Board Committees and Performance in Microfinance Institutions: Evidence from Ethiopia [1]

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Abstract

This paper empirically relates subordinate board structures with improved financial and social performance in microfinance institutions (MFIs). The research question is analyzed using a panel data from 23 microfinance institutions in Ethiopia over a period of 2006—2011. Random effects panel data estimation is applied to analyze the link between board committees and MFI's performance. In MFIs with larger than average boards, the findings demonstrate significant ties between financial and outreach performance and how their boards are structured. The structure of board committees moderates the relation between board size and financial and outreach performance measures. Importantly, board committee benefits MFIs through better operational self-sufficiency, lower operating expenses, greater outreach to customers, and outreach to poorer customers using average loan size as our proxy. Practitioners within microfinance sector, and those operating in advisory and regulatory roles to the sector could benefit from the argument advanced in the paper in that normative recommendation to restructure boards or establish committees requires reevaluating the board characteristics vis-à-vis the optimal monitoring, controlling, and advising needs of the institution. Prior literature focuses on who sits on boards, how large are the boards, and how independent are they. This paper advances our understanding of the structure of board committees and how this may affect the performance of MFI. This approach provides better representation of director's role and is thereby a good test of board effectiveness.

Keywords — corporate governance, board committees, microfinance, Africa, Ethiopia

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1. Introduction

Are sub-committees in boards of Microfinance institutions (MFIs) beneficial? MFIs as hybrid organizations strive to be financially sustainable and at the same time, to reach as many low income customers as possible. Constraining trade-off between these two organizational logics (Hermes et al., 2011) renders governing MFIs tricky (Battilana & Dorado, 2010; Labie & Mersland, 2011). Governance is further identified as one of the main risk areas in microfinance industry (CSFI, 2012) thus, calls for more research on boards as among the governance mechanisms, have been issued (Labie & Mersland, 2011). This paper responds to these calls by studying the relationship between MFI performance and boards by examining the presence and types of board committees. This question has, as far as we know, not been studied before in the microfinance literature.

Microfinance is acclaimed for reversing conventional banking procedures by eliminating the need for collateral through a system that lies in informal systems of credit (Armendáriz & Morduch, 2004, 2005). It has demonstrated tremendous potential and growth to become World's biggest banking market in terms of customers served (Vanroose & D'Espallier, 2013; Mersland, 2013). Yet, after decades of strong support, the microfinance industry is under increasing pressure to ascertain its contribution in poverty alleviation (Hudon & Sandberg, 2013; Périlleux *et al.*, 2012; Copestake, 2007). Moreover, concerns include client over-indebtedness, inappropriate collection practices and high interest rates, resulting in researchers debating whether microfinance could actually end up having a negative effect for the clients (Schicks, 2013a, 2013b; Vogelgesang, 2003; Chen *et al.*, 2010; Morduch, 1999). Global expansion of commercial profit oriented MFIs and transformation in ownership of MFIs from NGOs to commercial banks have also reinvigorated this debate (D'Espallier *et al.,* 2017). Subsequently, stakeholders are demanding better accountability and responsibility from MFIs, making corporate governance a top priority.

As an important mechanism of governance, board of directors (boards) influence managerial discretion and behavior (Charreaux, 1997) and contributes to the acquisition of strategic knowledge and capabilities by promoting institutional learning (Apostolov, 2014; Zahra & Filatotchev, 2004; Fama & Jensen, 1983). Board effectiveness is influenced by its structure and inner working of its members (John & Senbet, 1998). Klein (1998) suggests that active participation of directors in different board committees is what makes the board effective. Laux and Laux (2009) noted that the main work on boards is done in committees. They further argue that when various board functions are delegated to different committee, it implies there is a separation of tasks and functions on boards.

Several researchers have responded to the call for more knowledge on the governance of MFIs. The core interest of these studies has been the effectiveness of the link between board characteristics and MFI performance—such as board structure (Mori *et al.*, 2013), board diversity (Hartarska, 2005; Hartarska & Mersland, 2012), board composition, CEO duality, and board size (Mersland & Strøm, 2009). These articles mostly look at how boards are structured and formed in terms of who sit on those boards, how large are the boards and how independent they are. None of these studies examine the functioning of those boards and whether organizing the board in committees has an influence on the MFI's performance.

We use data from Ethiopia, which we consider an advantage. A challenge in designing governance studies in MFIs is that these institutions are traditionally under high international influence (Mersland *et al.*, 2011). The formal governance system is therefore influenced and moderated by international actors that are often those that in practice control the MFI. Ethiopia in this case is different. While the microfinance sector in the country is large, it has been under little international influence and only Ethiopians are allowed as shareholders in MFIs. Moreover, most governance studies on MFIs are based on international data covering several countries and heterogeneous types of MFIs (e.g. Mersland & Strøm, 2009). Our study is different as it uses panel data covering 23 Ethiopian MFIs over the period of 2006 to 2011. The included MFIs

are all organized as shareholder companies and regulated by Ethiopian public banking authorities.

Controlling for endogeneity concerns, we find in MFIs with large boards that board committees favorably associate with performance. Accordingly, MFIs with large boards (denoting top 50% of MFIs in the sample) exhibit significantly better operational sustainability and lower expense ratio than their counterparts with small boards. These results suggest the use of board committees offsets the negative relation between larger boards and MFI performance. We interpret this finding to suggest that including committees is an operational approach to improve board effectiveness in larger boards. In MFIs with smaller boards the costs appear to outweigh the benefits of board committees. Our empirical analyses also suggest that the impact of board committees on performance is conditional on the committee types and directors' roles within these committees. Differentiating between monitoring and advisory committees, we find that significant impact on the financial performance of an MFI has advisory committees. In general, our analysis suggests that the performance implications of board committees are especially sensitive to the size of the board and the number of committees.

The article proceeds as follows: Section 2 reviews the relevant literature. Section 3 begins with overview of the development of microfinance in Ethiopia and Section 4 presents the data and methodology. Section 5 presents and discusses the results while Section 6 concludes.

2. Literature review

2.1 Boards and performance in MFIs

MFIs Boards serve two important functions for organizations which are monitoring the management on behalf of stakeholders and providing resources in terms of advice, counsel, link to other organizations and legitimacy (Apostolov, 2014). Following the

rise in demand for greater accountability and responsibility from organizations, governance done by boards has attained high importance among microfinance practitioners and policy makers (CSFI, 2012) as well as in the general banking sector (Manaseer *et al.*, 2012). The need for greater accountability has even been higher because of a series of events including unsustainable growth of the industry, transformation of MFIs in ownership, and the surge in commercialization coupled with high interest rates, over-indebtedness and hard-handed collection methods (Cull *et al.*, 2007; Bastiaensen & Marchetti, 2011). The crises in the industry in some parts of the world such as in India, Morocco, and Nicaragua due to rising debt stress among clients and unmanaged growth of microfinance have also revealed the potential of MFIs' services to harm clients (Gruérin *et al.*, 2015).

Optimal board structure in microfinance needs to address the unique challenges faced by MFIs. First, microfinance is a double-bottom line business that accommodate financial and social goals simultaneously (Hermes *et al.*, 2011; Battilana & Dorado, 2010). Adding to this is the diverse set of microfinance practices in terms of services offered, lending methodologies, ownership set-up, public regulation, and profit motives (Labie & Mersland, 2011; Mersland, 2009). What constitute a good board structure for a cooperative type of ownership may not be appropriate for NGO-MFIs or for MFIs owned by shareholders.

In addition, legal systems provide boards with fiduciary duty and sole responsibility to oversee important decisions (Levine, 2004; John & Senbet, 1998). In the face of challenges and complexity of this duty, Labie (2001) points out the need for MFIs to acquire directors who possess the integrity and competence required to discharge their responsibilities effectively. This implies that boards affect MFIs' performance, yet it is less apparent whether and how the functioning of the board improves performance (Christopher, 2010; John & Senbet, 1998; Klein, 1998).

