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An empirical Investigation of the Nexus between Disclosure level and Financial Performance on Ethiopian Commercial Banks: A Simultaneous Equations Approach

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ABSTRACT

The study aimed to examine the effect of disclosure on bank financial performance and the simultaneous relationship between them. To achieve the objective six-year secondary data was collected from seventeen Ethiopian commercial banks. To examine the effect of disclosure on financial performance and its simultaneous association with financial performance 3SLS (three-stage least square) regression was employed. The 3SLS estimation output indicated that financial disclosure has a significant effect on bank financial performance regardless of the proxies used to measure financial performance. Whereas social disclosure has a significant effect on return on equity and net interest margin. Regarding the simultaneous relationship between disclosure and financial performance; financial disclosure has a significant mutual association with all financial performance measures used in this study. However social disclosure level has a significant interdependent association only with net interest margin. From the estimation output bank managers can recommend that disclosure level and financial performance are interdependent variables that should be scrutinized to maximize their performance level.

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Introduction

The leaders of an organization need to evaluate and monitor the achievements of the targets they set from different perspectives such as operational and financial performance. Thus to confirm the sustainability and stability of their organization leaders strictly follow up and monitor their performance parameters with the help of other concerned sub-administrative bodies. Performance parameters such as return on asset, return on equity, and net interest margin are essential tools used in the banking industry to evaluate financial performance achievements. Firms with better performance are more likely to signify their achievement through adequate disclosure given via annual reports and other communication mechanisms.

Performance evaluation is a method of measuring a company's achievement based on the targets set earlier. It is a part of control measures that can help the company to improve its future performance while identifying the deficiencies of its operation throughout the financial year. To have a sound and appropriate performance; a measurement system is of utmost essential especially in today's borderless world to remain competitive and financially strong (Hameed et al., 2004).

The correlation between financial earnings and timely disclosures and disclosures in addition to annual reports has been widely recorded in the accounting literature (Quayes & Hasan, 2014). Miller, (2002) and Francis et al., (2008) have shown that earnings positively correlate with the level of a firm's disclosure. To ensure some legislative requirements and show compliance in recent periods firms are increasing their disclosure level. Better disclosure positively impacts a company's financial performance (Quayes & Hasan, 2014).

Tabash, (2019) stated that in the finance literature, several theories have discussed the roles and importance of disclosures given by banks. The agency theory states that there is a conflict of interests between the shareholders and the managers concerning the investment decisions of any corporation. This conflict of interest may negatively impact the corporation's image and value (M. C. Jensen & Meckling, 1976). Therefore, managers who are working in corporations should disclose all and full information about their investment decisions to the shareholders of the company (Healy et al., 1999).

From the perspective of another theory regarding the relationship between disclosure and the financial performance of corporations, the signaling theory states that managers have more information about the company's real value than others. So, they are benefiting from this information asymmetry to implement their interests. Therefore, this theory claims that managers have to disclose all relevant information from financial reports and statements to current and potential investors. Also, it states that managers who provide incorrect signals will be punished (Hughes, 1986). Furthermore, there are two theories "legitimacy theory" and "the stakeholders' theory". The legitimacy theory deals with the voluntary disclosure of all information about social, economic, and environmental issues related to society (Gray et al., 1995). The stakeholders' theory provides a demonstration of accountability to stakeholders. It stated that the company should disclose all its information to keep a good relationship with its stakeholders (Freeman, 1994).

Disclosure is how an entity communicates with the outside world (Chandra, 1974)Professors Chen and Lambert have reconsidered the re-search results reported in my paper (Chandra. Disclosure refers to the publication of any information relating to an organization, quantitative or qualitative, which simplifies the making of investment decisions (Frederick D. S. Choi, 1973). The American Accounting Association defines it as "the movement of information from private (i.e. inside information) to the public domain. It emerges from this definition that disclosure means reporting of a financial and non-financial aspect regarding the reporting entity to outsiders for their decision-making (Gupta, 2010).

Corporate disclosure represents the most complete picture of information provision by corporations to the external world. This includes financial information, narratives, the mandatory provision required by the law and accounting standards, and voluntarily shared insights due to external pressures or internal decision-making (Ali et al., 2007). Thus, corporate disclosure covers a large scope of information and addresses various details and dynamics for delivering such information (von Alberti-Alhtaybat et al., 2012).

