Monetary Policy Rates and Dividend Policy of Deposit Money Banks in Nigeria: A Dynamic Fixed Effects Approach

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A B S T R A C T

This paper investigates the effects of monetary policy on dividend payout decisions of deposit money banks in Nigeria using the dynamic fixed effects model. The study covers from 2010 to 2019 and is based on a sample of listed banks in Nigeria. While dividend policy is proxied by dividend per share and dividend payout ratio, four monetary policy variables are examined: namely, monetary policy rate, treasury bills rate, interbank call rate and open buy back rate. We find that unobserved firm-specific factors are significant determinants of both dividend payout and dividend payout ratio. Our results also show that while none of the policy rates has a significant impact on dividend per share, only monetary policy rate is significantly related to dividend payout ratio. However, the impact of interbank call rate on dividend per share is significant at 10% level. We interpret the significance of monetary policy rate, whose coefficient is negatively signed, as suggesting that restrictive monetary policy increases both the cost of raising funds and the level of asymmetric information in the credit market, thereby forcing managers of these banks to reduce their payout ratio, which also has implication for corporate financing decisions.

Introduction

The question: "What determines the optimal dividend payout of a firm?" has continued to be an issue of concern for both managers and shareholders of banks as well as regulatory agencies. Furthermore, it is one of the most contested and well researched topics in the corporate finance literature. Theoretically, a

firm pursues an optimal payout level to minimize their cost of capital in line with the expectations of their shareholders. According to Dickens, et al. (2002), factors explaining the dividend payment behaviour of firms are important because firm value fundamentally depends on future dividends. In the context of banks, it is important to identify factors that determine dividend payments, since most of the banks pay dividends (Dickens, et al., 2002).According to Maury and Pajuste (2002) and Pandey and Bhat (2007), dividend payment behaviour of firms can be explained by several factors including agency problem and signaling effects. The agency model suggests that dividend payments are an effective way of reducing the agency conflict between shareholders and managers as paying high dividends forces managers to seek alternative source of funding via the capital market (Easterbrook, 1984; Jensen, 1986; Jensen & Meckling, 1976). This corporate action attracts institutional investors who have the huge resources required to effectively monitor the corporate activities and the governance structure of the firm (Allen, et al., 2000; Manos, 2002). The main principle behind the signaling theory, which is based on the information asymmetry between managers and shareholders is that, dividend payments serve as signal about the earning prospects of the firm, which is not contained in the firm's financial reports and other disclosures (Bhattacharya, 1979; Miller & Rock, 1989). Hence, higher dividend payments would signal to outsiders that the managers' goals are consistent with the shareholders' expectations. Empirically, several studies have investigated the factors influencing dividend payments both in developed and developing countries. However, an extensive review of the literature shows that there are limited studies on the impact of monetary policy on dividend payment behaviour, especially in the context of banks and other financial firms in developing countries. The few studies (for example, Abdulkadir, et al. (2016), Akani and Sweneme (2017), Cohen, et al. (2019), Misra (2015), Mohsin and Ashraf (2011), Mundati (2013), Pandey and Bhat (2007), and Ting-Yu and Wen-Bin (2020)) in this regard reported mixed findings, hence, providing motivation for more empirical research.

This study contributes to the ongoing discussion on dividend policy by examining the effect of monetary policy on dividend payment behaviour of deposit money banks in Nigeria using the dynamic fixed effects method. Specifically, we examine four key policy variables: namely, monetary policy rate, treasury bills rate, interbank call rate and open buy back rate, in terms of their relative and collective impacts on both dividend per share and dividend payout ratio, focusing on banks that consecutively paid dividends or announced their payout decisions over the period from 2010 to 2019. The chosen 10years period allows us to incorporate the dynamic behaviour of banks in response to changes in monetary policy and the resulting impact on dividend payouts.

The remaining part of this paper is arranged as follows. The next section reviews the existing literature on the determinants of dividend policy. Section 3 describes the data and methods used for empirical analysis. Section 4 contains empirical analysis. Section 5 summaries and concludes the study.

