



## RESEARCH ARTICLE

# Determinants of banks profitability: Do capital structure and dividend policy matters?

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## Abstract

In recent years, financial institutions, primarily commercial banks across Africa, have faced forceful mergers and acquisitions. These occurrences impede the level of financial inclusion and reduce public confidence in the financial system as a whole. This study assessed the determinants of private banks' profitability with the mediating role of capital structure and dividend policy as the mediating variables using the PLS-SEM; the results showed that capital structure has a significant and positive mediating effect on the profitability contrary to bankruptcy cost and pecking order theory and in line with empirical evidence. It was also found that dividend policy has a significant mediating effect on the profitability of private commercial banks in Ethiopia. Furthermore, asset size, asset tangibility, and liquidity have significantly influenced capital structure, dividend policy, and profitability of private commercial banks in Ethiopia. Therefore, the study concludes that capital structure and dividend policy significantly affect the profitability of private commercial banks. Thus, the study recommends that banks should implement efficient capital structure and dividend policies to safeguard profitability and long-term survival. Specifically, banks should appraise investment projects as well as capital structure, ensuring the quality of the bank's assets in the long term. Regarding dividend policy, banks should pay dividends to their shareholders because dividends are less risky than capital gains since they are more certain.

**Keywords:** Debt policy, Dividend policy, PLS-SEM, Pecking order theory and financial performance

## Introduction

The debt and dividend strategy, with its potential impact on corporate performance, is one of several major issues in the field of financial management. From this perspective, a company's management should determine the ideal level of debt, which may reduce the cost of financing and, as a result, increase the firm's value and shareholders' wealth (Frank & Goyal, 2009; Le & Phan, 2017). In order to do this, it is crucial for company management to be able to solve the problem of the ideal level of capital structure.

The literature contains a variety of viewpoints on capital structure. According to the perfect market-based Modigliani and Miller (1958) theorem, a bank's capital structure decision

has little impact on its overall value. Modigliani and Miller's first statement, however, may be implausible due to their presumptions of flawless capital markets, homogenous investor expectations, and a tax-free economy (Abdullah & Tursoy, 2019; Yao *et al.*, 2018). The disciplinary impact of debt on managers is the subject of more studies (Diamond & Rajan, 2000; Hart & Moore, 1995). Expanding capital may thus lead to management losing their focus, which would lead to subpar performance. Thirdly, according to Diamond (1984), an ideal debt policy lessens moral hazard between owners and debt holders. On the other hand, monitoring is expensive; therefore, banks need incentives to perform it on behalf of their debtors. According to this hypothesis, higher capital levels strengthen the banks' incentives to monitor their debtors because shareholders will stand to gain more from asset payouts and endure greater losses in the event of failure.

One of the most crucial financial choices that can impact a company's financial performance, along with its debt policy, is dividend policy. Dividends are also seen as a crucial component of the self-financing process and company investment decisions, particularly when those decisions are based on the cash flow from operations and the potential impact they may have on the investment opportunities available to companies (Raed, 2020). It is often argued that firms seldom prefer a sustainable accumulation of funds to

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executing a constant dividend payment, partially because excessive dividend payments are intuitively conceived as cash outflows, which may potentially increase the bankruptcy risk of firms, especially amidst a high level of economic uncertainty. Chae Ci *et al.* (2016), Solomon-Oke OO, and Ologunwa OP (2016), this trend, however, if not regulated, is expected to aggravate the agency problem, as financial theory has suggested. Atanda FA (2017), Brealey R, Myers S (2005), and Jensen MC, Meckling WH (1976). Henceforth, dividend payments are being employed by management to reduce agency conflict and act as a catalyst for boosting corporate performance Baker HK, *et al.* (1985); Baker H, Powell G (2000). As a result, efforts have been made to investigate the precise impact of dividend distribution on the corporate performance of organizations, although the literature is divided on the relationship between the two variables and how they affect one another Samuel K. A. (2011).

Upon review, Rao and Lakew (2012), Lelissa (2014), Hailu (2015), and Birru (2016) are the only studies that directly address the impact of capital structure on bank profitability in Ethiopia, to the best of the researcher's knowledge. Lelissa (2014) employed a panel data set and applied OLS estimation solely without taking into account the proper tests for the most popular panel data models, fixed and random effect models. On the other hand, Rao and Lakew (2012) use the capital adequacy ratio as a stand-in for banks' debt policy. However, it will be valuable to take into account debt ratios rather than capital adequacy measures to divide the components of the debt into the short-term and long-term (Sufian, 2011).

Additionally, research on the connection between dividend policy and financial performance discovered a strong positive correlation. Kanwal M, Hameed S (2017), Morrison JT, Fiiwe JL (2017), Murekefu TM (2012), Priya K, Nimalathasan B (2013), Timothy MM, Peter O (2012), and Uwuigbe U. *et al.* (2012). Osegbu IF *et al.* (2014), Raei R (2012), and Velnampy T (2014) observed an insignificant relationship, while Zhao X (2014) reported a study that found a negative correlation between dividend policy and the performance proxy. The fact that the studies were conducted throughout a variety of time periods and that most of them were conducted in other nations with very diverse economic conditions may be the cause of these empirical disagreements. Research was carried out among banks in Ethiopia by Ayalew Ali Abebe, (2022) on the effect of IFRS on the financial ratios: Evidence from banking sector in the emerging economy. Moreover, Abebe Zelalem B, Ali Abebe A (2022) studied on does intangible assets affect the financial performance and policy of commercial banks' in the emerging market?. Similarly, Bayelign Abebe Zelalem & Ayalew Ali Abebe (2022) studied on the Balance sheet and income statement effect on dividend policy of private

commercial banks in Ethiopia. Abebe, B., Ali, A. (2025) also studied on Linking globalization to commercial banks' performance in Ethiopia. The aforementioned studies carried out on banks in Ethiopia did not incorporate any mediating or moderating variables that influence the outcome variable. Furthermore, none of these studies identified the factors affecting bank profitability by utilizing capital structure and dividend policy as mediating variables. Additionally, neither of these studies combined capital structure and dividend policy to assess the size of their impact on the profitability of financial institutions, nor did they use latent variables to reflect debt and dividend policy in a structural equation model (SEM).