The main aim of disclosure is "to communicate firm performance and governance to outside investors" (Healy & Palepu, 2001). This communication is not only called for by shareholders and investors to analyze the relevance of their investments but also by the other stakeholders, particularly for information about social and environmental policies. Therefore in this study, the researchers aim to investigate the association between disclosure level and financial performance as it is discussed by different finance theories such as agency, stakeholders, legitimacy, and signaling theory.

Literature Review

Disclosures and Bank Performance

Performance may be measured in terms of profit margin, rate or return on assets, or in terms of increase in the company's stock valuation. The correlation between financial earnings and timely disclosures has been widely recorded in the accounting literature (Quayes & Hasan, 2014). Miller, (2002) and Francis et al., (2008) have shown that earnings are positively associated with the level of a firm's disclosure.

The disclosure principle in Accounting requires that financial statements present the most useful amount of relevant information that is necessary to overcome misleading problems. The process of full disclosure has to do with ensuring the integrity of data in the rendering of reports to the supervisory authority and the public to enable them to ascertain the true financial position and performance of banks (Ayodele & Afolabi, 2018).

Financial information is essential in making sound investment decisions. The goal is to have financial information reporting that is timely and of value, so that investors will be able to use it in their investment decision process. A firm's financial disclosures should reduce the informational asymmetry problem between the firm's managers and investors. On the other hand, more information may not necessarily be better for investors if it is simply the result of increased complexity. Most of the existing literature advocates a positive association between the amount of information disclosure and firm performance. This is consistent with disclosure reducing informational asymmetry between investors and managers of the firm. (M. R. H. Jensen et al., 2006)the relationship between financial disclosure size and subsequent stock performance for all Standard and Poor's (S and P.

A study by Oino (2019), examines the impact of transparency and disclosure on the performance of financial institutions. The analysis result demonstrates that greater disclosure and transparency positively affect the financial performance of financial institutions. Specifically the result show that as the level of disclosure and transparency increases, the performance of financial institutions is increased.

Richardson & Welker (2001) assessed the association between financial and social disclosure and cost of capital for a sample of Canadian firms. They found that the quantity and quality of financial disclosure are negatively related to the cost of capital. However, contrary to their expectations, they found a significant positive association between social disclosures and the cost of equity capital.

Nobanee & Ellili (2021), investigated the extent of voluntary corporate disclosure and its effect on the performance of Islamic banking. In their result, they found that low level of voluntary disclosure in the Islamic banking sector of UAE. From the analysis, they confirm that voluntary disclosure does not affect bank performance significantly.

Similarly, Tabash (2019), examines the effects of level of disclosure on banks' performance. The result documented a significant relationship between performance and disclosure. Specifically the regression result indicates that banks with higher levels of disclosure lead to higher operating performance. Furthermore, performance has a great impact on the level of disclosure which means banks with high performance measures will disclose more information for investors and other institutions to reduce the costs and increase their values in the market.

Financial Disclosure, Social Disclosure, and Bank Performance

It has been demonstrated that increased financial disclosure has a positive impact on the performance of a company. A study by Quayes & Hasan, (2014), analyzes the relationship between financial disclosure and the financial performance of microfinance institutions (MFIs). They utilized the ordinary least squares method to analyze the impact of disclosure on financial performance. Their result indicated that better disclosure has a significant positive effect on the operational performance of MFIs; they also documented that improved financial performance results in better financial disclosure. However, the study conducted by Ofoegbu & Odoemelam (2018), documented that overall disclosure does not associated with the financial performance of the listed Nigerian firms.

Ayodele & Afolabi (2018), examined the impact of corporate financial disclosure on the performance of Nigerian Deposit Money banks. From the result they indicate that e financial disclosure has a significant influence on the banks' stability and performance. In conclusion they stated that the corporate disclosure of financial reporting practices by banks enable them to work towards improving and managing their non-performing loans effectively and efficiently for stability and better performance. Al-Sartawi (2018) and Musleh Alsartawi (2018), also documented a positive and significant relationship between financial disclosure and firm performance.