Literature Review

Studies in Africa and Other Countries

In India, Pandey and Bhat (2007) use the dynamic panel GMM estimator to analyze the impact of monetary restriction on dividend decisions of firms in the manufacturing sector. Their sample includes 3,997 observations obtained from 571 firms spanning from 1989 to 1997. Their finding indicates that dividend behaviour of Indian firms is significantly affected by restricted monetary policies and such policies lead to higher asymmetric information in the credit market which force firms to reduce their dividend payout.

Mohsin and Ashraf (2011) use the Lintner's modified model to study the impact of restricted monetary policy on dividend decisions of Pakistani firms from 2001 to 2009. Their sample includes 100 listed non-

financial firms. They find, among other things, that restrictive monetary policy has no significant impact on dividend policy.

In Kenya, Mundati (2013) considers the impact of macroeconomic factors on divided payout of firms listed in the Nairobi stock exchange from 2002 to 2012. The results show that exchange rate, inflation, money supply and interest rate all have a positive relationship with dividend payout ratio. However, only the effect of money supply is confirmed to be significant.

Misra (2015) examine the effects of firm-specific factors and macroeconomic variables on dividend policy of Indian banks using the panel fixed effects method. The data for empirical analysis were collected from 121 listed banks from 1999 to 2011. They find evidence that dividend payout ratio is determined by economic growth rate and firm-specific variables such as return on assets and deposit to asset ratio. However, real interest rate and financial crisis both have no effect on dividend payout ratio. Further, there is evidence that dividend rate (the ratio of dividend per share to face value of shares) does not depend on any of the considered variables. The study also confirms, using the Hausman tests, that unobserved firm-specific factors also play a significant role in determining the dividend payout of the selected banks.

Cohen, et al. (2019) examine the effects of ECB's monetary policies on both leverage and dividend decisions of nonfinancial firms in the Economic and Monetary Union. The study is based on data collected from 62 large-cap nonfinancial firms that are listed on leading stock markets in Germany, Italy, France and Spain for the period from 2000 to 2017. Their results show that ECB's monetary policies significantly affected leverage and dividend decisions of nonfinancial firms in the EMU.

In Vietnam, Tran, et al. (2019) employs both Tobit and Logit regression models to investigate the effect of monetary policy on dividend policy of nonfinancial firms. Their analysis is based on panel data obtained from 751 firms from 2008 to 2017. They find that changes in money supply have significant effect on both the choice to pay dividend and dividend payout ratio. However, corporate cash hold plays an important role in the relationship between monetary policy and firms' dividend behaviour.

Ting-Yu and Wen-Bin (2020) investigate the extent to which monetary policy and micro financing constraints affect cash dividend payment for listed nonfinancial companies in Shanghai from 2008 to 2012. They find that restrictive monetary policy has a negative impact on dividend cash dividend payout.

In Zimbabwe, Mbulawa, et al. (2020) employs the panel OLS and GMM methods to examine the factors that influence dividend policy of a firm both under hyperinflation and under dollarization. The study is based on panel data collected from 30 listed firms from 2000 to 2016. They find that while dividend policy is significantly affected by inflation and money supply under dollarization, it responds only to inflation under hyperinflation. These findings hold controlling for firm-specific variables.

In US, Tran (2020) examines the impact of economic policy uncertainty on dividend policy of bank holding companies using quarterly data from 2000Q1 to 2015Q4. The evidence reported in the study shows that banks respond to economic policy uncertainty by reducing their dividend payouts. However, the results also show, among other things, that banks have more tendency to increase dividends when there is financial crisis than when the economy is normal.

In Indonesia, Silalahi, et al. (2021) examine the factors that influence the dividend decision of banks using the conventional panel regression models. There are 14 banks in their sample, while data on these banks are collected at annual interval from 2009 to 2018. They

find that the dividend payout of Indonesian banks responds to inflation and oil prices, controlling for

firm-specific factors such as credit risk and capital structure.

Recent Empirical Studies in Nigeria

Abdulkadir, et al. (2016) investigate the determinants of the propensity to pay dividend as well as the actual payout decisions using both the logistic regression and classical multiple regression models. The data used were obtained from 126 firms at annual frequency from 2003 to 2012. They find, among other things, that both the propensity to pay dividend and actual dividend payment respond significantly to changes in the CBN policy rate.

