Zimbabwe have debt ratios below 50% level.
The inflation variable and money supply variables were employed to control for
hyperinflation and dollarization. As expected, inflation had a negative effect under
hyperinflation while money supply had no effect throughout the review period.

Table 4.3: Extended Linter Models for three sub-periods

Period	2000-2016	2000-2008	2009-2016
Variable /Model	FE	FE	FE
C	-0.2518**	0.01767***	0.0100***
$DPS_{i(t-1)}$	0.1226***	0.0320	-0.0570
FG	-0.0012**	-0.0023***	-0.0010**
FLEV6	-0.0006	-0.0005	0.0014*
INFLN	-1.80E-10	-1.08E-09***	0.0220
OWN1	0.0540***	0.0892***	0.0538***
OWN1SQD	-0.0675**	-0.0846	-0.0338**
SIZE2	0.0306**	-	-
SIZE2SQD	-0.0009**	-	-
MSP	0.0011	0.00029	0.0002
EPS	0.1813***	0.1257***	0.0672**
EPSSQD	-0.4279***	-0.2914**	-
TP	0.0076**	0.0203***	0.0069***
INV1	0.0020*	-	0.0040***
OWN5	0.0004	-0.0046*	0.0089***
OWN5SQD	0.0020**	-	-
Adj Factor ($\delta = 1-\alpha$)	0.8874	0.968	1.057
Target PR ($\rho=\beta/\delta$)	0.2043	0.1299	0.0710
R^2	0.75	0.82	0.82
Adj R^2	0.73	0.79	0.79
F-Test	29.83***	23.38***	23.10***
DW	2.03	2.28	2.09
Observations	478	240	238
*** significant at 1%; ** significant at 5%; *significant at 10%			

4.2.2 Results Using the Specific Dividend Models

Firstly, we estimated model 3.1 in each of the sample period for each of the three
measures of dividend policy (PR1, PR2, DYD) using the two estimation methods
(GMM, FE). Secondly, we selected the best model for each dependent variable
leaving us with three models under each period. Thirdly, we selected a best model,
under each period, after comparing the three models within each period and it
formed the basis of discussion of results. The selection criteria were discussed under
models by Lintner in the previous section. Literature lacked consensus on the best
measure of dividend policy and hence the use of three measures. This study
contributed by showing that PR1 is the best proxy for dividend policy in the context

of Zimbabwe. More so, PR1 has been widely used in literature and in pursuant of this, the study also adopted the results based on the same proxy under dollarization[5] though GMM produced better results. Generally, the results (Table 4.4) were the same as those found using the Linter model. The implications have been discussed before and are not repeated in this section. We discuss results that showed some differences from those given using the model by Lintner.

Leverage has a negative effect on dividend policy under hyperinflation as expected from theory. Firms had no access to the debt market due to limited financing options and hence resorted to internal finance. Firms were faced with high debt servicing costs plus fall in cash flows which reduced the funds available for dividends as stated in previous studies (Edmund, 2018, King'wara, 2015). Results show a non-linear relationship between insider ownership and dividend pay-out using the entire sample and under hyperinflation. This confirms that there is managerial entrenchment. Again, firm size has a non-linear effect on dividend pay-out using the pooled sample and no effect under dollarization. Under hyperinflation large firms were paying fewer dividends which is consistent with King'wara (2015), Farinha (2003) and Bushra and Mirza (2015). This is explained by the proposition that larger firms retain cash to repay their debt obligations.

Results for Taxation, investment expenditure and EPS are like those found using Lintner. Differences are with respect to size of coefficients. The study shows a non-linear effect of institutional shareholding. The entire sample (2000-2016) show that the negative effect of institutional ownership is dominant until a threshold[6] of 68.52% of ownership has been reached. Beyond this level, the growth opportunities for firms would have stabilized and firms would manage to pay extra cash dividends. However, under dollarization institutional share ownership has a positive effect on dividend payouts up to a threshold of 84.38%. This is attributable to the change in market sentiments as shareholders are expecting the economy to recover due to the stability that has been brought by the multicurrency regime.