In order to determine the determinants of private commercial banks profitability with the mediating role of capital structure and dividend policy this study uses the partial least squared structural equation model (PLS-SEM), which employs statistical methods from path analysis. According to Nitzl (2016), SEMs provide flexibility for testing such models by enabling the use of numerous predictors and criterion variables, the construction of latent (unobservable) variables, the modeling of measurement errors for observed variables, and the testing of mediation and moderation interactions within a single model. This paper offers some recommendations for the regulation of the banking industry, especially the private commercial banks in Ethiopia, based on the empirical findings.

The purpose of this paper is to empirically assess the determinants of private commercial bank's profitability with the mediating role of capital structure and dividend policy in Ethiopia over the period 2016–2023 in order to address the gaps and limitations in the capital structure and dividend policy-related literature discussed earlier. The current study adds to the financial literature because it is the first of its type to examine the determinants of a private commercial bank's profitability with the mediating role of capital structure and dividend policy. As a result, this research was carried out with three important goals in mind. The first objective is to assess the determinants of private commercial bank's profitability in Ethiopia. The second objective of the study is to ascertain how the capital structure mediates the relationship between the determinants and profitability of private commercial banks. The final objective of the study is to ascertain the mediating role of dividend policy in the relationship between the determinants and profitability of Ethiopian private commercial banks.

### Theoretical literature review

The theoretical and empirical discussion on the role of capital structure on firms' value began after the "irrelevance propositions" of Modigliani and Miller (1958). While studies quoted the M&M model as irrelevant (Eckbo, 1986; Smith & Warner, 1979), probably due to unrealistic assumptions incorporated in their study, all argued that the MM's

pioneering propositions are novel and the catalyst for subsequent discussion, debates, and research in corporate finance. This is because the modern theory of debt policy and company performance demonstrated great improvement after the work of M&M (Myers, 2001). As Myers (2001) noted, the M&M propositions are commonly utilized as benchmarks in the debt policy-related literature. Additionally, a popular topic in corporate finance has been the theoretical justification for corporate dividends. One of the most significant publications on the subject was written by Miller and Modigliani in 1961. They argued that a company's dividend policy is irrelevant to whether or not its stock price increases. In other words, no single dividend payout policy, no matter how carefully management crafts the dividend policies of their companies, can maximize or reduce the value of their owners. The debt and dividend policy theories are as follows:

### ***Bankruptcy cost theory***

It suggests that businesses could raise their value by utilizing more debt in their capital mix if the tax benefit of debt financing is real. However, this line of reasoning doesn't specify how much debt will replace equity in those companies' financing plans. This causes the static trade-off or bankruptcy cost theory to arise as a new theory in the debt policy-related literature. Moderate debt ratios are preferred, per the trade-off theory. According to this idea, borrowing by businesses should be kept to a minimum where the marginal value of tax benefits for taking on more debt is barely outweighed by the rise in the potential costs of financial hardship (Myers, 2001). Miller (1977) also made an effort to illustrate the trade-off theory by using the personal capital gains tax as an offset to the tax advantages of debt. A trade-off between the tax benefit and the risk of bankruptcy as a result of debt financing is likely to occur as a result of bankruptcy costs or a financial crisis, which deters businesses from employing excessive debt (Barclay *et al.*, 1995).

### ***The agency cost theory***

Agency issues between managers and shareholders, as well as occasionally between shareholders and creditors, develop as a result of ownership and control separations for corporate-type businesses (Jensen & Meckling, 1976). Conflict between shareholders and managers results from the fact that managers have a right to a portion of the marginal increases in business value as a result of their investment choices therefore, managers are free to use shareholder funds for their purposes. On the other hand, debt financing reduces the amount of "free cash" available to managers because it requires the firm to send out regular cash payments to the borrowers (Harris & Raviv, 1991). One advantage of debt financing is that it eliminates the conflict of interest that exists between management and shareholders. Dividend payments and the use of debt

rather than stock, according to Barclay *et al.* (1995), minimize the agency cost of equity. Furthermore, debt incentivizes equity holders to invest their funds in high-risk projects less optimally, which creates a conflict of interest between shareholders and creditors (Harris & Raviv, 1991). As a result, the agency's cost of debt can be balanced against its tax benefit to create the ideal debt (Jensen & Meckling, 1976).

### ***The pecking order theory***

According to Myers' (1984) pecking order theory, companies prefer internal sources of funding and adjust their target dividend payout ratios to their investment opportunities over time, even though dividends and payout ratios gradually change to reflect changes in the size of profitable investment opportunities. In addition, according to Myers (1984), corporations are more inclined to issue the safest security first, which is debt, before moving on to possibly convertible debt and finally, equity if external financing is necessary. Pandey (2005) stated that managers always preferred to employ internal financing and would only turn to issuing shares as a last resort, agreeing with Myers' statement. Moreover, the pecking order theory was able to explain the negative inverse link between profitability and debt level ratio within an industry, but it was unable to adequately account for the variations in debt within industries. This approach encourages the use of a fund that is financed entirely internally.