Akani and Sweneme (2017) examine the impact of macroeconomic variables on a firm's dividend policy in Nigeria using the dynamic time series models. Based on aggregated time series data collected from 1981 to 2014, they find that interest rate, oil prices, capital market development, financial sector development, money supply, exchange rate and economic growth all have significant effects on retention ratio. Hence, they conclude that macroeconomic conditions have significant impacts on dividend policy of firms in Nigeria.

Nwude and Agbo (2017) examine both the firm-specific and macroeconomic determinants of dividend policy of commercial banks in Nigeria using the panel OLS technique. Based on data collected from seven banks from 2001 to 2015, they find evidence suggesting, among other things, that inflation is a negative but not significant determinant of a dividend payment in commercial banks.

Oloruntoba (2020) investigates the factors that determine the dividend policy of a firm, focusing on Conglomerates that are listed on the Nigerian stock exchange from 2010 to 2018. The empirical analysis on data collected from six firms provides evidence that dividend policy of the selected firms are significantly affected by firm-specific factors and the effects of macroeconomic variables are also found to be significant.

Agbo (2020) investigates the impact of inflation and firm-specific variables on dividend payout of commercial banks in Nigeria using the OLS method. The study is based on a sample of seven listed banks covering from 2001 to 2015. The results show, among other things, that inflation has no significant relationship with dividend policy.

Methodology

Data and Variables

Our sample includes nine listed deposit money banks in Nigeria. The sampled banks, which are selected based on both data availability and consistency of dividend payments, include ACCESS, GTB, FCMB, UBA, FIDELITY, FBN, SITBC, STERLING and ZENITH. We collect our research data from two sources. First, the data on monetary policy were obtained from the CBN database. The monetary policy variables are monetary policy rate (MPR), treasury bills rate (TBR), interbank call rate (IBR) and open buy back rate (OBBR). Second, the data on dividend payout decision were collected from the annual reports and financial statements of the individual banks. The dividend policy variables are dividend per share (DPS) and dividend payout ratio (DPR). All data were collected at yearly frequency for the period of 10years from 2010 to 2019, while all empirical analysis is done in EViews 11.

Table 1 shows the pooled descriptive statistics for all the study variables. Figures 1 – 2 show the bank-level mean and standard deviation plots for dividend payout variables.