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[5] Results withheld and can be provided by authors upon request
[6] Turning point = 0.0037/(2x0.0027) = 0.6852

Table 4.4: Selected Dividend Models

	2000-2016	2000-2008	2009-2016	
Dependent Var.	PR1 (FE)	PR1 (FE)	PR1 (FE)	PR2 (GMM)
C	-0.1825	0.0663***	-0.309	0.8732***
FG	-0.0011**	-0.0023***	-0.0013***	-0.0157
FLEV6	-0.0028	-0.0015*		
INFLN		-7.50E-10*		4.2573***
OWN1	0.0694***	0.1124***	0.0363***	1.5449***
OWN1SQD	-0.0885***	-0.1205**		-3.5037***
SIZE2	0.0241**	-0.0127**	0.0379	
SIZE2SQD	-0.0017**		-0.0011	
MSP	-	-0.0017	0.0018	-1.3204***
EPS	0.1832***	0.1633***	0.0737*	-0.5085**
EPSSQD	-0.4288***	-0.4090***	-0.1319	
TP	0.0081***	0.0170***	0.0013	1.0140***
INV1	0.0025**	0.0021	0.0024	0.0676**
OWN5	-0.0037*	-0.0040*	0.0108***	-0.1607*
OWN5SQD	0.0027***	-	-0.0064*	0.0843***
R^2	0.753	0.783	0.8316	0.2252
Adj R^2	0.731	0.744	0.7976	0.2912
F-Test	34.75***	20.06***	24.46***	
DW	1.76	2.01	2.07	1.8
Observations	509	270	239	239
J-stats				2.134 [0.711]
*** significant at 1%; ** significant at 5%; *significant at 10%, p-value in (.)				

5. Conclusion

The study contributed to the discussions on dividend policy by focusing on a developing market in the context of hyperinflation and dollarization. The aim was to delineate the main determinants of dividend policy. Furthermore, the study examined the effect of investment and financial decisions. This was achieved using

FE model and employing an extended version of the model by Lintner.

The model by Lintner was applicable under hyperinflation as firms, presumably, followed the stability approach to dividends to reduce investor uncertainty. There is no instant adjustment, by firms, to the target dividend policy in both subsamples. However, the extended version of the Lintner model showed that previous dividends are not important in explaining the dividend behaviour in both periods. This shows that, by extending the model, the views by Lintner may be challenged considering findings under the two sample periods. Furthermore, the model by Lintner was specified as a non-linear model. A non-linear relationship was found between dividend policy and inside ownership throughout the period. It had a non-linear relationship with earnings per share under hyperinflation and with firm size when using the pooled sample. Financing and investment decisions were important in explaining dividend policy under dollarization and had no effect under hyperinflation. The effect of explanatory variables was sensitive to the sample period, method of estimation and the measure of the dependent variable employed. Empirical results, using the selected models, showed that under hyperinflation, dividend policy was negatively affected by firm growth, leverage, inflation, firm size and institutional ownership. Variables like money supply and investment expenditure had no effect while taxation had a positive effect on dividend policy. Earnings per share and inside ownership had a non-linear relationship with dividend policy. Under dollarization, dividend policy was positively affected by inflation, taxation and investment decisions while money supply and earnings per share had a negative effect. Dividend policy had a non-linear relationship with ownership variables.

Findings provide a firm foundation for understanding dividend policy in emerging markets under unique conditions. Considering the level of uncertainty in the current environment, firms may need to develop policies that have both short and long term focus. In view of this, stable dividend policies are ideal for firms that focus on investor retention and provision of constant income. This idea is consistent with the bird in the hand theory. The presence of informational asymmetry requires firms to rely on internally generated finance. This would require them to have a long-term focus by fixing their target debt/equity ratios and paying dividends using residual income. Policies that focus on minimizing informational inefficiencies would be desirable for the Zimbabwean market. It is important to improve access to debt markets by high growth firms and assist them to continue paying dividends in the face of high managerial entrenchment and more growth opportunities.

References

[1] Adediran, S.A., & Alade, S.O. (2013). Dividend policy and corporate performance in Nigeria. American Journal of Social and Management Sciences, 4(2), 71-77.

[2] Ahmad, H. & Javid, A. (2009). Dynamics and determinants of dividend policy in Pakistan: Evidence from Karachi stock exchange non-financial listed firms. International Research Journal of Finance and Economics, 25, 148-171.