### ***The irrelevance theory of dividends***

According to the irrelevance theory, a company's market value is determined by the discounted present value of future investment cash inflows. These income streams may be financed through future dividends, capital gains, or a mix of the two. Because of this, any earnings that aren't delivered right away will be kept as capital gains and released later. Investors who do not get dividends during the present period may generate their own dividends by selling their shares for a price equal to the dividends they would have received in a perfect world. These earnings are not subject to any additional taxes or transaction costs, and they have no impact on the stock's market price. According to this hypothesis, firm managers are unable to raise the value of their company by implementing a certain payout policy. In a nutshell, dividends have no value. For nearly six decades, one of the most respected theories in financial literature has been the irrelevance thesis of Miller and Modigliani (1961).

### ***Dividend signaling theory***

According to the dividend signaling theory, businesses use dividends to indicate that future free cash flow will be higher than expected. Suppose managers have insider knowledge about future or present cash flow. In that case, investors will interpret a current dividend increase (amplify) as a sign that management anticipates consistently higher (lower) levels of

free cash flow in the future. Good companies pay dividends to set themselves apart from bad ones that cannot afford to pay such a high price to copy good ones. S. Bhattacharya (1979), Miller and Rock (1985), and tariffs John and Williams (1985) claim that transaction expenses for outside financing are some of the priciest tools employed to reach a separate equilibrium.

According to Jensen and Meckling (1976), firms experience agency problems when ownership and control are divided, as is the case with publicly traded corporations that have dispersed stock ownership. Managers are enticed to invest more than their first-best optimal level in firms with high free cash flows or cash reserves. The empire-building or perk-prone characteristics of the managers' utility function are where the extra investment comes from. Increasing the dividend limits the issue of overinvestment and increases the value of the company by reducing the amount of free cash flow accessible to management. On the other hand, a dividend reduction increases the managers' cash on hand, aggravating the issue of overinvestment.

### ***Maturity theory of dividend***

Michael and Grullon (2002), Eugene F. Fama and French (1993), and DeAngelo *et al.* (1996) all put forth the maturity theory, which holds that as a corporation ages, its pool of investment opportunities contracts, lowering systemic risk. A positive market response to a dividend increase suggests that the company has advanced in its life cycle to a period of decreased profitability and risk. The maturity theory states that a dividend increase announcement will enhance stock prices because responses to news about systematic risk reduction outweigh responses to news about decreased future revenues.

Residual theory drives home the original importance given to productive investment possibilities. If there are viable business opportunities, the corporation invests in them, and any profits are distributed to shareholders. The phrase "residual theory of dividends" refers to a theory that contends that any money left over after exploring all feasible investment options should be distributed as a dividend. Because retained earnings are less expensive than fresh common stocks, they would be used to satisfy the equity requirement. New common shares will be issued if retained earnings are inadequate to cover this need. If the retention earnings that are currently available are higher than what is needed, the surplus will be distributed as dividends.

### ***Empirical literature review and hypothesis development***

#### ***Capital structure and banks profitability***

According to an empirical study, there is a heated argument over how the debt of a company affects its value (Modigliani and Miller, 1958). The M&M model has been challenged as

being out of date in several studies (Eckbo, 1986; Smith and Warner, 1979), which has led to false assumptions in their theory. However, the majority agreed that M&M's basic hypotheses are unique and the starting point for further discussion, disagreement, and research in corporate finance. The classical theory of debt and the performance of the firm advanced significantly as a result of M&M's efforts (Myers, 2001). As a result, the M&M hypotheses are frequently used as benchmarks in the analysis of debt (Myers, 2001). After that, M&M published a revision study in which they took corporate tax into account, changing one of their earlier research hypotheses in the process. In this way, they developed a novel theory of corporate finance that demonstrates that debt has incentives over equity due to its "tax shield advantage" (Modigliani and Miller, 1963). Then, in a study using the framework of US corporate enterprises, Miller (1977) addressed the impact of debt financing as opposed to equity on the development value of the firm by analyzing variations in the firm's value and corporate taxation as well as including the taxation effect of the financial gains in addition to corporation taxes.

According to Harris and Raviv (1991), a number of debt theories focused on changing the hypotheses of the earlier M&M model. The agency cost theory, for example, indicates contradictory effects of debt on profitability. When equity between shareholders and managers is taken into consideration, the outcome is favorable. However, agency conflict between shareholders and managers develops when a corporation has a separate ownership structure and controlling power, according to Jensen and Meckling (1976). The reason is that the management attempts to use shareholder money to further their objectives because they only owe a small percentage of the marginal gain (Ayalew, 2021). However, Harris and Raviv (1991) found that because the company must make regular payments to the bondholders to resolve the issue, debt financing reduced the amount of excess cash given to managers.

Siddik *et al.* (2017) empirically investigated the effects of debt on the performance of Bangladeshi banks as measured by ROE, ROAs, and earnings per share using the panel data of 22 banks for the years 2005 to 2014. The pooled ordinary least squares analysis's findings demonstrated that debt had an adverse impact on bank performance. A panel data regression model was used in another study by Amidu (2007) to look into the dynamics involved in determining the debt of Ghanaian banks. The study takes into account 19 banks that were granted licenses under the direction of the Bank of Ghana, the country's central bank, between 1998 and 2003. The regression analysis's findings showed that Ghanaian banks' short-term debt was shown to negatively influence their level of profitability, suggesting that successful banks were more likely to have lower levels of short-term debt on their balance sheets.