A study by Siueia et al.(2019), examined the effect of voluntary social disclosure on financial performance in the Sub-Saharan banking sector by comparing the top-ranked banks in Mozambique and the Republic of South Africa. Using panel data they regressed financial performance on corporate social responsibility disclosure and found a significant and positive relationship between financial performance and corporate social responsibility disclosure. Similarly, Platonova et al. (2018), investigated the relationship between corporate social disclosure and the financial performance of Islamic banks. In their result, they indicated that there is a significant positive relationship between social responsibility disclosure and the financial performance. They also confirmed a positive relationship between social disclosure and the future financial performance.

Najah & Jarboui (2013) investigate the impact of corporate social disclosure on a firm's financial performance. The results showed that there is no significant relation between social disclosure and financial performance, but a positive effect of time on this relation is determined when there is a lag of one year for the observations.

Habbash (2017) assessed the corporate social responsibility disclosure level and its potential influence on financial performance and firm value in an emerging country, Saudi Arabia. From the results he concluded that social disclosure level could improve both financial performance measured by ROA and firm value measured by Tobin's Q. Similarly, Thao & Le (2019) examined the relationship between corporate social disclosure and corporate financial performance on short-term and long-term profitability. Their result indicated that in the short run, there is no significant association between corporate social disclosure and corporate financial performance. However, in the long run, they found a positive significant relationship between corporate social disclosure and corporate financial performance. To get robust and more confirmatory estimation results in this research the researcher used three different financial performance measures return on asset (ROA), return on equity (ROE), and net interest margin (NIM) which differentiates the current study from the previous studies as most of them used only one financial performance indicator that is the return on asset (ROA).

Based on the discussion the following hypotheses were developed to test the effect of disclosures on financial performance in the Ethiopian Banking sector:

H1: Financial disclosure has a positive effect on return on asset (ROA) in the banking sector of Ethiopia.

H2: Financial disclosure has a positive effect on return on equity (ROE) in the banking sector of Ethiopia.

H3: Financial disclosure has a positive effect on net interest margin (NIM) in the banking sector of Ethiopia.

H4: Social disclosure has a positive effect on return on asset (ROA) in the banking sector of Ethiopia.

H5: Social disclosure has a positive effect on return on equity (ROE) in the banking sector of Ethiopia.

H6: Social disclosure has a positive effect on net interest margin (NIM) in the banking sector of Ethiopia.

In several previous disclosure studies, it has been confirmed that disclosure and financial performance have a mutual (interdependent) relationship.

For example, studies by (Al-ahdal et al., 2020; Quayes & Hasan, 2014; Tabash, 2019) found a significant interdependent relationship between disclosure and financial performance. Therefore, to test the simultaneity between disclosure and financial performance the following hypotheses were developed:

H7: Financial disclosure and return on asset (ROA) have a simultaneous endogenous (interdependent) relationship.

H8: Financial disclosure and return on equity (ROE) have a simultaneous endogenous (interdependent) relationship.

H9: Financial disclosure and net interest margin (NIM) have a simultaneous endogenous (interdependent) relationship.

H10: Social disclosure and return on asset (ROA) have a simultaneous endogenous (interdependent) relationship.

H11: Social disclosure and return on equity (ROE) have a simultaneous endogenous (interdependent) relationship.

H12: Social disclosure and net interest margin (NIM) have a simultaneous endogenous (interdependent) relationship.

Methods

Based on the nature of this study and the meaning of the research approach this study employed a quantitative research approach. Since this research focused on quantitative data and all the analysis was conducted based on statistical models the research approach used was quantitative. In this research, the purpose is to investigate the effect of disclosures (financial and social disclosure) on financial performance. Therefore to achieve the research objective explanatory research design was used. In this study, secondary data was used for the period of six years collected from seventeen commercial banks starting from the year 2016-17 to 2021-22. Data was collected starting 2016-17 because there was a radical change in the reporting and disclosure landscape in Ethiopia since the accounting and auditing board of Ethiopia declared IFRS as a mandatory adoption which requires much more disclosure requirements. The data was collected from the annual reports of respective commercial banks and the National Bank of Ethiopia.