Literature shows that microfinance boards comprise mostly of independent directors as well as some stakeholder representation such as employees, donors, investors, creditors,

and clients (Mori and Mersland, 2014). Some studies have attempted to link board structure and characteristics, such as size, independence, stakeholders' representation and microfinance performance. Hartarska (2005) finds evidence that boards with larger proportions of independent directors attain better return on asset (ROA) and social outreach. The study also shows that donor representatives on board improve outreach to poorer customers but worsen financial sustainability. This result contradicts that of Mori and Mersland (2014) who found donors to improve both outreach and sustainability. They further find creditors to be beneficial while employees to hamper MFI performance.

Mersland and Strøm (2009), using a global dataset find financial performance improves when the board has local rather than international directors and when it employs an internal board auditor. Hartarska and Mersland (2012) find that a larger board, up to nine members, is beneficial for MFI performance. Mori *et al.*, (2015) study the effect of board composition on the outreach performance of MFIs. They find that boards with independent, female, and international members achieve high outreach performance to the poor. All these studies mainly focus on board structure, composition, and other corporate governance mechanisms. So far, there is no study that has looked at the effect of committees in MFI boards.

Studies show board committees are related to firm performance. Klein (1998) finds evidences of positive relation between inside members' ratio on finance/investment committees and firm performance, and another study by Klein (2002) finds that audit committees are more effective in monitoring the financial accounting process of firms. Callen *et al.* (2003) study the effects of board committees in non-profit organizations. Their results provide evidence that the percentage of major donors on finance committee, which oversee budgets and administrative expenses, is negatively related to the organization's administrative expenses ratio. Given the hybrid and complex nature of MFIs, we argue that boards roles are effectively done through committees. This was also suggested by CMEF, (2012) where by committees of MFIs boards are argued to be the workhorses of organizations.

2.2 Hypotheses

The board of directors' function is to manage and control firms in achieving their mission and objectives. Some boards choose to delegate authority for specific tasks to subcommittees accountable to the board (Klein, 1998). Board committees assume different roles and responsibilities in institutions. Reeb and Upadhyay (2010) argue board committees function as a means of reducing communication and coordination problems and increasing observability of individual director's performance. Harrison (1987) also asserts that hierarchical boards can help mitigate problems associated with poor attendance of directors because these directors now have specific responsibility. Consequently, committees help in mitigating not only cost of communication but also problems of social loafing and freeriding (Klein, 1998). The specificity of responsibilities and identification of directors responsible for fulfillment of tasks, can improve board effectiveness. From the two broad board roles, committees can be grouped in advising committees which is grounded under resource dependence theory, and monitoring committees supported by agency theory. Commonly, auditing committee is created due to legal obligation. There is no legal obligation imposed on MFIs in Ethiopia to constitute board committees. Yet, the National Bank of Ethiopia as a regulatory agency actively encourage MFIs to setup board committees.

2.2.1 Advisory board committees

Hillman and Dalziel (2003) assert that boards are responsible for bringing resources to organizations. Resources are brought through advice, counsel, bolstering the public image of the organization, providing expertise, linking the organization to important stakeholders or other important entities, facilitating access to resources such as capital and aiding in the formulation of strategy or other important decisions. All these obligations are done effectively through committees because of their smallness in size and possibility to focus on specific tasks. While there are often no regulations or guidelines, many firms have one or more advice (sometimes called strategic) board

committees. In MFIs, these committees commonly include risk management, human resource management, fund raising, and executive committees (CMEF, 2012). These committees involve in advising, reviewing and approving long-term strategies, plans and policies of the MFI (Rock et al., 1998).

We argue that MFI's performance is linked to the directors' participation on the board's advice committees. The intuition behind this premise is straightforward: strategic and advice committees are setup specifically to address important issues potentially influencing the performance of the MFI. The committees are further established to assist the MFIs in meeting their dual objectives. Reeb and Upadhyay (2010) and Adams and Ferreira (2007) further point out that organizations where management is in greater need of advice, such as those with greater operational complexity, which should be the case of MFIs with hybrid objectives, managers are more willing to share information with board members. Therefore, we can test the linkages between these committees and the MFI's financial and social performance.

> **Hypothesis 1**: There is a positive association between the presence of board committees with advisory functions and MFIs performance.

2.2.2 Monitoring board committees

Monitoring committees are established to perform the oversight role of the board (Fama & Jensen, 1983). Monitoring board committees are particularly concerned with alleviating agency conflicts between shareholders and top management. Shareholders want managers to work in their best interests, that is, to maximize their wealth. Managers, in contrast, may maximize their own utility through the consumption of perquisites or the selection of suboptimal decisions. Such committees in MFIs monitoring committees constitute of audit, compliance, remuneration, finance and discipline committees (CMEF, 2012). Audit committee is responsible for monitoring the integrity of the organization`s financial statements and the performance of the internal audit function (Laux & Laux, 2009). In this regard, the committee may

regularly meet with the institution's external and internal auditors to review the MFI's financial statements, audit process, and internal accounting controls. This helps alleviate the agency problem by facilitating the timely release of less biased accounting information by managers to shareholders, creditors, donors, and so on, thus reducing the information asymmetry between insiders and outsiders.

The remuneration and compensation committee determines and reviews the nature and amount of all compensation for top management of the organization. It helps alleviate the agency problem by constructing and implementing incentive and bonus schemes designed better to align the goals between senior managers and shareholders.

If monitoring is effective then MFI performance should be positively related to the percentage of directors sitting on monitoring committees. We thus hypothesize that the presence of monitoring committees helps boards to become better monitors, a sentiment endorsed by former research (Klein, 1998; Reeb & Upadhyay, 2010).

> **Hypothesis 2**: There is a positive association between the presence of board committees with monitoring functions and MFI performance.

2.2.3 Board size and committees

Committees can be formed effectively when there are many board members. Reeb and Upadhyay (2010) suggest that the larger the board, the more committees it may want to have to ensure that all board members can serve on a committee in a meaningful way. We therefore argue that high number of committees can be of greater importance in MFIs with larger boards. Similarly, Mori and Mersland (2014) evidence various stakeholders to be on boards of MFIs. This is due to the nature of the microfinance industry. In this case, when there are different stakeholders sitting on board it may lead to a higher number of members. Thus, it is more beneficial to have them sitting on committees to effectively contribute to the MFIs. We therefore hypothesize that:

Hypothesis 3: The relationship between board committees and MFI performance is positively associated with board size.

3. The development of microfinance in Ethiopia

3.1 Macroeconomic and microfinance sector in Ethiopia

With a population of about 94.89 million in 2013, Ethiopia stands second to Nigeria among the African's most populated countries. The population is projected to trend around 112.59 million in 2020. According to the World Bank report, the GDP per capita of the country accounted for USD 502.15. By and large, the Ethiopian economy has ever been depend on agriculture. In 2011, the National Bank of Ethiopia (NBE) reports that the agricultural sector accounted for about 41% of GDP and it remains the largest employer and source of foreign currency. The contribution of industry accounted for 13.4 % while the remaining national output traces back to the service sector services share of 45.6%.

The poverty ratio of the country is 44.2%. Ethiopia ranks 170th out of 177 countries on the UN's Human Development Index. Uncontrolled population growth, environmental degradation, high unemployment, drought, low level of literacy, and limited access to resources are the causes of poverty in the country (Wolday, 2008).

Microfinance in Ethiopia has its origin as donor supported credit programme that was mainly delivered by international and local Non-Government Organizations (NGOs), government programs, and cooperatives. Since then microfinance industry in the country has been shown a qualitative and quantitative progress since 1990's. There are 29 licensed deposit taking MFIs serving about 3 million active clients in 2011. The total asset of the institutions, which was USD 29.57 millions at the end of 1997, has reached USD 670.59 milliosn as of 2012. Net loan grew from USD 21.42 millions to USD 426.9 millions, total saving grew from USD 4.6 millions to USD 250.88 and that of total

capital grew from USD 5.39 millions to USD 214.62 millions for the same period under consideration. The financial and operational sustainability of these MFIs have improved significantly in the last five years (Wolday, 2008). As per the reports of MFIs to NBE (as of December 31, 2007), 63% of the MFIs were profitable (Muluneh, 2008).