In the Ethiopian banking sector, little is known about debt as a factor influencing bank profitability in general and performance in particular. According to the best of the researcher's knowledge, Birru (2016) and Hailu (2015) were the first studies to attempt to evaluate the empirical relationship between debt and bank profitability for Ethiopian commercial banks. While the coefficient estimate for the debt ratio was found to be statistically insignificant, Birru (2016) attempted to investigate the impact of capital structure variables on the financial performance of commercial banks using a multiple regression model for the period of 2011 to 2015. They discovered a significantly negative relationship between bank profitability (ROA) and debt to equity as a measure of capital structure.

Using 12 years of data from eight commercial banks and panel fixed-effect models, Hailu (2015) also made an effort to determine the empirical relationships between capital structure and profitability in the Ethiopian banking sector. The results showed that while the deposit to total asset ratio had a statistically significant beneficial influence on the profitability of commercial banks' core business operations as evaluated by ROA and NIM, capital structure as measured by total debt to total assets had a statistically significant negative impact.

Additionally, Lelissa (2014) as well as Rao and Lakew (2012) investigated the factors that affect bank profitability. As an illustration, Lelissa (2014) found that the capital adequacy ratio and liquidity had a statistically insignificant effect on the profitability of banks, while some bank-specific factors (credit risk, income diversification, overhead cost management, and size), as well as inflation, had a statistically significant impact on the profitability variable (ROA).

- *H1*

Short-term debt has significant mediating effects on Ethiopia's private commercial banks' profitability.

- *H2*

Total debt has significant and mediating effect on the profitability of private commercial banks in Ethiopia.

- *H3*

Capital structure has significant effect on the profitability of private commercial banks in Ethiopia.

#### *Dividend policy and banks profitability*

There are numerous empirical studies explaining the relationship between dividend policy and performance. The main argument put forth by Morrison JT, Fiiwe JL (2017), Solomon-Oke (2016), Timothy MM (2012), Uwuigbe U, *et al.* (2012) is that dividend distribution and company performance are correlated. In addition, Ahmed (2015) argued that companies' dividend and financing policies have a big impact on how well they perform, regardless of whether or not they have growth potential. In Sri Lanka,

a study by Priya and Nimalathasan (2013) found that, with the exception of return on equity and return on investment, all performance ratios of a company are impacted by the dividend policies of certain hotels and restaurants. However, Velnampy *et al.* (2014) discovered a year later that there is no relationship between performance proxy and the factors determining dividend payout. After employing signaling theory and the Bird-in-the-Hand hypothesis as bases, Kajola *et al.* (2015) found a positive and substantial association between dividend policy and firm performance.

Khan *et al.* (2015) found a favorable and substantial correlation between performance measures and dividend policy using Pakistani enterprises from 2010 to 2015. Khan MN *et al.* (2016) showed in their own analysis that profitability had a negligible effect on influencing the firm's dividend policy. However, the authors also argued that while profitability would not immediately influence a company's ability to pay dividends, sustained underperformance would eventually have a detrimental impact on the dividend policy. Furthermore, Simon-Elmi MA and Muturi WM (2016) demonstrated how dividend policy continues to be influenced by powerful dynamic variables like ROI, EPS, and DPS, becoming a key factor in corporate performance. The relationship between financial performance and dividend policy of listed firms on the Nairobi Securities Exchange was considerable, according to Kimunduu *et al.* (2017), who published their study a year later.

Three particular Nigerian businesses, Nigerian Breweries Plc., Zenith Bank Nigeria Plc., and Guaranty Trust Bank Plc. were studied by Turakpe and Fiiwe (2017) between 2011 and 2015. The authors discovered that performance measures for Nigerian breweries positively correlated with dividend payout while earnings per share showed an inverse correlation; for Zenith Bank plc., earnings per share and return on earnings positively correlated with dividend payout; for Guaranty Trust Bank plc., profit after tax positively correlated with dividend payout; and for Guaranty Trust Bank plc., earnings per share and return on earnings negatively correlated with dividend payout. They claimed that they fit well with the principles of the relevant dividend hypothesis. It is interesting that the majority of these studies share issues with endogeneity, simultaneity, and omitted variables, which can be linked to the use of OLS, random effects, fixed effects, and multivariate regression, which results in greater one-sidedness. These biases are addressed in this work.

In their study, Kolawole, E. *et al.* (2018) found that dividend payment and retention ratios had a favorable or positive impact on EPS in Nigerian oil and gas enterprises. According to Kanwal, M., and Hameed, S. (2017), the dividend payout has a significant impact on a company's financial performance. According to Thirumagal, P.G., and Vasantha, S. (2018), the majority of Indian enterprises estimate a negative or pessimistic impact of dividend payouts on shareholders'