Table 1: Pooled descriptive statistics

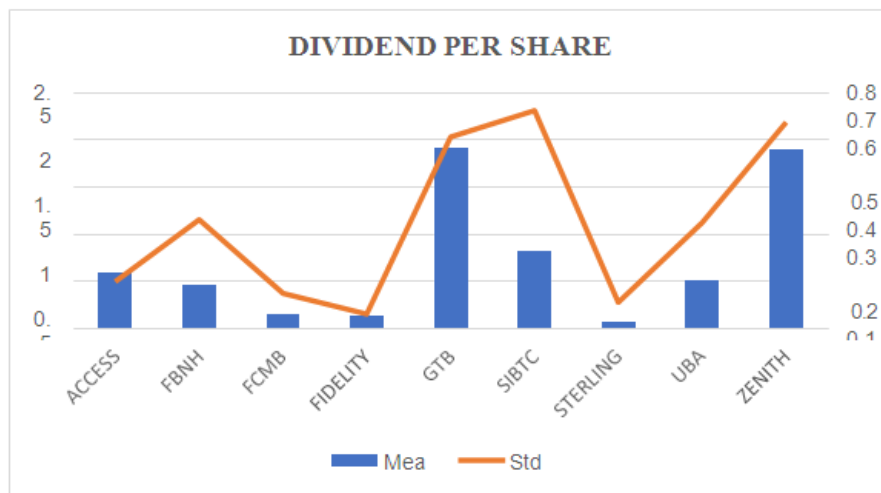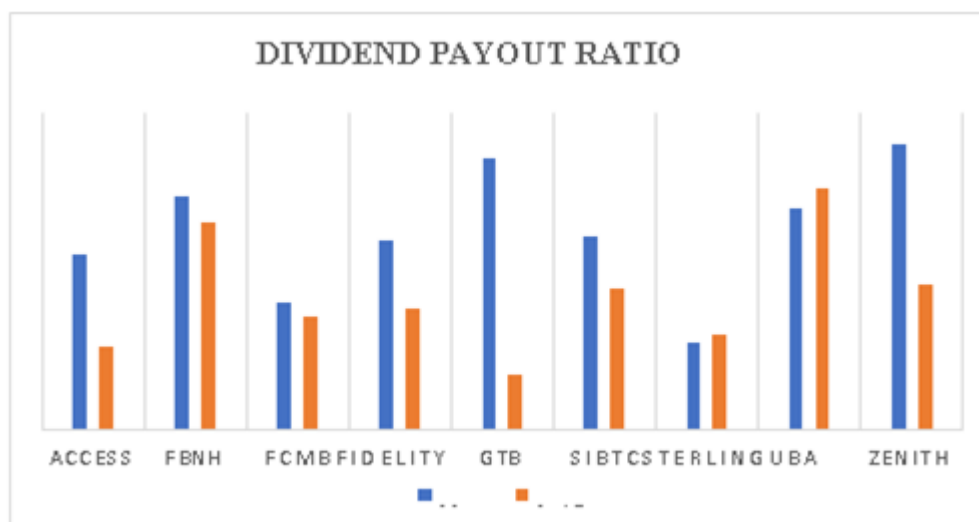| Variable	‾	Max			
DPS	0.730	2.800	0.796	1.290	3.709
DYO	37.90	166.6	27.39	1.703	8.746
MPR	12.17	14.00	2.226	-1.737	5.292
TBR	10.79	14.27	2.485	-0.820	3.227
IBR	11.76	24.30	7.084	0.408	2.351
OBB	10.92	22.94	6.950	0.505	2.248

Figure 1: Dividend Per Share

Figure 2: Dividend Payout

Ratio Empirical Strategy

Consistent with the study objectives, we specify our econometric models for the impact of monetary policy on dividend payout decisions as follows: (1)

For representing the number of banks in our sample, representing the number of time periods. Our

models allow dividend payout to depend on lagged values and the four policy variables (MPR, TBR, IBR and OBBR). The heterogeneity parameter , which represents the unobserved bank-specific characteristics such as management quality, is incorporated as an important explanatory variable in our dividend models. Hence, our models are dynamic fixed effects specifications. However, we employ the Likelihood ratio and the Hausman tests to validate our claim that the relationship between monetary policy and dividend payout decision of DMBs follows a dynamic fixed effects process.

Empirical Analysis

Table 2 shows the dynamic fixed effects results for the impact of monetary policy variables on dividend payout decisions. As we can see, the model fit statistics show that the dividend per share model -value = 0.0000)) has a better fit than the dividend payout ratio model value = 0.0310)), although, overall, both models are statistically significant. The Durbin-Watson statistic also shows that the DPS model has much less specification error resulting from serial correlation than the DPR model. Further, both the Likelihood ratio and Hausman specification tests are significant for the two models (though at different levels), hence validating our modeling assumption that unobserved bank-specific characteristics are important explanatory factors for dividend payout decisions of the selected banks. This has, therefore, confirmed that the specified dynamic fixed effects models are adequate for estimating the impact of monetary policy on dividend payout decisions of deposit money banks in Nigeria.

Table 2: Regression Results (Full Sample); ( ) contains p-values

		DPS	DPR
CONSTANT		-6.8118	11.202
		(0.0961)	(0.0078)
		0.2781	-0.0272
		(0.0329)	(0.8460)
		2.3628	-3.5956
		(0.1462)	(0.0225)
		0.2196	0.6271
		(0.6788)	(0.1781)
		-1.3288	0.5163
		(0.0984)	(0.4870)
		1.2577	-0.5203
		(0.1235)	(0.4828)
Wald		3.4118	9.7942
		(0.4914)	(0.0440)
	0.7319		0.3288
		0.6685	0.1701
-		11.552	2.0728
		(0.0000)	(0.0310)
- (DW)		2.0144	2.2299
Likelihood Ratio Tests		27.946	15.246

