

# **The Endogenous Nature of Corporate Governance: A Comparison of Consumer and Producer Co-ops**

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By

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## **ABSTRACT**

Whether by borrowing governance measures from one organizational type and applying them to another, or by promoting a single governance model, policymakers are standardizing corporate governance. Differences between firms are overlooked as blanket governance measures are applied that treat all affected firms the same. The problem is that corporate governance is not a one-size-fits-all phenomenon. Applying governance measures originally designed for other firms may produce sub-optimal results.

The reason for the sub-optimal results is that corporate governance is believed to be endogenously determined. Firms choose their optimal governance structures and behaviours based on their specific characteristics and the governance issues they face. Any misalignment between the governance measures a firm must adopt and the measure that is best for the firm (given its characteristics) could negatively impact the firm's corporate governance, and ultimately its performance

Extending Hansmann's theory of ownership to look at the governance of co-operatives, this thesis finds support for the belief that corporate governance is endogenous. Using data from the Co-operative Business Study and three types of statistical tests, Principal Component Analysis, t-tests, and Pearson's chi-square tests, producer and consumer co-ops are compared to determine: 1) whether the two co-op types differ in terms of their firm specific characteristics, and 2) whether any discovered differences are associated with differences in corporate governance measures.

Results suggest that consumer co-ops have higher control costs, and their boards are more involved in overseeing management. In other words, there is an association between

how much it costs members to control their co-op and the degree to which management is overseen by the board or by members. These results reinforce the point that corporate governance is endogenous, and they should give policymakers pause when developing governance measures; standardized governance measures may produce sub-optimal results because firm-specific characteristics need to be considered.

Instead of developing broadly applied governance measures, policymakers may be better served by creating policies that enhance board cohesiveness and improve directors' ability to function as a team. By focusing on board members' soft skills, policymakers can improve corporate governance while still allowing firms to determine their own optimal governance structures and behaviours.

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## **Chapter 1. Introduction**

Corporate governance continues to attract the attention of policymakers and researchers. Good corporate governance has been associated with a number of positive outcomes, including improved firm longevity, reduced managerial opportunism, and better decision making (Daily & Dalton, 1994; Forbes & Milliken, 1999; Shleifer & Vishny, 1997). Poorly governed firms are more likely to collapse and end up as front-page news. In fact, it was the widely publicized collapse of Enron two decades ago that renewed policymakers' interest in defining good corporate governance.

Whether by borrowing governance measures from one organizational type and applying them to another, or by promoting a single governance model, policymakers are increasingly standardizing corporate governance. Firm-specific differences, or even broader differences such as those between countries, are often overlooked as corporate governance becomes more homogenous.

One of the broadest examples of corporate governance standardization is the adoption of legislation modelled after the Sarbanes-Oxley Act, or SOX, by countries outside of the United States. The American government enacted SOX in 2002 in response to such scandals as Enron, Tyco, and WorldCom. The act emphasizes director independence, the use of audit committees, and the need for directors to have financial acumen.

Since SOX was passed, other countries have adopted similar legislation, including Canada, Japan, and France. The rise of SOX-like regulations outside of the United States has been fueled by a desire to standardize governance requirements between countries

(Loewenberg, 2008). Overall, the spread of Sarbanes-Oxley equates to countries adopting the “best practices” of the United States.

On a smaller scale, the practices promoted by governance groups such as the Institute for Corporate Directors (ICD) are increasingly being adopted by firms regardless of their ownership structure. Directors from numerous co-operatives, credit unions, Crown corporations, and non-profit organizations (NPOs) hold ICD.D designation, which is awarded for having completed the ICD director training program (Canada Post Corporation, 2021; Canadian Red Cross, 2021; Concerta Bank, 2021; CUA, 2021; Diabetes Canada, 2021; Federated Co-operatives Limited, 2021; Peninsula Co-op, 2020). As the practices advocated by the ICD spread, the way different types of organizations conduct corporate governance becomes increasingly standardized.

Alongside the adoption of regulations or best practices, corporate governance becomes increasingly homogenous as organizations adopt the same governance model. The Carver, or Policy Governance Model, is one of the most well-known governance models currently used. It places the board as the primary mechanism of accountability and oversight in an organization. According to the model, the board leads on behalf of owners, developing the strategies and policies that advance owners’ interests. The Carver Model has been adopted by many co-ops and NPOs, as well as for-profit organizations (Carver, 2001; MacLean & MacKinnon, 2000; Sherwood & Taylor, 2014).

The perceived advantage to adopting a single governance model is that it allows organizations to follow a common, structured framework (Sherwood & Taylor, 2014); the assumption is that what is good for one firm should be good for another. This assumption is problematic. What constitutes “good” for one firm is not necessarily transferable.

Corporate governance is not a one-size-fits-all phenomenon. Instead, a governance structure that produces good results for one firm may elicit poor results for another. The reason for the different outcomes is that corporate governance is hypothesized to be endogenously determined — i.e., it is believed that a firm chooses its governance structures and behaviours (i.e., its governance measures) to deal with its governance problems or demands in the best way possible (Adams et al., 2010).<sup>1</sup> Consequently, firms with different characteristics will optimally choose different corporate governance measures.