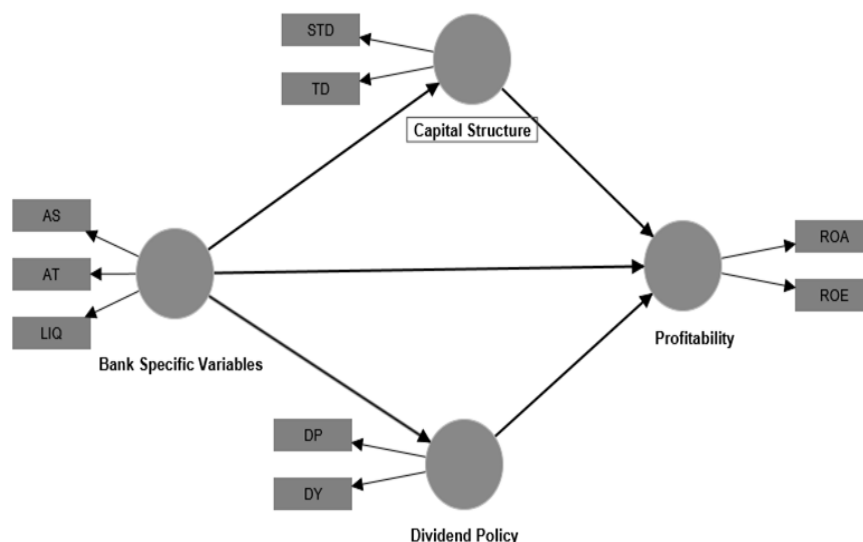


Figure 1: Conceptual framework  
Source: Owen design from SMART PLS 4

wealth. Between dividend announcements before and after, there was a significant variation in share price. According to Labhane & Mahakud (2016), the main factors influencing dividend policy for Indian companies include investment opportunity, financial leverage, company size, business risk, firm life cycle, profitability, tax, and liquidity. According to Abiola (2014), among other things, the company's profits from the current and previous fiscal years determine its dividend policy, demonstrating the importance of the firm's financial performance in determining its dividend policy.

- *H4*

Dividend policy has a significant positive effect on the Ethiopian private commercial banks' profitability.

- *H5*

Dividend policy significantly mediates the relationship between the determinants and profitability of private commercial banks in Ethiopia.

### Conceptual framework of the study

The link between the study's dependent and independent variables is depicted in Figure 1 below. The dependent variable used to determine how profitable commercial banks are in relation to their total assets is called return on asset (ROA). The dependent variable used to determine how well commercial banks are able to generate a return on their equity investments is called return on equity (ROE). Furthermore, short-term debt (STD) and total debt (TD) are utilized as latent variables to approximate capital structure, and dividend policy is approximated by dividend yield (DY) and dividend policy (DP) using latent variables. The figure also depicts the connection between the profitability of the bank and its capital structure and division policy.

## Research method

### Research approach and design

Explanatory research also known as "causal research design" was the method used in this study. In these investigations, the researcher is challenged by "cause-and-effect" issues, with the separation of such causes being the researcher's primary duty. Since the primary goal of the study is to assess the determinants of private commercial profitability with the mediating role of capital structure and divided policy in Ethiopia, it was determined that the explanatory study would be the most appropriate for the study.

### Data and sources

The annual report of private commercial banks in Ethiopia provided the information needed for the empirical investigation. From 2016 to 2023, the study tracked the private commercial banks in Ethiopia. Only banks for which data are accessible during the sample period are included to reduce the likelihood of biased outcomes. Out of a potential 30 private banks, the sample consists of 16 after missing values and partial data have been removed. Out of the 26 banks, 14 didn't have comprehensive data at the time of the study.

### Structural equation modeling

According to Bentler and Huang (2014), Bisbe and Malagueo (2015), Hair, Sarstedt, Pieper, Ringle, and Mena (2012), and Nitzl (2016), SEMs provide flexibility for testing such models by enabling the use of multiple predictors and criterion variables, the construction of latent (unobservable) variables, modeling measurement errors for observed variables, and testing mediation and moderation relationships in a single model. All reflected indicators are covered by SEM in a single

**Table 1:** Measurement of variables

| <i>Latent variables</i> | <i>Observed variables</i> | <i>Proxy</i>                            |
|-------------------------|---------------------------|-----------------------------------------|
| Moderating variables    |                           |                                         |
| Capital structure       | Short term debt           | Short term debt to total asset          |
|                         | Total debt                | Total debt to total asset               |
| Dividend policy         | Dividend yield            | Annual dividend paid to price per share |
|                         | Dividend policy           | Dividends paid to net income            |
| Profitability           | Return on asset           | Net income after tax to total asset     |
|                         | Return on equity          | Net income after tax to total equity    |
| Explanatory variables   | Asset tangibility         | Fixed asset to total asset              |
|                         | Asset size                | Log to total asset                      |
|                         | Liquidity                 | Current asset to current liability      |

**Table 2:** Reliability and validity of latent construct

| <i>Latent variables</i> | <i>Indicators</i> | <i>Loadings</i> | <i>Indicator reliability</i> | <i>STDEV</i> | <i>T-stats</i> | <i>P-values</i> | <i>Composite reliability</i> | <i>Average variance extracted (AVE)</i> |
|-------------------------|-------------------|-----------------|------------------------------|--------------|----------------|-----------------|------------------------------|-----------------------------------------|
| Profitability           | ROA               | 0.718           | 0.731                        | 0.418        | 2.26           | 0.024           | 0.896                        | 0.647                                   |
|                         | ROE               | 0.935           | 0.781                        | 1.499        | 2.09           | 0.036           | 0.980                        | 0.657                                   |
| Capital structure       | STD               | 0.376           | 0.678                        | 0.207        | 1.55           | 0.120           | 0.653                        | 0.552                                   |
|                         | TD                | 0.994           | 0.571                        | 0.181        | 1.37           | 0.171           | 0.712                        | 0.528                                   |
| Dividend policy         | DY                | 0.903           | 0.68                         | 0.845        | 0.95           | 0.341           | 0.802                        | 0.796                                   |
|                         | DP                | -0.698          | 0.512                        | 0.007        | 1.13           | 0.257           | 0.816                        | 0.521                                   |
| Bank specific variables | AS                | 0.832           | 0.687                        | 0.179        | 1.50           | 0.133           | 0.681                        | 0.644                                   |
|                         | AT                | 0.552           | 0.710                        | 0.055        | 1.83           | 0.067           | 0.601                        | 0.856                                   |
|                         | LIQ               | 0.835           | 0.636                        | 0.113        | 1.03           | 0.301           | 0.771                        | 0.610                                   |