Despite the fast growth of microfinance in Ethiopia, the general outreach in the country is still in short supply meeting only 20% of the demand (Wolday, 2008). For most of the low-income population, poor farmers and micro and small enterprises, it has been felt that financial services are commonly characterized by high transaction costs for clients, commonly weak institutional base, weak governance and a nominal ownership structure as well as dependence on government and mother NGOs (Pfister *et al.*, 2008; Letenah, 2009). The financial products of the MFIs are largely supply driven and meagre flexibility to accommodate demands of the clients.

Appendix A presents an overview of the microfinance sector in terms of the number of clients, total assets, loan outstanding for the top 10 MFIs in Ethiopia.

3.2 Governance system in Ethiopian MFIs

Strong corporate governance is important in the market economy in protecting the interests of diversified stakeholders and enhancing investor confidence (Lattemann, 2014; Feng *et al.*, 2017). In Ethiopia, the legal framework of the corporate system and the overall standard of corporate governance are weak. The governance system in financial institutions is under strict supervision and control of the National Bank of Ethiopia. The Ethiopian company law does not have adequate legislative provisions on governance issues related to the separation of supervision and management responsibilities, and on the board composition, independence, and remuneration in share companies. Specifically, there is a major credibility problem in the Ethiopian financial institutions regulatory environment, since the regulatory rules are enforced discriminately between state and private institutions (Tura, 2012; Ayele, 2013).

3.2.1 Management and board structure of MFIs in Ethiopia

The directive enacted by the National Bank of Ethiopia (NBE) number MFI/03/96 specifies the qualification of competency required to be the chief executive officer and board directors. Accordingly, the minimum educational requirement for the chief executive officer is first degree in the field of social sciences or equivalent in relevant field. S/he also needs to have a minimum of three-year work experience in a senior position in a financial or related institution. Directors sitting on the board of MFI are expected to complete high school education and preferably possess some managerial experience with a minimum age of twenty-five years.

Albeit this regulatory framework, in reality board members did not have the right mix of professionals to guide an MFI and support management and it is only few MFIs who manage to acquire highly qualified CEOs that meet these criteria (Wolday, 2008). Further, as Frezer (2008) revealed, the fact that the competency requirement for the board members is lower than the CEOs, the board may not be able to oversee and control the activities of the manager.

3.2.2 Ownership structure of MFIs in Ethiopia

Under Proclamation No. 626/2009, it is required that MFIs should be established with strict observance of Article 304 of the Commercial Code Ethiopia (1960) which demands MFIs to be established as share companies owned by Ethiopian nationals. As defined under this Commercial Code, a share company is a company whose capital is fixed in advance and divided into shares and whose liabilities do the assets of the company only meet. Only members of a company may manage the company. A company shall have not less than three or more than twelve directors who shall form a board of directors.

Currently, the ownership structure of Ethiopian MFIs reveals that major shareholders in the sector include regional government, NGOs[2], clients[3], associations, and private individuals and other companies (Frezer, 2008). The findings of Frezer (2008) and Wolday (2008) indicate that microfinance in Ethiopia has not yet well attracted private and commercial capital. On the other hand, as noted by Wolday (2008), with few exceptions shareholders of Ethiopian MFIs are nominal shareholders who are not investing their own money in the institutions. These situations are observed to deteriorate governance quality and sustainable operations of the MFIs as nominal shareholders may not have sufficient interest to oversee the activities of the MFIs seriously (Frezer, 2008; Wolday, 2008).

3.2.3 Regulation and supervision of MFIs in Ethiopia

As part of the formal financial system of the country, MFIs are regulated and supervised by NBE. The revised proclamation enforces (No. 626/2009) provides legal framework that are deemed to protect small depositors, ensure integrity and stability, and promote efficient performance of the institutions (Yigrem, 2010). Subsequently, the NBE issued 19 directives that govern the operation of MFIs with details of rules for licensing, registering, and ongoing regulatory requirements. According to the Proclamation, any institution that needs to engage in microfinance activity should fulfil the following: obtain license from the National Bank of Ethiopia, established as a share company as defined under the Commercial Code of Ethiopia in which the capital is wholly owned by Ethiopian nationals or organizations wholly owned by Ethiopian nationals, and registered under the laws of, and having its head office in Ethiopia, and comply with the minimum capital requirement for establishing new MFI, which is Birr 200,000 (approximately equivalent to USD 26281.21 based on 1997 exchange rate).

Article 2 (10) and Article 3 of the Proclamation No. 626/2009 operationalize the purpose of MFIs and thus the business of microfinance as the provision of financial

[2] NGOs involved themselves as shareholders of the MFI.
[3] MFIs whereby majority of shareholders are clients of the MFIs itself.

services including collecting deposits and extending credit to rural and urban farmers and people engaged in other similar activities as well as micro and small scale rural and urban entrepreneurs. According to the Proclamation No. 626/2009 of the Federal Negarit Gazeta No. 33 (2009, pp. 4706-4707), MFIs in Ethiopia are authorized to engage in different activities. These activities include accepting both voluntary and compulsory savings; extending credit to rural and urban people; micro-insurance business; drawing and accepting drafts payable within Ethiopia; purchasing income-generating financial instruments; rendering managerial, marketing, technical and administrative advice to customers; providing local money transfer services; and providing financial leasing services.

The purpose and activity of MFIs specified in the proclamation allow MFIs the opportunity to offer a wide range of financial services to the unbanked poor. Yet, as it has been the case since 1996, this proclamation prohibits NGOs from directly engaging in microfinance service provision and it reserves the right of determining the maximum limit of loan amount to the NBE. Despite its limitations, the prudential regulation of MFIs in Ethiopia has reduced market distortions, improved entry into the microfinance industry, encouraged saving mobilization, and improved performance, transparency and trust of MFIs (Wolday, 2008; Yigerem, 2010).

4. Data and methods

4.1 Microfinance in Ethiopia: the context

Two decades ago, informal service providers and NGOs were dominating microfinance activities in Ethiopia (Wolday, 2008). With the purpose of tackling inefficiencies in the microfinance market, the Government of Ethiopia issued Proclamation No. 40/96 in 1996, which was then revised in 2009. The proclamation introduced legal framework that institutionalized the business of microfinance and entitled the National Bank of Ethiopia (NBE) the power and responsibility of licensing and supervising MFIs.

Unlike many other countries, microfinance is considered part of the financial sector, which imposes all MFIs in Ethiopia to operate as regulated institutions organized as shareholder companies and by default these institutions are considered as for-profits Shareholders Firms (SHFs). Thus, as shareholder companies the MFIs are established with strict observance of the Commercial Code of Ethiopia, which indicates that MFIs need to have between three and twelve persons in their boards of directors. By law, NGOs and COOPs are prohibited from directly engaging in microfinance service provision. Accordingly, all MFIs in Ethiopia are setup as shareholder firm ownership (SHFs) and considered as for-profit firms. Frezer (2008) and Wolday (2008) reveal that microfinance in Ethiopia has not yet attracted much private and commercial capital, thus, shareholders may not have sufficient interest to oversee the activities of the MFIs.

The microfinance industry is going through changing trends including commercialization, ownership transformation, increasing supervision and regulation, competition, and other ethical dilemma on interest rates (Ashta & Hudon, 2009). These trends make microfinance governance complex and its analysis needs consideration specificities at micro and macro levels. Most governance studies in general and MFIs in particular are based on international data covering several countries and heterogeneous types of MFIs (e.g. Mersland & Strøm, 2009). Thus, the literature would certainly benefit from case studies and country specific analysis to better understand the impact of governance on MFI performance. Ethiopia provides interesting research context. The microfinance sector in the country is large and it has been under little international influence that provides a relatively robust indigenous governance system that allows comparison of the result of this study with similar studies. While the results are based on small sample size from Ethiopia which may limit its external validity, this study is relevant because it provides a springboard for future studies.

4.2 Data and variables

In 2012, there were a total of 29 MFIs operating in Ethiopia. The study is based on a convenience sample of MFIs operating in Ethiopia based on accessibility and availability of data. Accordingly, we manage to acquire data from 23 MFIs to construct the panel dataset. Thus, the data used is a panel of all MFIs licensed and regulated by National Bank of Ethiopia in a six-year period from 2006 to 2011. This led to an unbalanced panel data of 129 MFI–year observations. The presence of missing information for some of the MFIs is considered random and it has reduced the number of observations in the econometric model.