Standardizing corporate governance – whether by harmonizing laws and regulations, following common best practices, or by adopting the same governance model – overlooks the endogenous nature of corporate governance. For policymakers, endogeneity poses a problem. As Huse (2005b) states, “... there is no best way of designing a corporate governance system ... context and actors must be considered” (p. 68). If policymakers try to influence corporate governance without recognizing the effects of endogeneity, then the policies they enact may be inefficient or even harmful.

There is evidence that homogenous or blanket governance measures applied across different types of firms do not work because of firm-specific differences. As a case in point, requirements for board independence originally intended for investor-owned firms (IOFs) may negatively impact non-profit organizations (NPOs) by prohibiting NPOs from offering donors directorships (Reiser, 2007). Given that NPOs often use directorships as a reward to large donors, this deprives a non-profit of potential funding. To take another example, current regulatory pressure being exerted on credit unions to professionalize their boards

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<sup>1</sup> Throughout this thesis, the term governance measures are used synonymously with the phrase governance structures and behaviours.

(i.e., to make them more like the boards of investor-owned banks) is believed to make credit unions less responsive to their members, as well as increase the chance they will demutualize (Pohler, 2018).<sup>2</sup>

### **1.1 Research question**

The hypothesized endogeneity of corporate governance suggests that one-size-fits-all governance measures may be problematic. Standardizing corporate governance, or the blanket application of governance measures, may impose non-optimal governance structures on firms. Different firms will have different characteristics, and so the governance structure that best fits one company may result in non-optimal performance for another.

One characteristic that can shape a company's corporate governance is its ownership structure. For instance, if founders (i.e., the initial owners who create a firm) serve as directors, the board places greater emphasis on pay-for-performance incentives for the CEO (Li & Srinivasan, 2011). Family ownership may decrease the need for outside directors if family members actively monitor management (Mishra et al., 2001).<sup>3</sup> And the rise of new ownership structures, specifically (activist) institutional investors, is linked to strengthened demands for independent directors, and greater emphasis on board

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<sup>2</sup> Demutualization is the process whereby a co-op changes from being member-owned to another form of ownership or organizational type, such as an IOF.

<sup>3</sup> The term "outside director" is used synonymously with independent director throughout this thesis. "Outside" refers to directors who are not employees of the firms they oversee. By contrast, inside directors are both board members and employees of the firm. They are not independent.

competencies and diversity (CalPERS, 2019; Denes et al., 2017; Goodman et al., 2018; Norges Bank Investment Management, 2019).

Although there is strong evidence suggesting that some owners will actively monitor management while others will be more hands off, what is lacking is insight into why monitoring behaviours would vary between owners (Denes et al., 2017). This thesis addresses the question of who will monitor management by looking at the link between the cost of controlling the firm and the corporate governance of producer and consumer co-ops. Using Hansmann's (1996) theory of ownership as the starting point, an empirical examination is conducted of the premise that governance structures and behaviours are endogenous.

Hansmann maintains a firm's ownership is selected to minimize the combination of marketing costs and the costs of ownership. Marketing costs are incurred by individuals when doing business with a firm they do not own. Ownership costs are incurred by the individuals who own the firm. Ownership costs can be broken down into the cost of risk bearing and the cost of controlling the firm.<sup>4</sup>

According to Hansmann, co-ops will emerge if the marketing costs that members incur when dealing with IOFs are larger than the ownership costs they would incur after forming a co-operative.<sup>5</sup> This thesis extends Hansmann's argument beyond the question of firm ownership to a firm's corporate governance measures. It is argued that co-ops can be expected to adjust their corporate governance based on control costs.

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<sup>4</sup> The costs of controlling the firm are also referred to as control costs throughout this thesis.

<sup>5</sup> Co-ops are expected to have relatively low marketing costs because they are owned by their members.



Specifically, it is hypothesized that members will take on a greater role overseeing their co-op when control costs are relatively low. When control costs are high, the oversight role is expected to shift away from members to the board. Since the control costs of consumer co-ops are expected to be higher than the control costs of producer co-ops, the endogeneity of corporate governance generally, and Hansmann's theory specifically, can be tested by examining whether consumer co-ops are characterized by greater board involvement in overseeing management.

## **1.2 Corporate governance**

The focus of this thesis on the governance of producer and consumer co-ops takes place within a larger corporate governance framework. At its core, corporate governance is the way power is exercised over corporate entities (Tricker, 2015). It is the system for controlling and directing companies (Cadbury, 1992), and it involves a set of relationships between a firm's owners, board and management. In most instances, owners appoint the board, which oversees and guides management. In turn, management runs the company. Throughout these relationships, the board plays a central role, protecting owners' interests from managerial opportunism, and ensuring the sustainability of the firm (Shleifer & Vishny, 1997).<sup>6</sup>

In the broadest sense, the board does two things. It oversees management, and it advises management (Coles et al., 2008; Cook & Burrell, 2013; Lipton & Lorsch, 1992).<sup>7</sup> In

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<sup>6</sup> The term "firm" is used throughout this thesis to represent any type of organization that requires corporate governance. This includes both IOFs and co-operatives. Company and firm are used interchangeably.

<sup>7</sup> Monitoring, oversight, and control are used interchangeably in this thesis to describe the board's role of controlling management.

its oversight role, the board is expected to monitor management, ensure management is acting in owners' interests, and protect owners against harmful behaviour such as managerial shirking or fraud (Larcker & Tayan, 2016; Linck et al., 2008). The board hires and fires the Chief Executive Officer (CEO), evaluates managerial performance, awards compensation, and oversees the firm's legal and regulatory compliance (Larcker & Tayan, 2016).