construct. The two types of SEM employed in research are partial least squares structural equation modeling (PLS-SEM) and covariance-based structural equation modeling (CB-SEM). PLS-SEM has become more popular than CB-SEM due to theoretical and methodological concerns (Hair, Sarstedt, Ringle, & Mena, 2012; Ringle, Wende, & Becker, 2015). In accordance with Kumar and Sujit (2018), PLS-SEM effectively explains variance that predicts construct relationships, and this approach places more emphasis on maximizing the explained variance of endogenous latent variables than reproducing the theoretical covariance matrix. When dealing with extremely complex data, the PLS-SEM methodology comes in quite handy. Through composites, which are precise linear combinations of the indicators given to the latent variables, this methodology estimates latent variables (Nitzl, 2016).

In light of this, the profitability of private commercial banks in Ethiopia was investigated using the partial least-squares structural equation modeling (PLS-SEM) methodology. The PLS-SEM approach was chosen based on the idea that debt, dividend policy, and profitability are frequently latent and cannot be detected immediately because, using ratios, profitability cannot be quantified

directly until more than one profitability ratio is utilized. On the other hand, multiple variables are used to measure debt and dividend policy. Profitability, capital structure, and dividend policy are all latent variables according to this hypothesis. In order to use PLS-SEM, SMART-PLS software was employed since this method successfully manages nonlinear interactions.

### **Variables construction**

Capital structure, dividend policy, and profitability were used as latent variables in the study. Additionally, the moderating variables in the study were asset tangibility (AT), asset size (AS), and liquidity (LIQ). Table 1 below provides a summary of the study variables used in the empirical analysis of this study.

## **Result and discussion**

### **PLS- SEM results**

The stochastic multiple regression imputation technique is used as the first step in PLS-SEM to impute missing data. The reflecting measuring scales that make up the latent constructs are interchangeable and require a high degree of correlation. The loadings of all the variable indicators in the constructs are utilized for scale purification in the model's

**Table 3:** Correlation among latent variables

|                         | <i>Bank specific variables</i> | <i>Capital structure</i> | <i>Dividend policy</i> | <i>Profitability</i> |
|-------------------------|--------------------------------|--------------------------|------------------------|----------------------|
| Bank specific variables | <b>0.921</b>                   |                          |                        |                      |
| Capital structure       | 0.562                          | 0.843                    |                        |                      |
| Dividend policy         | 0.213                          | 0.366                    | <b>0.725</b>           |                      |
| Profitability           | 0.207                          | -0.450                   | -0.051                 | <b>0.763</b>         |

initial evaluation. Any indicator with a loading of less than 0.5 is removed from the model. This indicates that the indicator must be removed because it is unique from the others.

#### **Internal consistency reliability assessment**

The "Cronbach's alpha" is typically used to gauge internal consistency and reliability, but with PLS-SEM, it tends to give a conservative reading. Hair *et al.* (2012) claim that earlier literature has recommended using composite reliability as an alternative. In light of this context, Table 2 in the study presents the composite dependability. In exploratory research, the acceptable range for composite reliability values is 0.60 to 0.70, and in more advanced stages of study, 0.70 to 0.90. The latent variables are trustworthy, as evidenced by Table 2 composite reliability score, which ranges from 0.601 to 0.980 for the entire latent construct. The latent variables are kept in the model since the average variance extracted (AVE) value is larger than 0.5 and the construct qualified composite reliability test both pass. Once more, Table 2 displays the indicator reliability, which is essentially the loading square. It is clear that every indicator's reliability value is significantly higher than the lowest permissible level of 0.4 and very nearly at the desired level of 0.7.

#### **Convergent validity**

It is important to confirm the conceptual validity of each variable AVE, claims Wong (2013). Convergent validity is proven if all AVEs are higher than the cutoff of 0.5. All of

the AVEs in Table 2 are greater than 0.5, confirming the convergent validity.

#### **Discriminant validity**

According to Hair *et al.* (2012), cited in Kumar and Sujit (2018), discriminant validity attests to a construct measure's empirical distinctiveness and verifies that it captures relevant facts that other measures in an SEM do not. The Fornell-Larcker criterion, which states that the square root of AVE must be greater than the correlation between the construct and every other construct in the structural model, is illustrated in Table 3 below. The correlations between latent variables are shown in Table 3, along with the square root of the AVE for each latent variable. Each latent variable's AVEs may be found to be larger than the correlation of the latent variables, showing the latent variables' discriminant validity.

#### **Correlation matrix**

To evaluate the degree of correlation between the variables and investigate the likelihood of multi-collinearity among the repressors, the correlation matrix is shown. Additionally, it determines if the dependent variables and independent factors have a positive or negative connection. This is crucial because it demonstrates whether there is a connection between profitability, dividend policy, and debt metrics. According to Table 4 result, there is no multicollinearity and only a small amount of correlation among the repressors. The outcome demonstrates that all capital structure characteristics, dividend policy variables, and profitability are highly positively correlated.