[3] Akyildirim, E., Güney, I. E., Rochet, J. C., & Soner, H. M. (2014). Optimal dividend policy with random interest rates. Journal of Mathematical Economics, 51, 93-101.

[4] Allen, F., Bernardo, A. E., & Welch, I. (2000). A theory of dividends based on tax clienteles. The Journal of Finance, 55(6), 2499-2536.

[5] Al-Najjar, B., & Kilincarslan, E. (2018). Revisiting Firm-Specific Determinants of Dividend Policy: Evidence from Turkey. Economic Issues, 23(Part 1).

[6] Al-Najjar, B. and Belghitar, Y., 2011. Corporate cash holdings and dividend payments: Evidence from simultaneous analysis. *Managerial and decision Economics*, *32*(4), pp.231-241.

[7] Alzomaia, T., & Al-Khadhiri, A. (2013). Determinants of dividend policy: The evidence from Saudi Arabia. International Journal of Business and Social Science, 4(1), 181-192.

[8] Amidu, M., & Abor, J. (2006). Determinants of dividend payout ratios in Ghana. The Journal of Risk Finance, 7(2), 136-145.

[9] Arif, A., & Akbarshah, F. (2013). Determinants of dividend policy: a sectoral analysis from Pakistan. International Journal of Business and Behavioral Sciences, 3(9), 16-33.

[10] Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. The Review of Economic Studies, 58(2), 277-297.

[11] Arshad, Z., Akram, Y., Amjad, M., & Usman, M. (2013). Ownership structure and dividend policy. Interdisciplinary Journal of Contemporary Research in Business, 5(3), 378-401.

[12] Basse, T. (2009). Dividend policy and inflation in Australia: results from cointegration tests. International Journal of Business and Management, 4(6), 13-16.

[13] Bildik, R., Fatemi, A., & Fooladi, I. (2015). Global dividend payout patterns: The US and the rest of the world and the effect of financial crisis. Global Finance Journal, 28, 38-67.

[14] Bozec, Y., Francoeur, C., Labelle, R., & Okoudjou, V. (2010). Investisseurs institutionnels et gouvernance. Revue Française de Gouvernance d'Entreprise, 7, 83-104.

[15] Bushra, A., & Mirza, N. (2015). The determinants of corporate dividend policy in Pakistan, The Lahore Journal of Economics, 20(2), 77-98

[16] Chiwandamira, D. P. (2009). Capital structures under hyperinflation: the Zimbabwean experience (Doctoral dissertation, University of Cape Town).

[17] Chuang, S. T., Chen, Y. H., Lin, C. C., & Lee, W. C. (2018). The Impact of Tax Deduction Ratio Reduction on Dividend Payouts Under the Integrated Tax System: Evidence From Taiwan. International Journal of Financial Research, 9(3), 26-35.

[18] Dzirutwe, M. 2019. Why Zimbabwe's inflation rate climbing: Finance minister Mthuli Ncube is going by the book, but to no avail, BusinessDay, 18 June. Available at: https://www.businesslive.co.za/bd/world/africa/2019-07-18-why-is-zimbabwes-inflation-rate-still-climbing/ [25 July 2019]

[19] Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. The American economic review, 74(4), 650-659.

[20] Edmund, N. K. N. (2018). Determinants of Dividend Policy among Banks Listed on the Ghana. Journal of Business and Financial Affairs, 7(1),   2-7

[21] Elly, O. D., & Hellen, K. W. (2013). Relationship between inflation and dividend payout for companies listed at the Nairobi Securities Exchange. International Journal of Education and Research, 1(6),1-8

[22] Pathan, S., Faff, R., Méndez, C. F., & Masters, N. (2016). Financial constraints and dividend policy. Australian Journal of Management, 41(3), 484-507.

[23] Fama, E. F. (1974). The empirical relationships between the dividend and investment decisions of firms. The American Economic Review, 64(3), 304-318.

[24] Farinha, J. (2003). Dividend policy, corporate governance and the managerial entrenchment hypothesis: an empirical analysis. Journal of Business Finance & Accounting, 30(9-10), 1173-1209.

[25] Franc-Dabrowska, J. (2009). Does dividend policy follow the capital structure theory?. Managing Global Transitions, 7(4), 367.