In its advisory role, the board draws on directors' expertise to help management set the operational and strategic direction of the firm (Larcker & Tayan, 2016; Linck et al., 2008). Participating in the strategy-setting process, the board actively works with management in debating and developing the direction of the firm (Palepu, 2012). A key aspect of the board's advisory role is helping management define the firm's risk appetite and risk tolerance (Lipton et al., 2018).

How the board oversees or advises management depends on the firm itself. According to Adams, Hermalin and Weisbach (2010), a firm's governance structure is endogenously determined. It is chosen in response to various characteristics such as past performance, size and complexity, and research or development demands (Coles et al., 2008; Hermalin & Weisbach, 1998; Linck et al., 2008; Markarian & Parbonetti, 2007).

### **1.3 Overview of methodology**

To test whether control cost differences between consumer and producer co-ops are associated with different governance structures, data from the Co-operative Business Survey (CBS) are used. The CBS is well suited for examining the relationship between endogeneity and corporate governance because it provides a single source of data for two organizational types, and these types fit within a single general classification — i.e., co-ops.

Analyses of the CBS is done using Principal Component Analysis (PCA), t-tests and Pearson's chi-squared tests. PCA is used to reduce dimensionality and see if there are underlying patterns in the data that map onto either control costs, or governance structures and behaviours. A series of Welch's t-tests and Pearson's chi-square tests are also conducted to see if there are statistically significant differences between consumer and producer co-ops in the original data. Results from these tests bolster the PCA and provide a second way of testing whether differences in control costs are associated with differences in corporate governance.

#### **1.4 Structure of the Thesis**

This thesis is laid out in the following manner. Chapter 2 discusses the endogenous nature of corporate governance and the problems that this creates. Corporate governance is believed to be endogenous because, first and foremost, it is hypothesized that a firm chooses its governance structures and behaviours to best respond to the conditions it faces and the features it possesses. There is an additional element of endogeneity in that the choice of governance measures is likely to affect the activities and characteristics of the firm, which in turn influence the governance measures in a feedback loop.

The expectation that firms choose their corporate governance in response to the conditions they face has implications for policy. Any attempt by government to specify a firm's governance structures or behaviours has the potential to reduce firm performance.

Also, there is the potential for missing variable problems, and consequently bias in econometric estimation, if a firm's choice of governance measures is conditional on its

characteristics. In addition to examining the biasedness that arises from missing variables, Chapter 2 examines how biasedness can arise from simultaneity and measurement error.

Chapter 3 lays out the theoretical underpinnings of corporate governance. The two theories discussed are agency theory and stewardship theory. As the dominant theoretical perspective in the corporate governance literature, agency theory is the foundation for most of the governance rules, regulations and best practices currently affecting firms. Stewardship theory is discussed as a counterpoint to agency theory.

Chapter 4 highlights select pieces of corporate governance. The research is divided into two groups, governance structures and governance behaviours. Roughly speaking, these groups encompass who sits on the board and what the board does, respectively.

Chapter 5 provides an overview of co-operatives in general and describes the differences between consumer and producer co-ops. Chapter 5 also details Hansmann's theory of ownership, and the factors associated with the cost of controlling the firm (also referred to as control costs herein). It is hypothesized that as the cost of controlling the firm rises, the more that oversight will be done by the board and the less it will be done by members (i.e., owners).

Chapter 6 discusses the CBS in detail, providing information about the methodology behind the study's data, and the variables the CBS contains. Variables are broken down into two different groups: the factors that influence control costs, and governance structures and behaviours.

Chapter 7 provides descriptive statistics looking at the CBS as a whole. Chapter 8 uses the methodologies mentioned earlier (PCA, t-tests and chi-square tests) to compare consumer and producer co-ops. Comparisons are made between consumer and producer

co-ops to see if the organizational types differ in terms of 1) the factors that influence control costs, and 2) their corporate governance structures and behaviours. The intent is to see whether consumer and producer co-ops map onto the factors that are associated with high and low control costs, respectively, and to see if consumer co-ops are associated with increased levels of monitoring by the board.

Chapter 9 concludes the thesis. It summarizes the results presented in Chapter 8 and provides alternative interpretations to some of the conclusions drawn. Chapter 9 also details the policy ramifications if corporate governance is endogenously determined, as well as describing future avenues of research.

## **1.5 Conclusion**

Effective, well-functioning corporate governance has been linked to firms' survival and longevity (Daily & Dalton, 1994; Mardjono, 2005; Platt & Platt, 2012). Various laws and guidelines direct firms to adopt a variety of practices that treat corporate governance as a one-size-fits-all phenomenon. However, a growing body of research argues that effective corporate governance is not one-size-fits-all. Instead, a firm's characteristics shape its corporate governance structures and behaviours.

This thesis looks at the link between a firm's characteristics and its governance structures, at how differences in control costs are associated with differences in managerial oversight. The prediction is that as the cost of controlling the firm rises, owners will be less inclined to oversee management themselves. Instead, oversight will increasingly be done by the board. To test this hypothesis, consumer and producer co-ops are examined to see if the two organizational types have different control costs, and subsequently if they have different governance structures and behaviours.