Variable Measurement and Model Specification

Dependent Variable

In the study of bank performance several studies used return on asset (ROA), return on equity (ROE), and net interest margin (NIM) as a proxy for financial performance. In line with the previous studies see for example (Dewi & Monalisa, 2016; Quayes & Hasan, 2014; Siueia et al., 2019; Srairi, 2015; Tabash, 2019)an ordered probit model to investigate the possible effect of financial performance on disclosure and utilizes a three-stage least squares method to delineate the endogenous relationship between disclosure and financial performance of MFIs. Findings: The paper finds that better disclosure has a statistically significant positive impact on operational performance of MFIs; second, it also shows that improved financial performance results in better financial disclosure. Keeping the endogenous nature of the relationship between disclosure and performance, the paper uses a three-stage least squares method to show that disclosure and financial performance positively affect each other simultaneously. Research limitations/implications: The paper attempts to delineate a positive association between better disclosure on financial performance of MFIs, which can be used for developing a better disclosure policy by management, formulating more effective guidelines for disclosure by the stakeholders and mandating more appropriate laws and uniform disclosure practice by regulators. Originality/value: This is the first study that uses a large number of MFIs from 75 countries; second, it uses a uniform scale of designating a disclosure rating (assigned by MIX Market the dependent variable used in this study was financial performance using proxies such as ROA as measured by net profit divided by total asset, ROE as measured by net profit divided by total equity and NIM as measured by net interest (net of interest expense) divided by total interest-earning investments (cash reserves, treasury bills, investment in bonds and other financial assets and total loans and advances).

Independent and Control Variables

The independent variables used in this study are financial and social disclosure levels. The total disclosure index approach was used to measure both financial and social disclosure levels as it was developed by (Cooke, 1989) and consecutively used by (Albitar, 2015; Cooke, 1992; Haniffa & Cooke, 2002; Mbir et al., 2020). To measure the financial disclosure level six sub-items (General disclosure, statement of financial position disclosure, statement of profit and loss disclosure, statement of stockholders equity disclosure, statement of cash flow disclosure, and accounting policy and other disclosures) were used as adopted from KPMG international disclosure requirements. Similarly to measure social disclosure level six sub-items (community involvement and charity, human resources, business strategy and market relations, client relations, products, and environmental concern) were used as developed by Kundid and Rogošić (2011) and adopted from (Dropulić & Čular, 2019)such as long-term sustainability and profitability, yet only several research studies on CSR practices have thus far been conducted on the insurance sector. Hence, the purpose of this research is to determine the level of CSR reporting for insurance and reinsurance companies in Croatia and its impact on reporting quality. The empirical research is based on online reporting of six aspects of corporate social responsibility to determine Corporate Social Disclosure Index (CSDI. The control variables used in the study are age as measured by the number of years since the bank's establishment, size as measured by natural logarithms of total assets, leverage as measured by the ratio of total liabilities to total equity, liquidity as measured by the current asset to current liability ratio, board size as measured by number of board members, board diversity as measured by number of female board members, board independence as measured by percentage of non-executive board members, audit committee size as measured by number of audit committee members and audit committee independence as measured by the ratio of nonexecutive audit committee members. These control variables are used as they are recommended by literature and used by various previous studies such as (Almahrog et al., 2018; Mohammed Amidu, 2018; Naz et al., 2023; Ozili, 2021; Putra & Rujiman, 2023). Thus based on the above variable measurements the following models were specified.

Model Specification

To investigate the effect of disclosures on financial performance in the banking sector of Ethiopia; as stated above in the variable measurement section ROA, ROE, and NIM were used as a proxy for financial performance. Several studies (Quayes & Hasan, 2014; Tabash, 2019) argued that disclosure and performance have a mutual relationship, thus to examine the relationship between disclosure and financial performance employing a simultaneous equation approach is appropriate. Thus to achieve the objective and to deal with the interdependent relationship (simultaneous relationship) and endogeneity nature of disclosure and financial performance three-stage least square (3SLS) was used which is more advanced and efficient than 2SLS regarding the issue of error term correlations across a system of equations (Awaworyi Churchill, 2018). Then the following basic simultaneous equations were formulated as used by (Tabash, 2019) and (Al-Tuwaijri et al., 2004) with some modification