#### **Results of the measurement model of PLS-SEM**

Numerous methods are used to estimate the path coefficient of the measurement model in order to guarantee the stability of the link between the latent variables. The use of exponential smoothing formulas is directly acknowledged in Kock (2014), which Kumar and Sujit (2018) cite as saying that this steady method yields estimates of the real standard errors that are consistent with those derived using bootstrapping. When the linear models are

**Table 4:** Correlation matrix

|     | AS    | AT     | DP     | DY     | LIQ    | ROA    | ROE    | STD   | TD    |
|-----|-------|--------|--------|--------|--------|--------|--------|-------|-------|
| AS  | 1.000 |        |        |        |        |        |        |       |       |
| AT  | 0.164 | 1.000  |        |        |        |        |        |       |       |
| DP  | 0.085 | -0.381 | 1.000  |        |        |        |        |       |       |
| DY  | 0.236 | 0.226  | -0.324 | 1.000  |        |        |        |       |       |
| LIQ | 0.630 | 0.178  | 0.003  | 0.249  | 1.000  |        |        |       |       |
| ROA | 0.106 | -0.124 | 0.087  | -0.063 | -0.215 | 1.000  |        |       |       |
| ROE | 0.065 | 0.101  | 0.218  | -0.122 | -0.008 | 0.425  | 1.000  |       |       |
| STD | 0.053 | -0.066 | 0.002  | 0.034  | 0.070  | -0.044 | 0.003  | 1.000 |       |
| TD  | 0.330 | 0.071  | 0.032  | 0.176  | 0.276  | -0.082 | -0.016 | 0.071 | 1.000 |



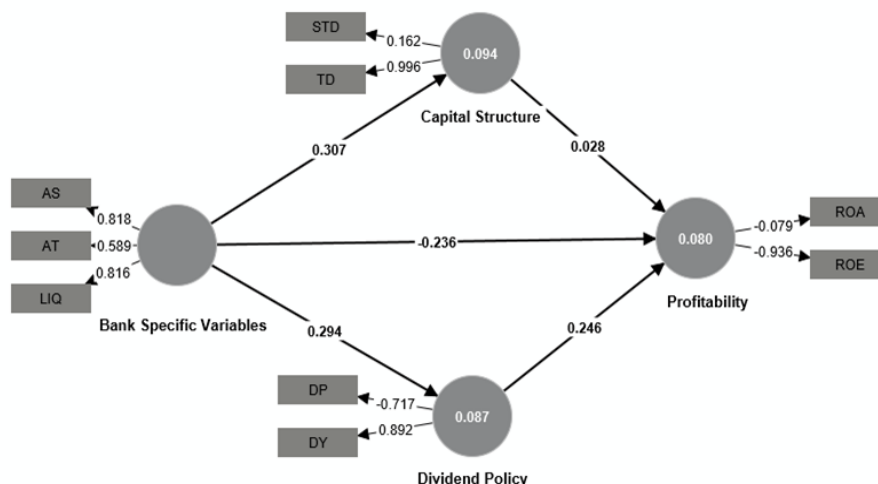


Figure 2: Result of linear bootstrapping path coefficient

Table 5: Structural path significance in bootstrapping

|                                           | Original sample (O) | Sample mean (M) | Standard deviation (STDEV) | T-statistics | p-value  |
|-------------------------------------------|---------------------|-----------------|----------------------------|--------------|----------|
| Bank specific variables→dividend          | 0.294               | 0.201           | 0.312                      | 3.96         | 0.000*** |
| Bank specific variables→capital structure | 0.307               | 0.221           | 0.123                      | 11.721       | 0.000*** |
| Bank specific variables→profitability     | -0.236              | -0.182          | 0.024                      | 1.165        | 0.014*** |
| Capital structure →profitability          | 0.028               | 0.0161          | 0.012                      | 2.212        | 0.000*** |
| Divided→profitability                     | 0.246               | 0.231           | 0.102                      | 1.621        | 0.000*** |

\*\*\* indicates that significant at 1 %

verified using PLS regression and robust path analysis, it has been demonstrated that this method produces more accurate estimates of the real standard errors. However, the significance and the  $R^2$  are shown in Figure 2. Both capital structure and dividend policy were found to account for 8.0 percent of the profitability of Ethiopia's private commercial banks by the model-wise dependent latent variable  $R^2$ . On the other hand, bank-specific factors account for 8.7 percent of the dividend policy and 9.4 percent of the capital structure. In other words, the variables chosen that are peculiar to banks are far better at explaining capital structure than dividend policy.

### Discussion of results

The discussion and analysis of the data in Figure 2 and Table 5 are presented in this section. The capital structure of the private commercial banks in Ethiopia exhibited a statistically significant positive link with their profitability, with a coefficient of 0.307 and a  $p$ -value of 0.000, according to the structural path significance in bootstrapping in Table 5. According to the considerably positive regression coefficient for the entire debt ratio, a larger debt position is thought to be profitable; the more debt, both long-term and short-term, the better. The results consistent with those of Anafo *et al.* (2015), Zafar *et al.* (2016), Abdullah and Tursoy (2019), and Anafo *et al.* (2015), but not with the finding of an insignificant connection made by Anarfo and Appiahene (2017).