For each of the six years, the relevant data were acquired from individual MFIs, reports of National Bank of Ethiopia, Association of Ethiopian Microfinance Institutions (AEMFI), and the MIX Market platform (www.mixmarket.org). Further, due to the unavailability of secondary data on some variables, surveys and semi-structured telephone interviews were conducted with designated officers of some MFIs and other important stakeholders.

Previous studies on Microfinance boards commonly use financial and social performances as dimensions of MFIs' performance (e.g. D'Espallier, Hudon, & Szafarz, 2013; Tchakoute-Tchuigoua, 2010; Mersland & Strøm, 2009). Similarly, our dependent variables are financial and social performance. Financial performance is examined using return on assets (ROA), operating expense ratio (OER), and operational self-sufficiency (OSS). ROA measures the extent to which total assets are used to generate returns. OER measure the efficiency of MFIs in managing cost of operations. Here the lower value is better than the higher value. OSS measures how well the MFIs can cover its expenses through its operating revenue. We also use two indicators of social performance—Ln (borrowers) examining the breadth of outreach and ALS (average loan size) measuring the depth of outreach.

The independent variables are number of committees, advisory committees and monitoring committees. Advisory committees are finance, investment, technology advisory, and employee development committees while monitoring committees, include audit, nominating, compensation committees, corporate governance, and executive committees (Klein, 1998). Consequently, we include a set of control variables. Table 1 gives definitions of all variables included on the study.

Corporate governance research suggests that the size and composition of the boards are important elements that determines the size and magnitude of firm performance. Several studies emphasize how number of directors on the board can also affect the cohesiveness and decision-making of the board, leading to substantial concerns about the ability of the board to advise and monitor the management (Reeb & Upadhyay, 2010; Mersland & Strøm, 2009; Yermack, 1996; Eisenberg *et al*., 1998). Mersland and Strøm (2009) suggest that larger boards in MFIs is negatively related to performance. We argue that board committees are used, among others, to moderate the coordination, communication, and free-riding problems that can occur with larger boards.

On the other hand, the performance effect of board committees is not straightforward and may introduce information asymmetries among directors (Reeb & Upadhyay, 2010; Kaczmarek & Nyuur, 2016; Chen & Wu, 2016). Therefore, firms with small boards will develop fewer subordinate structures (Reeb & Upadhyay, 2010). This argument indicates that board size moderates the effect of committees on MFI performance. Therefore, we use *Big board* dummy variable in our primary performance regressions to facilitate the use of this interaction term to explore the benefits and costs of committees. Big board is a proxy variable denoting MFIs' board size is larger than the median the number of directors on the board.

Board size is introduced in our regression models as a control variable to consider the extent to which the significant results may be the result of the interacting variables moving independently in parallel. We consider alternative specifications and statistical techniques as a robustness check. Specifically, we use OLS regressions and F-test for

the combined effect of the main variables (i.e., Number Committee; Number Advisory Committees; and Number Monitoring Committees) with the moderating variable (*Big board*). We find our results are robust to these alternative methods.

Table 1: Definition of variables

Variables	*Definitions*
Board committee structures	
Committee	Dummy: 1 if a board has at least one committee, otherwise 0.
Number committee	Number of board committees.
Monitoring committee	Number of monitoring committees.
Advisory committee	Number of committees other than monitoring committees.
Big board	Dummy: 1 if board size is larger than the median board size.
Financial performance	
ROA	*Return on assets:* operating income scaled by book value of total assets. It measures how well the MFI uses its total assets to generate returns.
OSS	*Operational self-sufficiency:* operating revenue scaled by financial and operating expenses, and loan loss provisions. It measures how well an MFI can cover its expenses through operating revenues it generates.
OER	*Operating expense ratio:* operating expenses scaled by the average gross loan portfolio. It measures how efficient an MFI is managing to control cost of operations.
PAR30	*Portfolio at Risk as of 30 Days:* the standard asset quality or portfolio quality measure representing loans overdue by 30 days or more.
Social performance	
Ln (NAB)	*Natural log of total number of active borrowers:* it measures how well an MFI is performing in promoting financial inclusion for many clients.
ALS	*Average loans size:* it measures how well an MFI is reaching to poorer clients whereby higher values mean the MFI is serving relatively the better-off clients.
MFI controls	
Board size	Number of directors on the MFI board.
Ln (assets)	A proxy for MFI size and defined as Natural logarithm of the book value of total assets.
Age	Number of years since the inception of an MFI.
CEO duality	Dummy: 1 if CEO and chair of the board are same person, otherwise 0.

4.3 Model and analyses techniques

We run various tests. First we run descriptive statistics of all variables in order to see how the data set looks like. Next we run multivariate analyses using GLS random effects (RE) panel regressions with robust standard errors (Greene, 2012; Petersen, 2009). The RE specification is preferable because it provides estimators that are unbiased, consistent, and efficient, whereas the FE estimators are not efficient (Hausman, 1978; Wooldridge, 2002). The Hausman test we run for all models also confirms the use of RE. Controlling for stable MFI and board committee variables, whether observable or not, RE reduces the risk of biases due to omitted variables. We use the robust option to correct for potential cross-sectional heteroscedasticity and serial correlation. In line with this, our basic estimating models can be presented as follows:

$$Y_{it} = \alpha_1 BC_{it} + \alpha_2 X_{it} + \alpha_3 Year_t + \mu_i + \varepsilon_{it} \qquad \ldots\ldots(1)$$

where Y_{it} is the financial and social performance—i.e., ROA, OSS, OER, Ln (NAB) or ALS—for MFI i in year t, BC_{it} board committee variables, X_{it} represents a set of control variables comprising *board size*, Ln (assets) that proxies *MFI size*, *age* and *CEO duality*. We add these firm specific variables and year dummies into the specification acknowledging for MFI's invariant characteristics and take account of firm heterogeneity. Finally, ε_{it} is the idiosyncratic error term.

We check the robustness of our results along three dimensions. First, we will experiment by substituting the number of board advisory committees and number of monitoring committees in our models with alternative proxy variables. Hence, in the robustness tests we use the fractions of directors sitting on monitoring committees instead of their number. Similarly, we use the fractions of directors sitting on advisory committees instead of the number of advisory committees.

Second, endogeneity is a common problem when analyzing the relations between governance and performance, at least in nonrandomized studies (e.g. see Périlleux & Szafarz, 2015; Arcot & Bruno, 2005; Hermalin & Weisbach, 1998; 2003; Baker & Gompers, 2003; Boone *et al.*, 2007; Linck *et al.*, 2008). Based on the result of a dataset of 405 MFIs from 73 countries collected from third-party rating companies' reports, Strøm *et al.* (2014) find little evidence endogeneity problem in microfinance. We argue that endogeneity that could be introduced by omission of significant variables is unlikely in our case due to all the MFIs we consider are from a single country (i.e. Ethiopia) embedded in the same micro and macro environmental contexts. Nevertheless, we include MFI controls in all our regressions.

Conceptually, the incentives of boards to form committees differ according to specific mandates committees will assume which may either be of advisory or monitoring nature, and also according to the choice of the firm which should also vary based on firm and board characteristics (Anderson *et al.*, 2004; Ferris *et al.*, 2003; Klein, 1998; Yermack, 1996; Harrison, 1987). While we argue that the board committees should improve MFI performance, causality may actually come in the opposite direction. It is equally plausible that better performing firms have larger boards and more committees for different purposes (Newman & Mozes, 1999; Anderson & Reeb, 2004; Dechow *et al.*, 1994), suggesting that firm performance leads to formation of board committees. Thus, reverse causality may potentially be driving our results.

We tackle this problem from several perspectives. We first investigate the relation of current board structure with future (next year) MFI performance. The one-year lag between the two variables should per se limits endogeneity problems. This reduces the simultaneity bias that explanatory variables are determined simultaneously along with the explained variable even more. We also experiment using a 3-year lags in our board structure variables for additional robustness check.