$$FP_{it} = \beta 0 + \beta 1FDI_{it} + \sum_{j,i=1}^{n} \beta jC_{it} + \varepsilon_{it} -------eq1$$

$$FDI_{it} = \beta 0 + \beta 1FP_{it} + \sum_{j,i=1}^{n} \beta jC_{it} + \varepsilon_{it} -------eq2$$

$$FP_{it} = \beta 0 + \beta 1SDI_{it} + \sum_{j,i=1}^{n} \beta jC_{it} + \varepsilon_{it} -------eq3$$

$$SDI_{it} = \beta 0 + \beta 1FP_{it} + \sum_{j,i=1}^{n} \beta jC_{it} + \varepsilon_{it} -------eq4$$

Where FP_{it} represents the financial performance of bank i at time t, FDIit represents the financial disclosure index of bank i at time t, SDIit represents the social disclosure index of firm i at time t, C denotes a vector of the control variables εit represents the error term, β0 is the intercept, β1and β2 are parameters of respective independent variables and βj is the parameter of j^{th} control variable.

Then from the above general simultaneous equations, the following specific equations were specified.

To examine the effect of disclosure (financial and social) on financial performance and its simultaneity with the financial performance, the following twelve simultaneous equations were developed using ROA, ROE, and NIM as a proxy for financial performance and financial disclosure and social disclosure as a proxy for disclosure.

$$FDI_{it} = \beta 0 + \beta 1ROA_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq5}$$

$$ROA_{it} = \beta 0 + \beta 1FDI_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq6}$$

$$FDI_{it} = \beta 0 + \beta 1ROE_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq7}$$

$$ROE_{it} = \beta 0 + \beta 1FDI_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq8}$$

$$FDI_{it} = \beta 0 + \beta 1NIM_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq9}$$

$$NIM_{it} = \beta 0 + \beta 1FDI_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq10}$$

$$ROA_{it} = \beta 0 + \beta 1SDI_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq11}$$

$$SDI_{it} = \beta 0 + \beta 1ROA_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq12}$$

$$ROE_{it} = \beta 0 + \beta 1SDI_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq13}$$

$$SDI_{it} = \beta 0 + \beta 1ROE_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq14}$$

$$NIM_{it} = \beta 0 + \beta 1SDI_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq15}$$

$$SDI_{it} = \beta 0 + \beta 1NIM_{it} + \beta 2AGE_{it} + \beta 3LOGASS_{it} + \beta 4LEVE_{it} + \beta 5LIQ_{it} + \beta 6BSIZE_{it} + \beta 7BIND_{it} + \beta 8BDV_{it} + \beta 9ACIND_{it} + \beta 10ACSIZE_{it} + \varepsilon_{it} \text{........eq16}$$

Where: FDI is financial disclosure index, SDI is social disclosure index, ROA is return on asset, ROE is return on equity, NIM is net interest margin, AGE is age of bank since establishment, LOGASS is logarithm of total asset used as proxy for bank size, LEVE is leverage ratio, LIQ is liquidity ratio, BSIZE is board size, BIND is board independence, BVD is board diversity, ACIND is audit committee independence, and ACSIZE is audit committee size.

Empirical Results and Discussion

Descriptive Statistics

Below in Table One shows the descriptive statistics (mean, standard deviation, max, and minimum) values of the variables included in the study. As indicated in the table the average value of return on asset (ROA) for Ethiopian commercial banks for the study period is 2.619 percent having a deviation of 0.806 with a maximum and minimum value of 4.817 percent and

0.326 percent respectively. Similarly, the table shows that return on equity (ROE) has a mean value of 20.19 percent with a standard deviation of 6.66 and minimum and maximum values of 2.5 percent and 47 percent respectively. The other financial performance measure used in this study was net interest margin (NIM) which has a mean value of 6.03 with a deviation of 1.493 and minimum and maximum values of 2.37 percent and 9.26 percent respectively. The mean financial disclosure (FDI) and social disclosure index (SDI) of Ethiopian commercial banks are 64% and 50.8% respectively. During the study period, Ethiopian commercial banks had an average age (AGE) of 14 years. The table also illustrates an average of 87% and 22% of the leverage (LEVE) and liquidity ratio (LIQ) respectively for commercial banks in Ethiopia. During the periods included in the study, the average number of board members (BSIZE) of Ethiopian commercial banks was 10 with an average board independence ratio (BIND) of 95.6%. The table also shows the average number of female board members (board diversity-BVD) which is approximately two. The mean audit committee independence ratio (ACIND) is 2.9%. Finally, the table shows the average number of audit committee members (ACSIZE) which is three.