Understanding how the co-op types differ, and whether these differences correlate with various aspects of corporate governance, is important. Findings that support the endogenous nature of corporate governance, that a firm's governance structure is tied to its characteristics, should give policymakers pause. Such findings call into question the effectiveness of blanket governance measures, or measures that borrow from one organizational type and are applied to another.

## Chapter 2. Endogeneity and Corporate Governance

This chapter explains the concept of endogeneity as it relates to a firm's corporate governance. Additionally, it outlines how the endogenous nature of corporate governance can cause biasedness in econometric estimation due to missing variables or simultaneity. The problem of measurement error is also discussed since it can also result in biased inferences.

A key assumption of this thesis is that a firm's governance structures and behaviours are endogenous because they are chosen by the firm in response to the firm's specific characteristics and its governance issues (Adams et al., 2010). In other words, governance structures are chosen by economic actors within the system of the firm.

The process of choosing a governance structure is not a one-time occurrence. Instead, the process is likely to involve a feedback loop. Firm-specific characteristics influence a firm's governance structures and behaviours. These structures and behaviours feed back into and change the firm's characteristics, which then influence the firm's corporate governance.

For instance, a complex firm may perform better with a larger, more professional board (Coles et al., 2008). A professional board is usually filled with directors who have strong business or financial acumen. To improve profits, such business-focused directors may push the firm to expand into additional markets, thereby increasing the firm's complexity.<sup>8</sup>

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<sup>8</sup> Alternatively, directors could consolidate the firm, pulling it out of unprofitable markets. This would make the firm simpler and might cause the firm to reduce its board size, because less complex firms do not require as many directors to be effectively governed (Coles et al., 2008).

If governance structures are optimally chosen based on a firm's specific characteristics, then policymakers should account for this connection when developing regulations, laws, or best practices. Blanket governance policies that treat all firms the same may actually be harmful. A common example is the application of governance measures originally intended for investor-owned firms (IOFs) to other organizational types such as co-operatives and non-profit organizations (NPOs).

Although co-operatives are not discussed in length until Chapter 5, it is enough to know that there are fundamental differences between IOFs and co-ops. These differences mean that IOF governance measures may exert undue pressure on co-operatives and hinder their performance (Pohler, 2018).

As for NPOs, board members are often donors who have made substantial contributions to the organization (Reiser, 2007). These contributions create a financial relationship between the director and the organization. Definitions of independence taken from IOF governance measures that do not recognize the donor-director dynamic (and thereby prevent donors from sitting on the board) may reduce the number of potential directors or reduce the donations an NPO receives, since major donors often make contributions with the expectation of a board seat (Reiser, 2007). In other words, strict independence measures could impact an NPO financially and make it less effective.

If firms choose their governance measures based on the specific conditions they face, however, then these conditions should ideally be included among the variables used in an econometric analysis. Failing to include relevant, firm-specific characteristics can cause biased results, leading to incorrect inferences being made. Biasedness can also emerge in



regression analyses due to the feedback loop between firm-specific and governance measures.

Section 2.1 describes the endogenous process of choosing a governance structure, and it looks at how treating all firms the same can have sub-optimal results. Section 2.2 discusses missing variables and statistical inference. Section 2.3 looks at simultaneity and measurement error. Section 2.4 discusses how biasedness can be accounted for in corporate governance research, and Section 2.5 summarizes and concludes the chapter.

## **2.1 Corporate governance, endogeneity, biased inference, and policy recommendations**

According to Huse (2005a), “... there is no best way of designing a corporate governance system ... context and actors must be considered” (p. 68). How the board monitors or advises management largely depends on the firm itself. A firm’s governance structures are chosen optimally in response to specific characteristics, whether those characteristics are found at the firm or sector level. Put another way, governance structures arise endogenously because they are chosen in response to a firm’s particular governance problems or demands (Adams et al., 2010). This often means that there is no “best” corporate governance because different firms will have different characteristics, problems and demands. Consequently, different firms will have different governance needs.

In their survey of governance literature, Adams et al. (2010) provide a detailed explanation of endogeneity. They compare two hypothetical firms, A and B. The firms differ in three ways: their financial performance, a particular governance attribute, and a number of unknown, unobserved or unacknowledged firm-specific differences. For this example,

board size is used as the particular governance attribute, since it is the attribute Adams et al. use. Board size is also heavily discussed in the governance literature and is one of the variables examined in this thesis. Research on board size, along with research on other governance structures and behaviours, is presented in Chapter 4.

Figure 2.1 shows how the firms differ in terms of their performance and board size. Compared to B, Firm A has better performance and a smaller board. Ostensibly then, board size appears to be negatively related to firm performance and recommending boards be kept small seems sensible. However, the relationship changes if the reasons why the firms differ are considered.