We also test for endogeneity in an econometric sense. We perform panel data version of causality test a la Granger in time series analysis. This test is used by Landier *et al.* (2012) and consists of running the following two regressions:

$$Y_{i,\ (t+1)} = a + b*BC_{i,\ t} + c*Y_{i,\ t} + Controls_{i,\ t} + e_{i,\ t} \quad \ldots\ldots (2)$$

$$BC_{i,\ (t+1)} = \theta + \beta\, BC_{i,\ t} + \delta Y_{i,\ t} + Controls_{i,\ t} + e_{i,\ t} \quad \ldots\ldots (3)$$

where $Y_{i,t}$ is the MFI *i*'s financial and social performance at time *t* and $BC_{i,t}$ is the board committee variables at time *t* for the MFI *i*. If MFI performance influences an MFI's board choice, we should not reject the hypothesis that $\delta > 0$. On the contrary, if δ is not significant while *b* is, it has more economic sense to talk about the positive effects of board committee on performance. In Section 4.3, we perform these and other robustness checks to address endogeneity. Overall, with panel data and a set of valid control variables our estimations should at least vouch for reliable correlations and feasibly causality accounting for endogeneity of committee structures.

5. Empirical evidences

5.1 Descriptive evidence

In table 2 we evidence that the Ethiopian microfinance industry has total assets of USD 10,440 millions reaching out to more than 2.9 million active borrowers as of 2011. We also evidence high percentages of assets to be comprised by loan portfolio implying that MFIs are focusing on their core business of growing portfolios. Total portfolio amount was US$ 6,201 showing a growth trend from year 2006. Overall, the growth and expansion rate has been significant over a period of five years. MFIs in Ethiopia grew 3.8-fold in terms of size between 2006 and 2011.

Table 2: Trend of MFIs performance in Ethiopia for the period 2006–2011

Variables⋆	*Year*		
	2006	*2009*	*2011*
Assets (USD 000)	2,746	6,806	10,440
Portfolio (USD 000)	2,078	4,990	6,201
Portfolio (% of Total Assets)	75.67	73.32	59.40
ROA	-0.06	0.014	0.04
OSS	1.23	1.31	1.43
OER	0.17	0.12	0.18
NAB	1,517,712	2,225,654	2,971,217
Average Loan Size	1,369	2,242	2087

⋆US$1 is approximately equivalent to Ethiopian Birr 17.1 at 2011 exchange rate

Interestingly, total assets have grown significantly more than gross loan portfolio, which has 'only' grown around 198%. Thus, the MFIs have increased their holding of other assets, like for instance liquidity, which could be a sign of them becoming more similar to banks as they become increasingly funded by local savings. At the same time, the number of clients has 'only' grown 96%. The financial performance of the industry has improved significantly with return on assets (ROA) changing from -5.8% in 2006 to 4.1% in 2011. This change of ROA implies that MFIs are now able to generate positive returns from their assets which is a good performance level. On the other hand, the operating expense ratio (OER) shows an increasing trend during the latter years reaching 18.1% in 2011, which, when considering the improved ROA must mean that interest rates have increased during the study period.

Table 3 presents summary statistics for board variables for the entire period. The results show that the average MFI has about 7 board members implying that Ethiopian MFIs have boards of similar size as the average global MFIs (Hartarska & Mersland, 2012). 56% of MFIs have at least one board committee and on average, they have about 3 board committees. The most common committees include audit and risk management committees. Based on theory (Reeb & Upadhyay, 2010) and our hypotheses, we

aggregate the committees into two: monitoring and advisory committees. On average, MFIs appear to have more advisory committees than monitoring committees. Among all board committees observed, advisory/strategy committees constitute 53% whereas monitoring committees constitute about 47% of the board committees.

Table 3: Descriptive statistics

Panel a. Board committee structures (Sample size = 23 MFIs)

Variables	*Obs.*	*Mean*	*SD.*	*Min*	*Max*
Board Size	129	6.791	1.519	4	9
Committee	129	0.560	0.524	0	1
Number of Committees	72	3.069	0.828	2	4
Monitoring Committee	72	1.319	0.601	0	2
Advisory Committee	72	1.75	1.045	0	4
CEO Duality	129	0.38	0.49	0	1
Ln (Total assets)	129	17.57	2.05	13.3	22.06
Age	129	8.30	3.07	1	14

Panel b. Corporate performance variables (Sample size = 23 MFIs)

Variable	*Obs.*	*Mean*	*Standard dev.*	*Min.*	*Max.*
MFI assets (in millions)	129	20.733	47.133	0.040	254.667
Log (Total assets)	129	17.57	2.052	13.305	22.06
# active borrowers	129	94,090.48	168,428.2	309	710,576.0
Log (# active borrowers)	129	9.946	1.924	5.733	13.47
Return on assets	112	-0.126	1.135	-12	0.087
Operational self-sufficiency	113	1.26	0.411	0.157	2.4
Operating expense ratio	115	0.148	0.105	0.02	0.6
Average loan	129	120.32	90.228	35.819	627.612
Average loan /GNI per capita	129	0.56	0.334	0.033	2.21
MFI age (years)	23	11.96	2.602	7	15

Table 4: Univariate test

This table presents difference in number of committees for groups of MFIs with more than the sample mean board size and those with more than the sample median board size. The total sample size is 23 MFIs. The stars indicate the results of t-tests for equal means between Big and Small Boards. * Significant at 10%; ** significant at 5%; *** significant at 1%.

Univariate Test Results	*Big Boards*	*Small Boards*	*Difference*
Based on Mean Board Size			
Committee	0.714	0.184	-0.530***
Number of Committees	2.231	0.474	-1.757***
Advisory Committees	1.374	0.342	-1.032***
Monitoring Committees	0.989	0.132	-0.857***
Based on Median Board Size			
Committee	0.697	0.358	-0.339***
Number Committees	2.171	1.057	-1.114***
Advisory Committees	1.289	0.755	-0.535**
Monitoring Committees	1.039	0.302	-0.738***

Table 4 presents results from univariate tests. For these tests, the sample is split into two groups (above and below mean/median board size). Our expectation is that MFIs with larger boards will have greater number of board committees. These univariate tests indicate that MFIs with large boards have on average a greater number of committees, both advising and monitoring committees. The mean results provide perhaps the most informative evidence in analyzing the relatively small numbers of discrete committees. These results are consistent with the argument that MFIs utilize subordinate large board sizes to mitigate the co-ordination and communication problems as well as the free rider problem that could occur (Reeb & Upadhyay, 2010).

5.2 Econometric evidence

In this section, we report results from random effects panel data estimations of the relationships between board committees and financial and social performance. If committees strengthen board's functions by allowing directors to work on specific issues, then we expect their use to be positively related to MFI performance. We report the results from the random effect (RE) regressions in Table 5. Using the ROA as an indicator of financial performance, model (1) shows that ROA is not significantly affected by the number of committees and board size (Big Board). But the sign of its coefficients in the table suggests that the number of committees and big board size are positively associated with ROA. This suggests that mere formation of high number of committees does not necessarily result in better performance.

We also expect the number of committees to be of greater importance in MFIs with larger boards. To test this notion, we introduce an interaction term of the number of committees and board size (large Board) in all our specifications. The expectation is that the interaction term will have favorable coefficient. Consistently, our test confirms that number of committees (Hypothesis 3) is more important in MFIs with larger than average boards. We find MFIs with large boards appear to exhibit significantly better OSS and OER than their counterparts with small boards. These results suggest that the use of board committees offsets the negative relation between larger boards and performance. We interpret this to suggest that board committees are important tool in reducing the costs associated with larger boards.

Table 5: Board committees and MFI performance

This table presents results from the analysis of relation between performance and presence of board committee. The dependent variables are one-year future Return on Assets (ROA), Operational Self-Sufficiency (OSS), Operating Expense Ratio (OER), log of Total Number of Borrowers (Ln (NAB)) and Average Loans Size (ALS). The expected favorable result for OER and ALS is negative. That is negative OER suggests lower expenses while negative ALS indicates better poverty outreach. Number Committee is the number of board committees. Big Board is an indicator variable denoting MFIs in top 50% of the number of directors on the board. Board Size is the number of directors on board. Ln (Total assets) is natural log of total assets. Age is the number of years since the inception of the MFI. CEO/Chair Duality is a dummy that equals 1 if the CEO also holds the board chair position. Estimates of the variance corrected following cluster-robust treatment of standard errors (heteroscedasticity-consistent) are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% or 10% levels respectively. The total sample size is 23 MFIs with maximum of 129 firm-year observations.