Regression result

From Table Two in columns one, four, and seven the 3SLS regression output elucidated that financial disclosure has a significant positive effect on financial performance regardless of the proxies used to measure financial performance. In terms of significance level financial disclosure impacts return on asset and return on equity at a one percent level of significance, whereas it has a significant effect on net interest margin at a five percent level of significance. This result is consistent with the previous studies' results for example (A. M.A. M Al-Sartawi, 2018; Abdalmuttaleb M.A.Musleh Al-Sartawi & Reyad, 2019; Ayodele & Afolabi, 2018; Musleh Alsartawi, 2018; Quayes & Hasan, 2014; Tabash, 2019)an ordered probit model to investigate the possible effect of financial performance on disclosure and utilizes a three-stage least squares method to delineate the endogenous relationship between disclosure and financial performance of MFIs. Findings: The paper finds that better disclosure has a statistically significant positive impact on operational performance of MFIs; second, it also shows that improved financial performance results in better financial disclosure. Keeping the endogenous nature of the relationship between dis-

Table 1: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	102	2.619	.806	.326	4.817
ROE	102	20.199	6.668	2.5	47
NIM	102	6.031	1.493	2.377	9.26
FDI	102	.64	.143	.243	.822
SDI	102	.508	.079	.327	.727
AGE	102	14.382	9.234	5	51
LOGASS	102	4.403	.567	2.92	6.08
LEVE	102	87.169	3.845	77.813	95.226
LIQ	102	22.04	8.091	8.083	47.715
BSIZE	102	10.588	1.431	8	13
BIND	102	.956	.102	.083	1
BDV	102	1.814	1.533	0	7
ACIND	102	.029	.12	0	.571
ACSIZE	102	3.235	.997	2	7

Source : stata 2015

closure and performance, the paper uses a three-stage least squares method to show that disclosure and financial performance positively affect each other simultaneously. Research limitations/implications: The paper attempts to delineate a positive association between better disclosure on financial performance of MFIs, which can be used for developing a better disclosure policy by management, formulating more effective guidelines for disclosure by the stakeholders and mandating more appropriate laws and uniform disclosure practice by regulators. Originality/value: This is the first study that uses a large number of MFIs from 75 countries; second, it uses a uniform scale of designating a disclosure rating (assigned by MIX Market. Therefore from this result, we accept H1, H2, and H3 which state that *"financial disclosure has a positive effect on ROA, ROE, and NIM respectively."*

Further, the 3SLS results from Table Two in columns one, four, and seven show that social disclosure has a significant positive impact on financial performance at a one percent level of significance when financial performance is measured using net interest margin. However social disclosure has an insignificant association with financial performance using ROA and ROE as a proxy for financial performance and the result is not consistent with previous studies such as (Habbash, 2017; Najah & Jarboui, 2013; Platonova et al., 2018; Siueia et al., 2019; Thao & Le, 2019), this difference of result between the current study and previous similar studies might occur because of the low level of social disclosure index in Ethiopian commercial banks. It is also confirmed in a disclosure study by (Nobanee & Ellili, 2021); they conclude low-level disclosure has an insignificant effect on financial performance. Therefore it is observed that the regression output does not support H4 and H5 which states that "*social disclosure has a positive effect on ROA, ROE respectively,* whereas the result supports H6 which states *social disclosure has a positive effect on NIM.*"

As it is observed from columns two, five, and eight in Table Two; to account for the simultaneity and endogeneity between financial performance and financial disclosure, the financial disclosure model was estimated using three different financial performance proxies as endogenous variables. The result depicted that regardless of the proxies used to measure financial performance it has a significant positive association with financial disclosure level. Both return on asset and return on equity have a positive significant association with financial disclosure level at a one percent level of significance, whereas net interest margin has a significant positive association with financial disclosure level at a five percent level of significance. This result also confirms the previous similar studies by (Al-ahdal et al., 2020; Quayes & Hasan, 2014; Tabash, 2019). Thus the result supports H4, H5, and H6; which state that financial disclosure *has a simultaneous endogenous relationship with ROA*, *ROE*, and *NIM*.