**Figure 2.1** Naïve view of the relationship between board size and firm performance

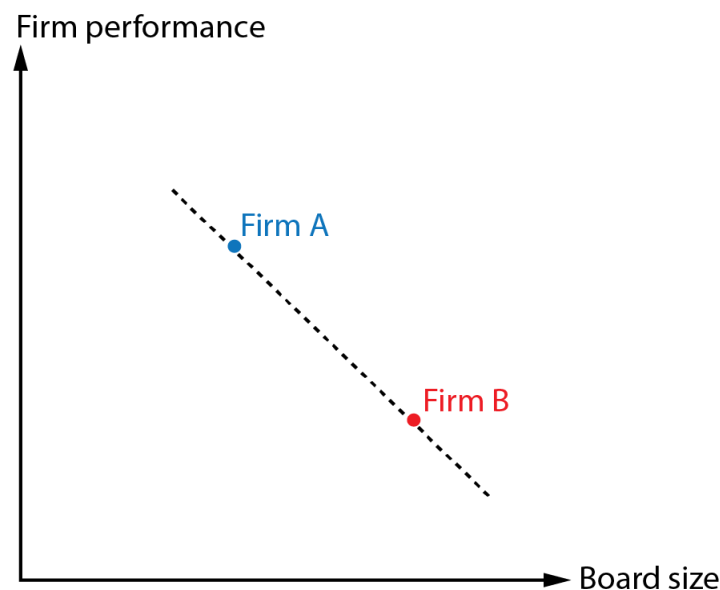
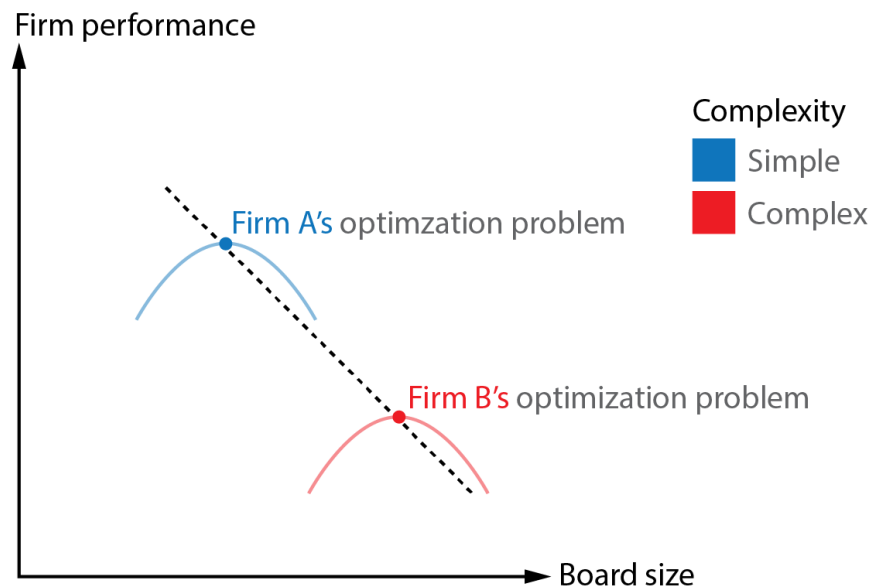


Figure 2.2 replicates Figure 2.1 but adds complexity, a variable that was omitted from the earlier model.<sup>9</sup> Research by Coles et al. (2008) suggests a firm's board size is predicated

<sup>9</sup> Figures 2.1 and 2.2 show the missing variable problem. The inference based on Figure 2.1 is incorrect because it does not account for complexity, which is omitted from the model. If the model were complete and had all the relevant variables, there would be no missing variables. It is important to note that expanding the

on its complexity. Managers of complex firms are likely to have greater advising needs than managers of simple firms. Large boards may be able to give more (or better) advice, because they have greater expertise and experience. Consequently, complex firms require larger boards than simple firms. Firm B should have a larger board than Firm A because Firm B is more complex.

**Figure 2.2** Understanding the relation when the omitted variable is included



In effect, what Firm B is doing is optimizing its board size based on its complexity. If Firm B were to reduce its board size to be more in line with Firm A, Firm B's performance would suffer. Despite the naïve conclusion drawn from Figure 2.1, Firm B has not made a

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model to include complexity is likely not enough to correct for omitted variable bias. It is almost certain there are other variables affecting complexity, board size and performance. By not including these variables in the model, the missing variable problem persists.

mistake. Having a larger board is Firm B's best response to the constraint it faces — i.e., to the fact that it is more complex than Firm A.<sup>10</sup>

Bearing in mind that complex firms may need larger boards because their managers require more advice, recommendations specifying that boards should not exceed a certain size (e.g., Jensen (2010a) suggests that boards not exceed eight directors) may be detrimental if applied to all firms, regardless of their complexity.

The key idea is that a firm's corporate governance is a choice variable. A firm chooses its optimal governance structures and behaviours. If policymakers specify a maximum board size, for instance, firms lose that ability to choose. Complex firms requiring more directors than the maximum allows will be forced to settle on a board size that is sub-optimal, rather than optimal. In turn, the complex firm's sub-optimal governance may decrease its performance.

Complexity is not the only variable that can affect a firm's corporate governance, however. Other firm-specific characteristics, such as organizational type, influence the governance structure or behaviour a firm chooses. Research by Eldenburg et al. (2004) provides a practical example of how organizational type affects corporate governance.

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<sup>10</sup> It is worth mentioning that even if Firm B wanted to be more like Firm A (and move onto Firm A's curve), doing so could be difficult and costly (if not impossible). Generally, all organizations (including firms) are shaped by a variety of factors and constraints. For Firm B to shift its financial performance to be comparable to Firm A's would require more than changing a single governance characteristic. It would involve changing such things as why Firm B was formed, how it has evolved, and its competitive environment.