The fact that there is a significant positive relationship between capital structure and financial performance may mean that short-term debt repayment obligations have been successfully used as a disciplinary tool to reduce managerial cash flow waste and mitigate the opportunistic behaviors of shareholders and managers (Grossman and Hart, 1982). Furthermore, the debt may have helped to lessen agency issues at the firm level, assisting in ensuring managers strive to achieve better financial performance through the best use of debts to maximize value for shareholders, which is the implication of the positive and significant relationship between capital and financial performance. This finding is consistent with the agency cost theory, which holds that high debt ratios can safeguard the interests of external equity investors by preventing shareholders and managers from acting opportunistically.

Again, from Table 5 and Figure 2, the dividend yield, which was measured by banks' dividend yield and dividend policy, revealed a statistically significant positive link with financial success. This suggests that a rise in the dividend policy of the private commercial banks leads to an increase in their financial performance. A unit increase in free cash flow was connected with a 0.294 unit increase in financial performance. Thus, corporations create additional returns for investors when they have enough free cash flows. With surplus free cash flows, firms can invest in profitable

investments (Dang *et al.*, 2021; Sondakh, 2019), which enhances profitability. By developing a good image for investors, the market value of enterprises appreciates, which in turn improves the market-to-book value. However, if some distributions are not provided to owners in the form of dividends, a simple increase in the level of free cash flows recorded by firms would not considerably translate into an increase in the value of owners' wealth (Farukh *et al.*, 2017). A corporation's dividend capacity makes dividend payments easier. Investors respond favorably when a company has the capacity to pay dividends, as evidenced by the frenzied buying of stock in companies with promising dividend payment prospects. More free cash flows will help reassure investors of a company's growth possibilities, and owners will see significant returns on their investment when money is managed effectively and efficiently.

The results validate the signaling and free cash flow theories, as well as the research of Ali (2022) and Dang *et al.* (2021). As a result, the analysis disproves hypothesis H1, which contends that there is no meaningful connection between a company's ability to pay dividends and its financial performance as measured by the Ghana Stock Exchange. The results of this study support Hasan *et al.*'s (2021) finding that financial crises have a negative impact on dividend payouts and firm performance, which is in contrast to Ali's (2022) finding that firms could maintain or increase their dividend payouts during a systemic risk era. According to Ofori-Sasu *et al.* (2017), enterprises maintain excess returns on owners' wealth and pursue activity development to generate additional funds (ROA) in order to avoid decreased performance during times of crisis. Additionally, Table 5 showed that the factors that are unique to banks asset size (AS), liquidity (LIQ), and asset tangibility (AT) significantly affect the capital structure and dividend policy in a favorable way. In this regard, these variables act as moderators of the effects of the capital structure and dividend policy on the profitability of Ethiopia's private commercial banks.

This implies that banks with big asset sizes (AS), liquidity (LIQ), and asset tangibility (AT) are likely to grow both their capital structures and their dividend policies, and they are highly likely to have an impact on their profitability. The analysis found a statistically significant positive link with a p value of 0.014 regarding the direct relationship between bank-specific characteristics and profitability. This result demonstrates that banks with greater liquidity can fulfill their contractual responsibilities. Furthermore, the positive impact of liquidity on financial performance suggests that private commercial banks in Ethiopia view liquidity as a safety net that will allow them to continue operating and fulfill their obligations when it is challenging for them to raise capital, when earnings are low, or when capital costs are extremely high. This finding also shows that private commercial banks with higher asset tangibility (AT) bring down the contention among chiefs and investors since

supervisors won't have a similar abundance of free money to use on inefficient ventures, and resource substantial quality likewise will, in general decrease the budgetary trouble costs in light of the liquidation plausibility if there should be an occurrence of default.

### Conclusions and policy implications

Using the novel SMART PLS methodology, this study investigated the impact of capital structure and dividend policy on the financial performance of private commercial banks. By concentrating on an emerging economy that undertook multiple financial sector reforms and clean-ups over the period of 2016–2019, the study adds to the body of work that aims to gather empirical data specifically for resolving the debt and dividend puzzle. To investigate the impact of capital structure and dividend policy on financial performance, the study used a PLS SEM model using data from the annual reports and financial statements of private commercial banks. According to the research, the capital structure of Ethiopian private commercial banks has a considerable and favorable impact on their financial performance. The positive impact of capital structure on private commercial banks in Ethiopia demonstrated that short-term debt repayment obligations have been successfully used as a disciplinary tool to reduce managerial cash flow waste and mitigate the opportunistic behaviors of shareholders and managers. The study also discovered that Ethiopian private commercial banks' financial performance is significantly and favorably impacted by their dividend policy. When money is managed correctly and efficiently, owners will see large returns on their investments thanks to the positive effect, which assures investors of the banks' growth potential. Finally, the study's findings showed that the profitability of Ethiopia's private commercial banks was significantly favorably influenced by the banks' unique factors, as evaluated by asset size (AS), asset tangibility (AT), and liquidity (LIQ). The study comes to the conclusion that the capital structure, dividend policy, and bank-specific characteristics have a substantial impact on the financial performance of private commercial banks in Ethiopia.

### Recommendations

Based on the study's findings, banks must put effective capital structure and dividend decision management procedures in place to protect the Ethiopian private commercial banks' financial performance. In addition to preserving bank assets and defending the interests of investors, this will also be advantageous to stockholders and the overall economy. Regarding the favorable correlation between capital structure and the financial performance of private commercial banks, banks should evaluate investment projects in addition to their capital structure to ensure the long-term quality of their assets. Regarding the dividend policy, it is advised that banks pay dividends

to their shareholders because research has shown a good association between dividend policy and profitability.

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