Moreover to check the simultaneity between financial performance and social disclosure level the social disclosure level model was estimated using ROA, ROE, and NIM as endogenous variables. The result in Table Two in column nine illustrated that financial performance measured using NIM has a significant positive association with social disclosure at a one percent level of significance. Whereas in the same Table, the result columns three and six depicted that both ROA and ROE have no significant association with Social disclosure level. From these results, it is evidenced that H9 is supported however H7 and H8 do not support it.

Regarding the control variables included in the financial performance model in Table Two in columns one, four, and seven age has a significant adverse effect on financial performance when it is measured using net interest margin. Whereas age has no significant effect on financial performance when financial performance is measured using return on asset and return on equity. Size as measured by the logarithm of total assets has a significant positive effect on bank financial performance as it is measured by net interest margin, whereas it has no significant association with both return on asset and return on equity. The leverage ratio has a significant adverse effect on the return on an asset at one percent; whereas it has a significant positive effect on the return on equity at a ten percent level of significance. However, leverage has no significant effect on the net interest margin. Liquidity has a significant positive effect on return on asset and return on equity; however, it has a negative significant effect on net interest margin at a one percent level of significance. Board independence and audit committee independence have no significant effect on the financial performance of commercial banks in Ethiopia regardless of the proxies used in this study. Board size has a significant positive effect on financial performance when performance is measured by net interest margin. Whereas it has no significant effect on return on asset and return on equity. Board diversity has a negative significant effect on return on asset and net interest margin at a one percent level of significance and a ten percent level on return on equity. When we look at audit committee size it has a significant positive effect on return on asset at a ten percent level of significance whereas it has no significant effect on return on equity and net interest margin.

From the financial and social disclosure model in Table Two in column 2 and 3 we can observe that when financial performance is measured using return on asset and used as an endogenous variable in these models liquidity significantly and negatively influence both financial and social disclosure level at one percent level of significance and board diversity positively and significantly influence both financial disclosure and social disclosure at ten percent level of significance. Bank size negatively and significantly affects social disclosure at a ten percent level of significance, whereas board diversity positively and significantly affects social disclosure at a ten percent level of significance.

When financial performance is measured using return on equity and used as endogenous for both financial and social disclosure models in Table Two in columns 5 and 6 leverage and liquidity have a significant negative effect on financial disclosure at five and one percent level of significance respectively. Whereas in the social disclosure model, only liquidity has a significant negative effect on the social disclosure level at a one percent level of significance.

Finally when financial performance is measured using net interest margin and used as an endogenous variable in financial and social disclosure models in Table Two in columns 8 and 9, from independent variables included only leverage has a significant negative effect on financial disclosure level at a ten percent level of significance. And from the independent variables included in the social disclosure model bank age and board diversity have a significant positive effect on social disclosure level at a five and one percent level of significance respectively, whereas bank size and board size have a significant negative effect on social disclosure at one percent and ten percent level of significance respectively.

Conclusions and Suggestions

This study aimed to investigate the effect of disclosure levels on bank financial performance and the simultaneous relationship between them. To conduct this study six years of secondary data was used from seventeen banks starting from 2017 to 2022. The data was fully collected from the annual reports of banks and the National Bank of Ethiopia. Disclosure level was used as the independent variable and proxies by financial and social disclosure levels. Three different financial performance proxies (return on asset, return on equity, and net interest margin) were used with control variables of bank characteristics and governance mechanisms. To deal with the system of simultaneous equations and endogeneity between disclosure and financial performance 3SLS (three-stage least square) regression was used.

The 3SLS regression result illustrates that financial disclosure level has a significant positive effect on bank financial performance regardless of the proxies used to measure financial performance. Whereas social disclosure level has a significant positive effect on net interest margin and a significant negative effect on return on equity. However, the estimation output depicted that social disclosure level has no significant effect on return on assets.

To account for the simultaneous association between financial performance and disclosure, the result showed that return on asset and return on equity have a significant simultaneous relationship with financial disclosure but not with social disclosure. Whereas net interest margin has a significant positive simultaneous association with both financial and social disclosure levels.