As North (1990) states, "Organizations are created with purposive intent in consequence of the opportunity set from the existing set of constraints," (p. 5). In other words, firms are created and exist within a particular set of circumstances that restrict what they can do.

### *2.1.1 The effect of organizational type on corporate governance*

According to Eldenburg et al., different types of hospitals will have different governance structures because the hospitals' firm-specific characteristics will vary. Whether a hospital is for-profit, non-profit, a religious non-profit, government-run, or a teaching institution will shape board composition.

Religious hospitals have the highest percentage of inside directors, and these directors are usually members of the religious order that operates the hospital. For-profit hospitals have the highest percentage of outside executives on their boards. This pattern fits with the assertion that corporate governance is endogenous; different types of hospitals have different governance structures.

Alongside board composition, board size also differs between hospital types. Religious, teaching, and non-profit hospitals have boards that are twice as large as government hospitals. Both board size and composition are relatively stable over time, leading Eldenburg et al. to conclude that many hospitals have predetermined ratios for board composition. They cite the example of the Carondelet St. Joseph's hospital in Tucson, Arizona. Its board is comprised of six lay members, six physicians, and six Sisters. Although positions may turnover, "the hospital's tradition is that the number of board members in each category remains constant," (Eldenburg et al., 2004, p. 537).

What Eldenburg et al. show is that different types of organizations or firms will have different board features, because each type has a different objective function, as well as different internal and external constituents. Other characteristics, such as firm size (Boone et al., 2007), research and development demands (Linck et al., 2008) or the cost of gathering information about a firm (Duchin et al., 2010), also shape a firm's governance

structures and behaviours. Because external factors, such as market demands or the regulatory environment, can shape a firm, it is useful to expand the definition of firm-specific to include characteristics from a broader context.

According to Adams et al. (2010), a firm chooses its governance structures and behaviours in response to the governance issues it faces. These governance issues are rooted in the firm's characteristics. A firm's characteristics, and subsequently its governance measures, are shaped by both the economic actors within the firm and by the broader context the firm sits in. Failing to account for this conditionality, that a firm's governance measures are conditional on its characteristics, may bias the results of corporate governance research.

## **2.2 Missing variables and statistical inference**

The problem with not accounting for all the characteristics affecting a firm's corporate governance is that it can potentially bias any inferences made. In a regression model, parameter estimates will be biased if the error term correlates with both the dependent variable and one or more of the explanatory variables. This can happen in corporate governance research if key determinants, such as complexity, are omitted from the regression model. If these omitted variables correlate with an explanatory variable, then their impact will be captured in the explanatory variable's coefficient, thus biasing it.

In one of the earliest acknowledgments of the effects of omitted variable bias, Demsetz and Lehn (1985) maintain that any direct relationship between the concentration of shareholder ownership (i.e., the amount of stock controlled by the firm's largest shareholders) and firm performance may be spurious. According to the authors, both

ownership concentration and performance are a function of the noisiness and uncertainty of a firm's environment. Changes in factors such as input prices, technology or market share influence how a firm performs and how diffuse its ownership is.<sup>11</sup> Similar to Demsetz and Lehn, Boone et al. (2007) recognize that a board's size and independence may be endogenous to a firm's economic environment.

According to Himmelberg et al. (1999), managerial ownership (i.e., how much of a firm's shares are owned by management) and performance are endogenously determined by a firm's contracting environment. Unable to determine what influences ownership and performance (i.e., there are omitted variables), Himmelberg et al. offer examples of potential instrumental variables, such as firm size or stock price volatility, that could be used to counter biasedness.<sup>12</sup>

Himmelberg et al. conclude that, after accounting for omitted variables, differences in firm valuation may result from differences in managerial oversight. Firms that allocate more resources to overseeing management will have higher valuations than firms that allocate less resources.<sup>13</sup> Any analysis of the relationship between managerial ownership and firm performance that does not consider monitoring quality (or other governance mechanisms used to control management) would result in a spurious negative relationship.

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<sup>11</sup> Demsetz and Lehn (1985) maintain that the less predictable a firm's environment, the greater the effect managerial behaviour can have on firm performance and the harder it is to monitor. Therefore, it is beneficial for owners to exert tighter control when the environment is noisier and more uncertain to ensure that managers behave appropriately.

<sup>12</sup> Himmelberg et al. (1999) use firm fixed effects and instrumental variables to mitigate the endogeneity issue. However, neither method provides insight into what the actual factors are within a firm's contracting environment that influence both performance and managerial ownership. This is because both methods are designed to deal with factors that are not, or cannot be, observed or included in the regression model (i.e., variables contained within the error term).

<sup>13</sup> The owners of Firm A are able to use lower levels of managerial ownership because they can see what managers are doing. It is only when managerial behaviour is hidden from owners that there is a need for high-powered incentives that are tied to firm performance.

Failing to account for firm-specific differences in managerial control could lead to biased results and incorrect inferences.

Using the theoretical work of Hermalin and Weisbach (1998), Wintoki et al. (2012) provide another example of an omitted variable. According to Hermalin and Weisbach, highly-talented CEOs will be monitored less because they have the status to influence director selection. This status is based on the assumption that firm performance is positively linked to managerial talent; the more talented the CEO, the better the firm will perform.