	Panel A. Financial Performance			Panel B. Social Performance	
	(1) ROA	*(2) OSS*	*(3) OER*	*(4) ALS*	*(5) Ln (NAB)*
Number Committee	0.0463	-0.0899***	0.0286**	21.604**	-0.1198*
	(*-0.079*)	(*-0.033*)	(*-0.017*)	(*-12.25*)	(*-0.069*)
Number Committee * Big Board	0.0337	0.1346***	-0.0319*	-9.934**	0.0947**
	(*-0.057*)	(*-0.025*)	(*-0.022*)	(*-12.86*)	(*-0.055*)
Board Size	-0.0561	-0.064*	0.0104	0.1962*	-0.0714*
	(*-0.062*)	(*-0.038*)	(*-0.01*)	(*-4.94*)	(*-0.043*)
Ln (Total assets)	-0.0387	0.1077***	-0.0275**	8.9075**	0.871***
	(*-0.059*)	(*-0.037*)	(*-0.011*)	(*-7.49*)	(*-0.078*)
Age	0.0929	0.0237	-0.006	-8.7717	0.0593
	(*-0.082*)	(*-0.019*)	(*-0.004*)	(*-7.23*)	(*-0.06*)
CEO Duality	0.1874	-0.1664*	-0.0212	-44.158***	0.2588**
	(*-0.175*)	(*-0.093*)	(*-0.023*)	(*-15.88*)	(*-0.132*)
Constant	0.2303	-0.238	0.6019***	-21.395	-4.810***
	(*-0.523*)	(*-0.6396*)	(*-0.21*)	(*-98.02*)	(*-1.049*)
Model Statistics					
N	112	111	111	112	112
R^2	0.081	0.559	0.468	0.3464	0.282
Wald χ^2	36.34***	50.98***	115.33***	80.45***	752.22***

In Table 5 Panel B, we also estimate two specifications for the social performance indicators explained in our model (equation 1). The variables include average loan size (ALS) and logarithmic transformation of total number of active borrowers, Ln (borrowers). Like in Panel A we include the interaction term to account for the dependency between the number of board committees and big board size. The results suggest that the larger the number of committees a board has the less likely that the MFI exhibits favorable social performance. When there are more committees, the board serves fewer clients and grants significantly larger loans than do their counterparts with fewer subcommittees. However, like in Panel A, the interaction term between number of committees and board size shows favorable results indicating that there are performance benefits for MFIs having larger boards with more board committees. In model (4), the combined effect of number of committees and board size on ALS is negative (favorable) and significant at the 5% level. We also find similar result in model (5) that MFIs with large boards and more committees have a significantly superior performance in terms of serving larger number of clients.

Consequently, the empirical results should be interpreted by examining combinations of board size and committees rather than separately. Studies also document that organizations adjust their board sizes depending on their advising and monitoring needs (Boone *et al.*, 2007; Coles *et al.*, 2008; Linck *et al.*, 2008). Our findings are consistent with the hypothesis that firms in general form board committees to offset costs of larger boards and mitigate communication and coordination problems as well as free rider problems (Reeb & Upadhyay, 2010).

Next, we estimate whether the value impact of the boards differs if an MFI has advisory and/or monitoring committees. Specifically, we estimate the regression with the number of advisory committees and number of monitoring committees replacing the number of committees as explanatory variables. Table 6 presents the results from these analyses.

In Table 6, the primary variables of interest are number of advisory committees, monitoring committees, the interaction of number of advisory committees and board

size, and interaction of the number of monitoring committees and board size. Estimated coefficients on the number of advisory and monitoring committees in table 6, specification (1) for ROA and (2) for OSS indicate that the negative performance impact of board committees stems from advisory committees and not from the monitoring committees. Yet, in specification (4) the performance impact of board committees stems from both advisory and monitoring committees. Though we find only a weak relationship in the ROA regressions, OSS and ALS regressions in Table 6, the results support that the larger the number of advisory committees is, the less effective they become.

We also introduce an interaction term of number of advisory committees and large board. The results resolve the apparent negative effects of advisory committees. We find the interaction term is highly significant and this significance level surpasses that of the number of advisory committees as stand-alone term. Consequently, in four of the five specifications— (1), (2), (3) and (5)—the χ^2-test for the combined effect of advisory committees is either positive or favorably negative OER and significant at 1% level. Moreover, specification (4) indicates that the negative social effect (larger loan size) of having advisory committees is netted out when the committees are part of a big board. As Table 7 shows, the number of monitoring committees improves OSS, OER and total number of borrowers in MFIs with above average boards (large boards).

Consistent with the findings of Reeb and Upadhyay (2010), these results suggest that the number of advisory committees is what drives the negative performance impact of board subcommittees. Similarly, positive and significant coefficients from χ^2-test for MFIs with big boards indicate that in MFIs with greater communication and co-ordination problems, board committees appear to counterbalance the costs of larger boards, but have limited impact in MFIs with smaller boards. Our findings are consistent with previous studies that reveal that as a growing industry, MFIs need more strategic resources than monitoring (Mori & Mersland, 2014; Mori *et al.*, 2015). On the other hand, the level and intensity of board monitoring activity usually involves agency

costs and outcomes of monitoring committees may not be apparent by the performance proxies under consideration (Reeb & Upadhyay, 2010).

Table 6: Advisory committees and MFI performance

This table presents results from the analysis of MFI performance from the presence of Advisory Committees. The dependent variables are one-year future ROA, OSS, OER, ALS and Ln (NAB). The expected favorable result for OER and ALS is negative. That is negative OER suggests lower expenses while negative ALS indicates better poverty outreach. Advisory committees include finance and risk management, saving mobilization, resource management, change management, and fund raising and other committees performing similar tasks. Monitoring committees is number of committees other than advisory committees. RE estimates of the variance corrected following a cluster-robust treatment of standard errors (heteroscedasticity-consistent) are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% or 10% levels respectively. The total sample size is 23 MFIs with maximum of 129 firm-year observations.

	Financial Performance			*Social Performance*	
	(1) ROA	*(2) OSS*	*(3) OER*	*(4) ALS*	*(5) Ln (NAB)*
Number Advisory Committees	-0.1109*	-0.0832**	0.0044	0.1083**	-0.1063
	(*0.067*)	(*0.035*)	(*0.013*)	(*0.059*)	(*0.089*)
Number Monitoring Committees	0.201	-0.0807	0.0267*	0.0927**	-0.1293
	(*0.164*)	(*0.051*)	(*0.015*)	(*0.048*)	(*0.096*)
Number Committee $_{(Advisory)}$ * Big Board	0.2151**	0.2620***	-0.0403**	-0.0878	0.1217*
	(*0.117*)	(*0.047*)	(*0.022*)	(*0.068*)	(*0.087*)
Board size	0.1525	-0.0824***	0.0352***	-0.011	-0.0571*
	(*0.125*)	(*0.032*)	(*0.009*)	(*0.025*)	(*0.041*)
Ln (Total assets)	-0.0382	0.1003***	-0.0228***	0.0411	0.867***
	(*0.056*)	(*0.03*)	(*0.008*)	(*0.038*)	(*0.08*)
Age	0.1029**	0.0402**	-0.0073	-0.0456	0.0683
	(*0.074*)	(*0.018*)	(*0.006*)	(*0.032*)	(*0.065*)
CEO Duality	0.2579	-0.2358***	-0.0102	-0.203***	0.219**
	(*0.211*)	(*0.084*)	(*0.02*)	(*0.067*)	(*0.123*)
Constant	-0.7447	-0.0892	0.4129***	0.286	-4.8382***
	(*0.732*)	(*0.523*)	(*0.14*)	(*0.498*)	(*1.074*)
Model Statistics					
N	98	111	88	102	102
R^2	0.1212	0.6353	0.4663	0.3723	0.3424
Wald χ^2	42.49***	125.06***	130.92***	81.55***	674.9***

Table 7: Monitoring committees and MFI performance

This table presents results from the analysis of MFI performance from the presence of Monitoring Committees. The dependent variables are one-year future ROA, OSS, OER, ALS and Ln (NAB). The expected favorable result for OER and ALS is negative. That is negative OER suggests lower expenses while negative ALS indicates better poverty outreach. Advising committees include finance and risk management, saving mobilization, resource management, change management, and fund raising and other committees performing similar tasks. Monitoring committees is number of committees other than advisory committees. RE estimates of the variance corrected following a cluster-robust treatment of standard errors (heteroscedasticity-consistent) are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% or 10% levels respectively. The total sample size is 23 MFIs with maximum of 129 firm-year observations.