[26] Gangil, R. & Nathani, N. (2018). Determinants of dividend policy: A study of FMCG sector in India, Journal of Business and Management, 20(2), 40-46

[27] Gill, A., Biger, N., & Tibrewala, R. (2010). Determinants of dividend payout ratios: evidence from United States. The Open Business Journal, 3(1), 8 – 14.

[28] Gordon, M. J. (1963) 'Optimal Investment and Financing policy', Journal of Finance (May 1963), 264-272.

[29] Gul, S., Khan, M. B., Ahmad, B., Rehman, S. U., & Shah, M. (2012). Taxes and dividend policy (The case of Pakistan). Research Journal of Finance and Accounting, 115-121.

[30] Hausman, J. A. (1978). Specification Tests in Econometrics', Econometrica, 46 (1978), 1251–1271.

[31] He, Z., Chen, X., Huang, W., & Pan, R. (2016). External finance and dividend policy: A twist by financial constraints', Accounting and Finance, 56(4), 935-959

[32] Hosain, Z. (2016). Determinants of the dividend policy: A study on listed private commercial banks of Dhaka Stock Exchange Limited in Bangladesh, Journal of Economics and Finance, 7(5), 1-10.

[33] Huda, N., & Abdullah, M. N. (2013). Relationship between ownership structure and dividend policy: Empirical evidence from Chittagong Stock Exchange. Asian Business Research Conference, Dhaka, Bangladesh, 20-21 December.

[34] Ince,U., & Owers, J. (2012). The interaction of corporate dividend policy and capital structure decisions under differential tax regimes. Journal of Economics and Finance, 36(1), 33-57.

[35] Jensen, M. (1986). Agency Costs of Free Cash Flows, Corporate Finance and Takeovers. The American Economic Review, 76(2), 323-329.

[36] Kania, S, L., & Bacon, F. W. (2005). What factors motivate the corporate dividend decision? ASBBS E-Journal, 1(1), 97-107

[37] Kararach, G., Kadenge, P., & Guvheya, G. (2010). Currency reforms in Zimbabwe: An analysis of Possible Currency Regimes. The African Capacity Building Foundation, Occassional paper 10 (2010), 1-41.

[38] Kato, H.K., Loewenstein, U., & Tsay, W. (2002). Dividend policy, cash flow, and investment in Japan. Pacific-Basin Finance Journal, 10(4), 443-473.

[39] Khan, M, I, K., Meher, M, A, K, M., & Syed, S. M. K. (2013). Impact of Inflation on Dividend Policy: Synchronization of Capital Gain and Interest Rate. Pensee Journal, 75(11), 384-393

[40] Khan, N.U., Jehan, Q, U, A, S. & Shah, A. (2017). Impact of taxation on dividend policy: Evidence from Pakistan. Research in International Business and Finance, 42, 365-375.

[41] King'wara, R. (2015). Determinants of dividend payout ratios in Kenya. Research Journal of Finance and Accounting, 6(1), 48-51

[42] Kowerski, M., & Wypych, M. (2016). Ownership Structure and Dividend Strategy of Public Companies. Evidence from Poland. Barometr Regionalny. Analizy i Prognozy, 14(4), 179-192.

[43] Lahiri, P., & Chakraborty, I. (2014). Explaining dividend gap between R&D and non-R&D Indian companies in the post-reform period. Research in International Business and Finance, 30, 268-283.

[44] Lintner, J. (1956). Distribution of incomes of corporations among dividends, retained earnings, and taxes. American Economic Review, 46(2), 97-113.

[45] Lintner, J. (1962). Dividends, Earnings, Leverage, Stock Prices and the supply of Capital to Corporations. Review of Economics and Statistics, 44, 243-269.

[46] Mambo, M. (2012). Relationship between inflation and dividend payout for companies listed at the Nairobi Securities Exchange. (Masters Thesis). University of Nairobi

[47] Mandizha, B. (2014). Inflation and Exchange Rate Depreciation: A Granger Causality Test at the Naissance of Zimbabwe's Infamous Hyperinflation (2001-2005). Economics and Finance Review, 3(9), 22-42.

[48] Mehrani, S., Moradi, M., & Eskandar, H. (2011). Ownership structure and dividend policy: Evidence from Iran. African Journal of Business Management, 5(17), 7516-7525.

[49] Mirbagherijam, M. (2014). Asymmetric Effect of Inflation on Dividend Policy of Iran's Stock Market', International Journal of Academic Research in Business and Social Sciences, 4(2), 337-350.