To keep them happy, talented CEOs are allowed to influence director nominations. And because they want to be subject to less oversight, talented CEOs select inside directors who are less willing to monitor management. For Hermalin and Weisbach, firm performance is positively associated with managerial talent, which in turn is negatively associated with board independence. If talent is overlooked, then a spurious negative correlation appears between firm performance and board independence.

Alongside highlighting the issue of omitting managerial talent when looking at the oversight of management, the Hermalin and Weisbach model also calls attention to another variable that is often overlooked in the analysis of corporate governance — a firm's past performance. The bargaining power of a CEO is contingent on her firm's performance. Poor performance is (partially) equated to untalented management and can lead to the CEO's dismissal. New CEOs lack the bargaining power of more tenured management, and so cannot decrease a board's independence or diminish its monitoring abilities.

In a similar vein, Bhagat and Black (2001) suggest that past firm performance shapes current board independence. "[L]ow profitability firms respond to their business troubles



by following conventional wisdom and increasing the proportion of independent directors on the board,” (p. 233). Past performance shapes a firm’s current governance structures which, in turn, shape its future performance. Other authors have noted similar relationships.

Examining the relationship between CEO power and firm performance, Li (2016) finds that past performance has a positive relationship with CEO power, and CEO power negatively affects future performance. “When a firm performs well, its CEO gets most of the credit and could be entitled with more power” (p. 152). Li represents CEO power as the difference in pay between the CEO and the second most-senior person in the firm. This gap is negatively associated with future firm performance, meaning that past performance influences a CEO’s power which then influences future performance.

Looking at what boards do, work by Brick and Chidambaran (2010) suggests that prior firm performance is negatively related to levels of board monitoring. Comparable results are reported by Vafeas (1999a). Poorly performing firms increase their boards’ monitoring activities.

Adams (2005) also finds that monitoring levels differ between firms, but she concludes that it is not necessarily due to past-firm performance. Instead, the degree to which the board monitors management differs based on firm size and diversification. Specifically, the larger, more diversified firms engage in heightened degrees of monitoring.

Adams’ results suggest that it is not just past performance that can affect governance structures, but other firm-specific characteristics as well. Other research supports her findings. For instance, more complex firms have larger boards with more outside directors (Coles et al., 2008). The proportion of women and minorities on the board is positively

related to firm and board size (Carter et al., 2003). High managerial ownership (i.e., the percentage of shares owned by the CEO and senior management) is associated with smaller, less independent boards (Linck et al., 2008). And the effectiveness of independent directors has been linked to a firm's information costs (Duchin et al., 2010).

In general, a firm's corporate governance is shaped its characteristics and context. A firm's past performance, its size and complexity, the power of its CEO, the resources it dedicates to monitoring management, the sector it inhabits, and its contracting environment are only some of the specific characteristics that can shape a firm's governance structures and behaviours.

Often the success of a firm's corporate governance is gauged on how the firm performs; better governance is associated with better performance. However, any perceived association may be distorted if firm-specific characteristics, such as complexity, are overlooked or omitted. Yet, omitted variables are not the only source of biasedness affecting the performance/governance association or, for that matter, corporate governance research in general. Simultaneity or measurement error may also distort the association.<sup>14</sup>

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<sup>14</sup> There is significant overlap between the issue of omitted variables and the issue of measurement error, although the two are conceptually different. While the omitted variable is simply not present in the regression model, measurement error occurs because the proxy variable poorly captures the variable of interest. Still, both issues centre around key variables not being included in the regression model — either a variable is overlooked, or it is replaced by a misspecified proxy. In the case of measurement error, it is assumed that if the actual variable of interest were included in the model (i.e., if it were not omitted), then biasedness might be mitigated.

## **2.3 Simultaneity and measurement error**

### *2.3.1 Simultaneity*

Simultaneity occurs when the response variable both determines, and is determined by, the explanatory variable — i.e., when the explanatory and response variables influence each other. As discussed earlier in this chapter, the feedback loop between the situation and conditions faced by a firm and its governance behaviours and structures suggest that simultaneity may be an issue.

An example of simultaneity can be seen in the research by Faleye et al. (2011). In their analysis of the effect of board monitoring on firm performance, Faleye et al. recognize that while their results suggest a causal relationship whereby excessive monitoring of management by the board harms firm performance, it could also be the case that poorly performing firms need increased monitoring by directors.

To control for the potential endogeneity issue, Faleye et al. use a natural experiment involving an exogenous event — the passing of the Sarbanes Oxley Act (SOX). SOX mandated that audit committees be entirely staffed with independent directors to increase managerial oversight and monitoring. By controlling for firm performance prior to SOX and restricting their analysis to firms with low levels of monitoring before the legislation was passed, Faleye et al. believe they have isolated the effect of monitoring on firm performance. Their assumption is that any firm that increased monitoring levels did so in response to SOX and not because of poor firm performance.

While Faleye et al.'s use of a natural experiment to counter simultaneity may mitigate endogeneity to some degree, how they define monitoring intensity may introduce endogeneity in another way — through measurement error. Faleye et al. base their

assessment of monitoring intensity on committee membership. Accordingly, a director is monitoring-intensive if she sits on at least two of three committees: audit, compensation, or nominating and governance.