From the estimation output bank managers can recommend that disclosure level and financial performance are interdependent variables that should be scrutinized to maximize their performance level. The limitation of this study is that it concentrates only on one industry which is the banking sector. Thus future researchers are recommended to undertake the same research across industries to compare the results and to find a variety of evidence across different industries. Further, it is commendable to future researchers to include some cultural factors (organizational and country level) that can affect disclosure level.

Table 2: 3SLS (Three-Stage Least Square) Estimation Output

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
VARIABLES	ROA	FDI	SDI	ROE	FDI	SDI	NIM	FDI	SDI
ROA		0.0848***	0.0141						
		(0.000)	(0.231)						
ROE					0.00721***	-0.00160			
					(0.00384)	(0.245)			
NIM								0.0314**	0.0237***
								(0.0305)	(0.00237)
FDI	1.739***			12.37***			1.451**		
	(0.000)			(0.00122)			(0.0278)		
SDI	0.330			-12.91*			3.240***		
	(0.686)			(0.0661)			(0.00780)		
AGE	-0.0107	0.00182	0.00115	0.133	0.000142	0.00125	-0.127***	0.00496	0.00395**
	(0.338)	(0.456)	(0.394)	(0.163)	(0.954)	(0.360)	(0)	(0.103)	(0.0163)
LOGASS	0.130	0.0709*	-0.0403*	0.699	0.0780*	-0.0326	1.412***	0.0511	-0.0695***
	(0.521)	(0.0988)	(0.0903)	(0.687)	(0.0721)	(0.171)	(0.000)	(0.284)	(0.00701)
LEVE	-0.0843***	-0.00300	0.000963	0.436*	-0.0140**	-4.16e-05	-0.0283	-0.0106*	0.000497
	(0.00131)	(0.619)	(0.774)	(0.0522)	(0.0141)	(0.989)	(0.467)	(0.0650)	(0.873)
LIQ	0.0453***	-0.00766***	-0.00503***	0.302***	-0.00681***	-0.00404***	-0.0833***	-0.00139	-0.00208
	(8.95e-06)	(0.000486)	(0.0000)	(0.000556)	(0.00217)	(0.000927)	(0.000)	(0.588)	(0.134)
BSIZE	0.0293	0.00324	-0.00744	-0.227	0.00690	-0.00700	0.141**	0.00256	-0.00988*
	(0.542)	(0.756)	(0.198)	(0.581)	(0.511)	(0.225)	(0.0482)	(0.811)	(0.0879)
BIND	-0.488	-0.0494	-0.0538	-6.612	-0.0572	-0.0750	-1.708	-0.0449	-0.0154
	(0.494)	(0.752)	(0.535)	(0.279)	(0.718)	(0.388)	(0.107)	(0.780)	(0.859)
BDV	-0.153***	0.0166*	0.00917*	-0.691*	0.00978	0.00600	-0.374***	0.0154	0.0154***
	(0.000240)	(0.0796)	(0.0820)	(0.0523)	(0.292)	(0.240)	(0.000)	(0.140)	(0.00638)
ACIND	-0.786	0.0600	-0.0620	1.782	-0.0291	-0.0695	-3.310	0.102	0.0109
	(0.622)	(0.864)	(0.749)	(0.896)	(0.934)	(0.720)	(0.162)	(0.777)	(0.955)
acsize	0.366*	-0.0469	0.00571	2.532	-0.0339	0.0139	0.259	-0.0268	0.00396
	(0.0523)	(0.261)	(0.805)	(0.116)	(0.418)	(0.545)	(0.354)	(0.522)	(0.861)
Constant	6.542***	0.642	0.756**	-29.03	1.597***	0.850***	3.701	1.179**	0.695**
	(0.00749)	(0.232)	(0.0113)	(0.166)	(0.00170)	(0.00234)	(0.308)	(0.0238)	(0.0138)
Observations	102	102	102	102	102	102	102	102	102
R-squared	0.460	0.181	0.202	0.428	0.178	0.202	0.657	0.177	0.204

pval in parentheses; *** p<0.01, ** p<0.05, * p<0.1

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