	(0.0000)	(0.0545)
Hausman Tests	26.867	13.598
	(0.0000)	(0.0184)

Past Dividend and Dividend Policy

The relationship between past dividend and current dividend can be evaluated in the context of the Lintner's model, which predicts a positive and significant relationship between the two variables. However, as Table 3 indicates, our results for the impact on lagged dividend are mixed both in terms of the sign of the coefficients and in terms of their significance. The coefficients of 0.2781 and -0.0272 show that controlling for monetary policy variables, a 1% increase in dividend per share would, on average, lead to approximately 0.28% increase in the next period's dividend per share, while dividend payout ratio would marginally reduce by about 0.03% in the next period following a 1% increase in its current value. This implies that while deposit money banks largely determine their current dividend payments based on Lintner's model, their target payout ratio does not follow that pattern.

Monetary Policy and Dividend Payout Decisions

We examine the impact of monetary policy variables such as monetary policy rate, treasury bills rate, interbank call rate and open buy back rate. Since banks are channels through which monetary policy affects the real economy, we expect that these policy rates would exert a highly significant impact on banks' dividend behaviour. Unfortunately, our results are mixed, but suggest that bank managers largely do not adjust their dividend models following the announcement of monetary policy stance. For DPS model, none of the estimated coefficients is significant at 5% level as indicated by the associated p-values. Also, as indicated by the Wald statistic (p-value = 0.4914), their joint impact is also not significant. This implies that dividend payments do not respond significantly to changes in the CBN policy and money market rates. However, at 10% level, interbank call rate (beta = -1.3288, p-value = 0.0984) is found to be significant, hence it has a negative but weak statistical impact on dividend per share, although, its coefficient is sizable. Also, while MPR, TBR and OBBR are all positively related to dividend per share, their individual impacts are not significant. These results are consistent with Mohsin and Ashraf (2011) and Misra (2015) but contradict Mundati (2013).

For DPR model, our results show that apart from the coefficient on MPR (beta = -3.5956, p- value = 0.0225), which is significant at 5% level, no other monetary policy variable is statistically significant. The insignificance of the betas for TBR, IBR and OBBR shows that changes in these money market rates do not affect the dividend payout ratio of banks. Hence, bank managers do not adjust their target payout ratio in response to changes in these money market variables. On the contrary, however, the negative sign associated with this coefficient shows that increase in monetary policy rate is associated with a decrease in dividend payout ratio. Also, as indicated by the Wald statistic (p-value = 0.0440), the joint impact of MPR, TBR, IBR and OBBR on payout ratio is significant at 5% level. This suggests that restrictive monetary policy increases both cost of funds and information asymmetry in the credit market, hence forcing banks to reduce their payout ratio. This implies that bank managers largely rely on internal equity (retained profit) to fund new investments during tight monetary policy. This result is consistent with Abdulkadir, et al. (2016), Akani and Sweneme (2017), Pandey and Bhat (2007), Ting-Yu and Wen-Bin (2020) and Tran, et al. (2019).

Summary and Conclusion

This paper investigates the effects of monetary policy on dividend payout decisions of deposit money banks in Nigeria using the dynamic fixed effects model. While dividend policy is proxied by dividend per share and dividend payout ratio, four monetary policy variables are examined: namely, monetary

policy rate, treasury bills rate, interbank call rate and open buy back rate. The study covers from 2010 to 2019 and is based on a sample of nine deposit money banks that are listed in the Nigerian stock exchange.

We find that at 5% level, none of the policy rates has a significant impact on dividend per share, while only monetary policy rate is significantly related to dividend payout ratio.

However, the impact of interbank call rate on dividend per share is significant at 10% level. The significance of monetary policy rate, whose coefficient is negatively signed, suggests that restrictive monetary policy increases both the cost of funds and the level of asymmetric information in the credit market, forcing bank managers to reduce their payout ratio. Hence, restrictive monetary policy leads to a reduction in the dividend payout ratio of deposit money banks, which also has implication for corporate financing decisions.