	Financial Performance			*Social Performance*	
	(1) ROA	*(2) OSS*	*(3) OER*	*(4) ALS*	*(5) Ln (NAB)*
Number Advisory Committees	0.0931	0.0351*	-0.0057*	0.0598*	-0.0397
	(0.102)	*(0.064)*	*(0.061)*	*(0.032)*	*(0.061)*
Number Monitoring Committees	0.0876	-0.2215**	0.1312*	0.2316*	-0.3534***
	(0.149)	*(0.089)*	*(0.073)*	*(0.130)*	*(0.135)*
Number Committee $_{(Monitoring)}$ * Big Board	0.0884	0.2363***	-0.1326**	-0.1766	0.2832**
	(0.139)	*(0.037)*	*(0.075)*	*(0.133)*	*(0.141)*
Board size	-0.098	-0.0494*	0.0112	-0.0177	-0.0555
	(0.098)	*(0.037)*	*(0.009)*	*(0.026)*	*(0.04)*
Ln (Total assets)	-0.0629	0.121***	-0.0293***	0.0415	0.8786***
	(0.08)	*(0.045)*	*(0.011)*	*(0.033)*	*(0.071)*
Age	0.102	0.014	-0.0032	-0.0393	0.0515
	(0.089)	*(0.02)*	*(0.005)*	*(0.03)*	*(0.06)*
CEO Duality	0.1899	-0.2075**	0.0023	-0.1907***	0.2151*
	(0.169)	*(0.103)*	*(0.02)*	*(0.065)*	*(0.122)*
Constant	0.6912	-0.4958	0.6027***	0.2818	-4.941***
	(1.038)	*(0.775)*	*(0.205)*	*(0.458)*	*(0.931)*
Model Statistics					
N	102	111	111	102	102
R^2	0.2536	0.5254	0.5374	0.3985	0.2792
Wald χ^2	18.62*	87.65***	118.05***	91.32***	1586.54***

While we find some effects of board committees on social performance, it is evident that both advisory and monitoring committees appear to command larger average loan size (ALS). This could be attributed to the fact that our study focuses on regulated MFIs which are often evidenced to divert from their social missions (Hartarska & Nadolnyak, 2007; Hermes *et al.*, 2011). This would imply that the board of directors is selected based on financial skills as required by the central bank authorities and not based on social skills (Mori *et al.*, 2015). Moreover, even if the directors selected to be on board have social expertise, the MFI whose board they sit on is a regulated institution. This means their participation on board may be directed mainly to assist the MFI to financially perform well and to observe the central banking authorities and less towards helping the MFI to focus on its social logic.

MFI control variables including board size, Ln (Total assets), Age and CEO duality have some effects on both financial and social performance. Like previous studies, we find that the larger the number of directors the less effective the board will be (Jensen, 1993; Yermack, 1996). Similar to Hartarska and Mersland (2012) we find that MFIs benefit from scale economies, i.e. larger MFIs show healthier financial results. Likewise, and naturally, larger MFIs reach out to more clients as reported in Table 6. Yet, this also seems to come with less focus on depth of outreach. As expected, MFIs with many years in the business have relatively improved ROA and OSS (Table 6). These results are in line with previous studies, which show that performance improves over time as the MFI gains experience (Mersland & Strøm, 2009; Hartarska & Mersland, 2012). The negative coefficient on CEO duality implies that MFIs with more influential CEOs exhibit lower operational sustainability though duality appears to favor social performance as indicated by the negative and positive significant coefficients for the average loans size and number of clients served. This could indicate that a more powerful CEO has better opportunity to focus on the social logic of the MFI, a result that should warrant more research on the role of the CEO in balancing the double logics in hybrid organizations.

Table 8: Advisory committees and PaR30

This table presents results from the analysis of quality of loan portfolio from the presence of Advisory Committees. The dependent variable is PaR30 (portfolio-at-risk that is in arrear for 30 days or more). Advisory committees include finance and risk management, saving mobilization, resource management, change management, and fund raising and other committees performing similar tasks. Monitoring committees is number of committees other than advisory committees. RE estimates of the variance corrected following a cluster-robust treatment of standard errors are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% or 10% levels respectively. The total sample size is 23 MFIs with maximum of 129 firm-year observations.

	PaR30
	Coef. (Std. Err.)
Advisory Committees	-0.005
	(0.010)
Committee $_{(Advisory)}$ * Big Board	-0.013 **
	(0.006)
Monitoring Committees	-0.004
	(0.027)
Board size	0.013 *
	(0.008)
Ln (Total assets)	-0.006
	(0.010)
Age	0.005
	(0.005)
CEO Duality	0.008
	(0.019)
Constant	0.072
	(0.136)
Model Statistics	
N	98
R^2	0.071
Wald χ^2	5.54 *

In a separate analysis, we also the test the link between a risk committee which is classified as an advisory committee and quality of MFI loan portfolio. Table 8 above presents the result of the random effects panel data estimations of this relationship. As indicated in the table the full model is marginally significant at 10 percent. Using the PaR 30 as an indicator of portfolio quality the result shows that PaR30 is not affected by the number of advisory committees. Yet, following the argument that the number of committees is of greater importance in MFIs with larger boards, we find that our

estimation of the relationships between advisory board committee and portfolio quality Big Board is negative and significant. We interpret this result to suggest that MFIs with larger than average boards and that have advisory committees appear to exhibit significantly lower PaR30. This finding is robust considering the relationship between board size and PaR30, in which case PaR30 is marginal but positively related to board size. These results suggest that the use of advisory board committees offsets the negative relation between larger boards and lower portfolio quality.

5.3 Robustness tests

The multivariate tests in the previous section are designed to see if MFIs with board committee exhibit superior performance than their counterparts. In this section, we report various robustness checks for the estimation method and variable specification. First, we address the possible critique that performance directly determines an MFI's governance choice hence invalidating the previous analysis by performing a panel data version of Granger causality test, a test used by Landier *et al.* (2012) and we use equation (2) and (3) specified in Section 3.3 for these tests. If MFI performance influences an MFI's governance choice, we should not reject the hypothesis that $\delta > 0$ and $c = 0$. On the contrary, if δ is not significant while b is, it has more economic sense to talk about the positive effects of board committee structures on MFI performance.

Table 9 shows indeed, it is not past performance that generated today's board committee choice. We find that the number of committees is insignificantly related to MFI performance almost in all the regressions. However, in the OSS, OER and ALS regressions we find that the coefficients of these variables are negative and significant at 10% level, suggesting that MFI performance has nominal reverse causality on the use of board committees.

Table 9: Board committees and performance: Robustness checks - Granger causality

Ordinary least squares regression, with controls and time dummies of a) One year future performance on number of committees and MFI performance at time t; b) One year future number of committees on committee structures and MFI performance at time t. Robust standard errors (White's heteroscedasticity-consistent) are in parentheses. ***, ** and * denote statistical significance at 1%, 5% or 10% levels respectively.