[50] Modigliani, F., & Miller, M. (1961). Dividend Policy, Growth, and the Valuation of Shares. Journal of Business, 34 (1961), 411-433

[51] Morck, R., & Yeung, B. (2005). Dividend taxation and corporate governance. Journal of Economic Perspectives, 19(3),163-180.

[52] Morck, R., Shleifer, A., & Vishny, R. W. (1988). Management ownership and market valuation: An empirical analysis. Journal of financial Economics, 20, 293-315.

[53] Mutenheri, E. (2003). The determinants of corporate financial policy in Zimbabwe: Empirical evidence from company data. PhD thesis. Loughborough University.

[54] Myers, S, C., & Majluf, N. S. (1984). Corporate Financing and Investment Decisions when Firms Have Information That Investors Do Not Have. Journal of Financial Economics, 13 (1984), 187-221.

[55] Myers, S. C. (1977). Determinants of Corporate Borrowing. Journal of Financial economics, 5(1977), 147-175.

[56] Nguyen, K, T., Le, V, T., Duong, T, T, A., & Hoang, T. N. (2013). Determinants of Dividends payments of Non-Financial Listed Companies in Ho Chi Mihn Stock Exchange. VNU Journal of Economics and Business, 29(5), 16-33.

[57] Njanike, K., Katsuro, P., & Mudzura, M. (2009). Factors Influencing the Zimbabwe Stock Exchange Performance (2002-2007). Annals of the University of Petrosani, Economics, 9(2), 161-172.

[58] Nor, M. I. (2012). The effects of dollarization on developing economies: Lessons from Somalia's informal sector. Academic Research International, 2(3), 591-597

[59] Pandey, I, M., & Bhat, R. (2004). Dividend behavior of Indian companies under monetary policy restrictions. Indian Institute of Management, Ahmedabad.

[60] Pesantes, R, V. P. (2005). Dollarization and price dynamics, (Doctoral thesis), Vanderbilt University.

[61] Rehman, A. & Takumi, H. (2012). Determinants of dividend payout ratio: Evidence from Karachi Stock Exchange (KSE). Journal of Contemporary Issues in Business Research, 1(1), 20-27.

[62] Reserve Bank of Zimbabwe (2019). Monetary Policy Statement. Available at: https://www.rbz.co.zw/documents/mps/mpsfeb2019.pdf [Accessed 17 March 2019]

[63] Rizqia, D, A., & Sumiati, S. A. (2013). Effect of Managerial Ownership, Financial Leverage, Profitability, Firm Size, and Investment Opportunity on Dividend Policy and Firm Value. Research Journal of Finance and Accounting, 4(11), 120-130.

[64] Saez, M., & Gutiérrez, M. (2015). Dividend policy with controlling shareholders. Theoretical Inquiries in Law, 16(1), 107-130.

[65] Seida, J. A. (2001). Evidence of tax-clientele-related trading following dividend increases. Journal of the American Taxation Association, 23(1), 1–21.

[66] Shleifer, A., & Vishny, R. W. (1986). Large Shareholders and Corporate Control. Journal of Political Economy, 94 (1986), 461-484.

[67] Sikwila, M. N. (2013). Dollarization and the Zimbabwe's Economy. Journal of Economics and Behavioral Studies, 5(6), 398-405.

[68] Thanatawee, Y. (2012). Ownership Structure and Dividend Policy: Evidence from Thailand. International Journal of Economics and Finance, 5(1), 121–132.

[69] ul Hassan, A., Tanveer, M., Siddique, M., & Mudasar, M. (2013). Tax shield and its impact on corporate dividend policy: evidence from Pakistani stock market. ibusiness, 5(04), 184-190.

[70] Uwuigbe, O, R. (2013). Determinants of Dividend Policy: A study of selected listed Firms in Nigeria. Manager Journal, 17, 107-119.

[71] World Bank (2017). The World Bank Data. Available at: http://data.worldbank.org/. [Accessed 10 October 2018).

[72] Zameer, H., Rasool, S., Iqbal, S., & Arshad, U. (2013). Determinants of dividend policy: A case of banking sector in Pakistan. Middle East Journal of Scientific Research, 18(3), 410-424.