References

1. Abdulkadir, R. I., Abdullah, N. A. H., & Wong, W. C. (2016). Dividend payment behavior and its determinants: The Nigerian evidence. *African Development Review*, *28*(1), 53- 63.

2. Agbo, E. I. (2020). Nigerian perspective of dividend payout policy of banks. *International Journal in Management and Social Science, 8*(11), 32-59.

3. Akani, H. W., & Sweneme, Y. (2017). Macroeconomic aggregates and retention ratio of quoted firms in Nigeria. *Asian Finance & Banking Review*, *1*(1), 55-63.

4. Allen, F., Bernardo, A. E., & Welch, I. (2000). A theory of dividends based on tax clienteles.

5. *The journal of finance*, *55*(6), 2499-2536.

6. Cohen, L., Gómez-Puig, M., & Sosvilla-Rivero, S. (2019). Has the ECB's monetary policy prompted companies to invest, or pay dividends?. *Applied Economics*, 51(45), 4920- 4938.

7. Dickens, R. N., Casey, K. M., & Newman, J. A. (2002). Bank dividend policy: explanatory factors. *Quarterly journal of Business and Economics*, 41(1/2), 3-12.

8. Easterbrook, F. H. (1984). Two agency-cost explanations of dividends. *The American Economic Review*, *74*(4), 650-659.

9. Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review*, *76*(2), 323-329.

10. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

11. Manos, R. (2002). *Dividend policy and agency theory: evidence on Indian firms*. Manchester: Institute for Development Policy and Management, University of Manchester.

12. Maury, C. B., & Pajuste, A. (2002). Controlling shareholders, agency problems, and dividend policy in Finland. *LTA*, *1*(2), 15-45.

13. Mbulawa, S., Okurut, N. F., Ntsosa, M. M., & Sinha, N. (2020). Determinants of corporate dividend policy under hyperinflation and dollarization by firms in Zimbabwe. *Journal of Applied Finance and Banking*, *10*(2), 1-24.

14. Misra, S. D. (2015). Determinants of dividend policy: a study of the Indian banking sector.

15. *International Journal of Indian Culture and Business Management*, *11*(4), 440-456. Mohsin, H. M.,

& Ashraf, M. S. (2011). Monetary policy restriction and dividend behavior of Pakistani firms: An empirical analysis. (*MPRA No. 34052*), 1-23.

16. Mundati, Z. W. (2013). *The effects of macroeconomic variables on the dividend payout of firms listed at the Nairobi Securities Exchange* (Doctoral dissertation, University of Nairobi).

17. Nwude, E. C., & Agbo, E. I. (2017). Dividend Policy of Banks: The Nigerian Perspective. *International Journal of Economic Perspectives*, *11*(4), 330-351.

18. Oloruntoba, O. (2020). Determinants of dividend policy in quoted conglomerates in Nigeria. *Journal of Accounting and Management*, 3(1), 1-11.

19. Pandey, I. M., & Bhat, R. (2007). Dividend behaviour of Indian companies under monetary policy restrictions. *Managerial Finance*, 33(1), 14 – 25.

20. Ting-Yu, C. H. E. N., & Wen-Bin, B. A. O. (2020). The influence of macro monetary policy and micro financing constraints on cash dividend payment. *DEStech Transactions on Social Science, Education and Human Science*, (ICSSM), 257 – 261.

21. Tran, D. V. (2020). Economic policy uncertainty and bank dividend policy. *International Review of Economics*, 67, 339-361.

22. Tran, Q. T., Nguyen, X. M., Nguyen, T. H. A., Nguyen, T. M., & Truong, T. T. T. (2019).

23. Monetary loosening and dividend policy: evidence from Vietnamese stock market. *Asian Academy of Management Journal*, *24*(2), 95-115.

24. Silalahi, A. S., Khaira, A. F., Sianipar, A. S., & Effendi, K. A. (2021). Analysis of the Bank Specific Factors, Macroeconomics and Oil Price on Dividend Policy. *International Journal of Energy Economics and Policy*, *11*(2), 165.