Dependent variable	ROA $_{t+1}$	Number of committee	OSS $_{t+1}$	Number of committee	OER $_{t+1}$	Number of committee	ALS $_{t+1}$	Number of committee	Ln(NAB)$_{t+1}$	Number of committee
ROA $_t$	-0.073	-5.61e-17								
	(3.544)	*(1.29e-16)*								
OSS $_t$			0.667***	-1.03e-17*						
			(0.099)	*(4.63e-18)*						
OER $_t$					0.871***	-1.73e-15*				
					(0.238)	*(5.59e-16)*				
ALS $_t$							0.396*	-1.84e-18*		
							(0.197)	*(6.92e-19)*		
Ln (NAB) $_t$									0.914***	-9.49e-19
									(0.096)	*(1.32e-16)*
Nr. Committee	0.057	1***	-0.022	1***	-0.008*	1***	0.061***	1****	0.003	1***
	(0.12)	*(4.24e-17)*	*(0.024)*	*(1.04e-18)*	*(0.006)*	*(2.52e-17)*	*(0.024)*	*(4.25e-17)*	*(0.02)*	*(3.99e-17)*
Big Board	-0.819	-8.67e-2***	-0.189	-1.99e-18	0.004	-7.47e-1***	0.038	-8.51e-2***	0.045	-8.26e-2***
	(0.821)	*(2.30e-16)*	*(0.132)*	*(5.69e-18)*	*(0.051)*	*(1.59e-16)*	*(0.107)*	*(2.23e-16)*	*(0.104)*	*(2.31e-16)*
Board Size	0.187	1.67e-16***	0.066	1.70e-18	0.001	2.18e-16***	-0.036	1.53e-16***	-0.036	1.57e-16***
	(0.188)	*(6.21e-17)*	*(0.043)*	*(2.01e-18)*	*(0.014)*	*(5.56e-17)*	*(0.027)*	*(6.22e-17)*	*(0.036)*	*(6.27e-17)*
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

An added robustness check (unreported) applied to the results of Table 6 involves experimenting by substituting the number of advisory and monitoring committees in our model with alternative proxy of the ratio of advisory committee and monitoring committees available. We also use the proportion of directors making up the advisory and monitoring committees to total board size. The result of the estimates largely remained steady. We find results qualitatively similar to the primary results.[4]

We further experiment by avoiding the simultaneous use of the two board committee types (advisory and monitoring) and dealing with only one of the two types at a time. Considering the correlation between the number/proportion of board committee type and the number of directors on that same committee, variables measuring the fraction of committees and fraction of directors on each committee are regressed separately. In unreported results, we find that the results are consistent with our primary findings.

To check the possibility that outliers within 1 year may be influencing the results we tried by using 3-year averages for MFI performance. We find similar results (unreported) to those listed in tables 6. Overall, our robustness checks imply that our results are confirmed when we vary estimation method, alternative proxy variables, and regression specifications. Thus, our conclusions from the board committees and MFI performance sections seem to be robust.[5]

[4] The regression results are available from the authors upon request.

[5] In unreported robustness check, we considered the moderating effect of board size. The result shows that the relationship between the existence of committees and performance is moderated by board size and all the results remained consistent with our main results in Table 6 and 7 except for the loss of significance in few cases. Nevertheless, our conclusion remains qualitatively the same.

Table 10: Board committee and MFI performance: 3-years lag robustness check

This table presents results from the analysis of MFI performance from the presence of board committees. The dependent variables are three-year future ROA, OSS, OER, ALS and Ln (NAB). The expected favorable result for OER and ALS is negative. That is a negative OER suggests lower expenses while negative ALS shows a better poverty outreach. RE estimates of the variance corrected following a cluster-robust treatment of standard errors (heteroscedasticity-consistent) are reported in parentheses. ***, ** and * denote statistical significance at 1%, 5% or 10% levels respectively. The total sample size is 23 MFIs with maximum of 129 firm-year observations.

	Financial Performance			Social Performance	
	(1) ROA	*(2) OSS*	*(3) OER*	*(4) ALS*	*(5) Ln(NAB)*
Committee L3.	0.013*	-0.096***	-0.010	31.8*	-0.079
Committee * Big Board L3.	0.008	0.115***	0.007	-8.901	0.071
Board Size L3.	-0.003	-0.018	0.001	-6.418	-0.037
Ln (assets)	0.006	0.046	-0.014	0.213	0.802***
Age	0.005*	0.040*	-0.001	-8.143	0.093
CEO Duality	0.003	-0.268***	-0.028	-89.8***	0.205
_cons	-0.102	0.370	0.385*	250.2	-4.702**
Model Statistics					
N	43.0	42.0	42.0	34.0	34.0
R^2	0.512	0.524	0.186	0.500	0.680
Wald χ^2	17.47**	101.7***	20.66***	32.93***	245.33***

In an additional robustness check, we also experiment by using longer lags in our board structure variables. Specifically, we applied a 3-year lag for board size, the number of committee, and the interaction term of committee and big board size. As Table 10 above shows, our results remained qualitatively the same to our main findings. Considering the shorter length of panel data used for this study, the 3-year lag we introduced to the board structure variables resulted in lower number of firm-year observations for this robustness check. Yet, to a largely extent our findings and conclusions remains robust.

6. Conclusions

This study examines the relationship between MFIs' performance and board committees. It argues that MFIs use committees to mitigate the co-ordination, communication, and free-riding problems that can occur with larger boards. Questions also exist as to the effectiveness of the link between the type of committees that boards create and improved MFI performance, focusing on the relative roles of advisory and monitoring committees. We test our hypotheses using twenty-three MFIs operating in Ethiopia during the period 2006—2011.

The main result shows that larger boards can be valuable if properly utilized. By looking at the number and type of committees and how they are linked with board size, we find evidence that boards have explanatory value for MFI financial performance and outreach outcomes. We find that the presence of committees by themselves not to be beneficial to MFIs performance. But when linked with large boards, we evidence positive financial and social results for MFIs. This finding implies that with large boards, it is likely that directors will be sitting on fewer sub-committees with advising and monitoring roles.

Our findings also suggest that the impact of board committees on performance is conditional on the committee types. Accordingly, after categorizing committees into monitory and advisory committees, we find that advisory committees have significant and favorable impact on the MFI's financial performance than its outreach to the poor. This hints that board directors focus more on financial results than social returns. This could be because of the MFIs in our study are all regulated by the central bank. Central banks put guidance on what and how boards of financial institutions should be composed of (Mori *et al.*, 2015). The central banks also monitor and supervise financial institutions to make sure that they have good financial performance. Thus, boards and their sub-committees will monitor and advise MFIs while adhering to central banks regulations.

Our results further suggest that the use of board committees to offsets the negative relation between larger boards and MFI performance. The performance implications of board committees are especially sensitive to the size of the board and the number of committees and establishing board committees is an operational approach to improve board effectiveness in larger boards. Therefore, the trend towards normative recommendation to establish board committees may not be to the MFIs' advantage and that MFIs may wish to reevaluate their needs for committees based on the nature of the organization. In Ethiopian context, the central bank policy recommendation maintains that MFIs should constitute board committees. Yet our findings confirm that board committees offset the negative association that board size can have on MFI performance. Therefore, the decision to establish board committees should at least consider the advising and monitoring needs of the MFI's management.

Finally, we cannot rule out the possibility that some underlying factors may cause reverse causality. However, our tests provide consistent evidences on performance gains achieved from board committees. This study provides some evidences on the performance gains and/or costs of board committees. However, this does not put the issue of board effectiveness to an end. To understand more about board committees and their impact in microfinance we suggest that future studies take a multidisciplinary approach incorporating both qualitative and quantitative research tools. Future studies should also use a broader range of variables and with extended datasets. Moreover, multiple country studies are needed. Finally, more research is needed on how committees and committee functions evolve over time.

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APPENDIX A

Table A1: Top 10 Big MFIs in Ethiopia for 2011

№	*MFI Name*	*№ of Active Borrowers*	*Total Assets*		*Loan Portfolio*	
			(in millions Birr)	*(in millions USD)*	*(in millions Birr)*	*(in millions USD)*
1.	Amhara Credit and Savings Institution S. Co.	629,518	3820	223.4	2050	119.88
2.	Dedebit Credit and Saving Institution S. Co.	356,372	2890	169.01	1730	101.17
3.	Oromia Credit and Savings S. Co.	521,252	2060	120.47	1300	76.023
4.	Addis Credit and Savings Institution S. Co.	178,247	864	50.526	561	32.807
5.	Wisdom Microfinance S. Co.	48,738	217	12.69	116	6.784
6.	Wasasa Microfinance S. Co.	53,033	148	8.655	100	5.847
7.	Specialized Financial and Promotional Institution S. Co.	34,494	89.7	5.243	60.7	3.547
8.	Buusaa Gonofaa Microfinance S. Co.	55,240	83.6	4.889	76.5	4.476
9.	PEACE Microfinance S. Co.	17,576	62.7	3.665	43.5	2.543
10.	Eshet Microfinance S. Co.	23,135	51.4	3.007	46.7	2.729