The issue with Faleye et al.'s definition is that simply sitting on a board does not necessarily equate to actually monitoring management. Measuring the level of oversight management is subject to is difficult. While board service may be an available proxy, if it fails to adequately capture monitoring levels, then Faleye et al.'s results may suffer from an a degree of measurement error.

### *2.3.2 Measurement error*

Most empirical studies of corporate governance use proxies for unobservable or hard to measure variables (Roberts & Whited, 2013). For example, director independence is the degree that a board is free of managerial influence and able to act as a neutral arbiter and monitor (Marnet, 2005). Independence is commonly measured as the proportion of directors who are not employed by the firms they oversee (Reiser, 2007). These outside directors are considered "independent" because they are not financially reliant on management.

The problem is that independence is hard to measure. The percentage of outside directors on a board is easy to see, but it may not capture actual independence when directors act as professional monitors, offer constructive criticism, and resist the influence of management (Fama, 1980; Fama & Jensen, 1983; Marnet, 2005). Using outside directors as a proxy for independence may result in measurement error.

The difference between the omitted variable (e.g., director independence) and the proxy variable (e.g., the number of outside directors on the board) is part of the regression model's error term. If that measurement error is unrelated to any of the explanatory variables, then the risk of bias is lowered. However, the common assumption is that measurement error is correlated with the proxy, thereby biasing the coefficient of the mismeasured variable (Roberts & Whited, 2013).

In the case of director independence, if there is an aspect of actual independence not captured by the proportion of outside directors on a board, then there may be a measurement error problem. As an example, research by Hwang and Kim (2009) suggests that that functional independence is a combination of two things. First, a director must not be financially tied to the firm she oversees. Second, a director must not being socially connected to the CEO.

If only the conventional measure of independence (i.e., that a director not be an employee) is included in the regression model, and the social aspect is overlooked, even though it correlates with the response variable, then the estimated coefficient of director independence will be biased. This means the direction and the magnitude of the estimate will not accurately reflect the true relationship between board independence and the response variable. To correct for this bias, a number of statistical techniques are used, some of which are discussed below.

## **2.4 Accounting for bias in corporate governance research**

To deal with the bias resulting from endogeneity, a variety of statistical techniques have been employed, including instrumental variables (Himmelberg et al., 1999), lagged

variables (Vafeas, 1999a), two-stage (2SLS) and three-stage least square (3SLS) regressions (Coles et al., 2008), fixed effects (Linck et al., 2008), general methods of moments estimators (Wintoki et al., 2012), and natural experiments (Faleye et al., 2011).

According to (Coles et al., 2012), the success of many of these econometric solutions is limited, however. Specifically, “the use of proxy variables, fixed effects and instrumental variables does not generally provide a reliable solution to the endogeneity problem,” (Coles et al., 2012, p. 150). Proxy variables are frequently insufficient because they are only weakly related to the unobservable exogenous variables. Fixed effects only work if the unobserved firm characteristics are time invariant. Both Wintoki et al. (2012) and Coles et al. (2012) argue that fixed effects actually vary both across firms and within firms over time. Lastly, it is difficult to find instrumental variables required in 2SLS and 3SLS regressions that correlate only with the endogenous explanatory variable and not the error term (Himmelberg et al., 1999; Roberts & Whited, 2013).

In general, unless a controlled experiment is used, biasedness may never be completely removed from an analysis, even if it is accounted for using various econometric or statistical methods (Roberts & Whited, 2013; Chenhall & Moers, 2007b). This is because of two things:

1. No model is ever complete or totally accurate, so there is always a chance that measurement error, simultaneity, or an omitted variable biases regression results; and
2. The error term is unobservable, so there is no way of empirically testing whether it is correlated with an explanatory variable.

So, while statistical methods for dealing with biasedness may mitigate the issue, there is no guarantee that any bias arising from endogeneity is sufficiently reduced or removed to make proper inferences (Van Lent, 2007). This means theory, logic, and common sense should be used to help determine the influence of endogeneity (Chenhall & Moers, 2007a). Alternative specifications or models should be explored, and explicit discussions of when a variable may be considered exogenous, or (potentially) endogenous, should be laid out (Van Lent, 2007).

Recognizing biasedness, and that it is unlikely to be completely removed from regression analysis no matter what steps are taken, is important when reviewing research on corporate governance. There is always the chance that the explanatory variable is correlated with the error term making any inferences drawn from the results incorrect (at worst) or suspect (at best).

## **2.5 Conclusion**

This chapter examined the endogenous nature of corporate governance and the implications that endogeneity has on policy recommendations. A firm's governance structures and behaviours are determined in response to firm specific characteristics such as complexity or organizational type. If policymakers fail to account for conditional nature of corporate governance and impose blanket measures that treat all firms the same, then firms that would otherwise benefit by deviating from a regulation or best practice are unable to do so. Consequently, a firm may have to choose corporate governance that is sub-optimal, instead of being able to choose its optimal governance structure or behaviour. As a result, firm performance may suffer.

### **Chapter 3. Corporate Governance, Agency Theory and Monitoring Management**

This chapter discusses the theoretical underpinnings of corporate governance, focusing on agency theory and its counterpoint, stewardship theory. Understanding the theory behind why corporate governance is necessary, and why management needs to be monitored, is important given the emphasis placed by this thesis on the board's oversight role.

Most corporate governance is based on agency theory. Agency theory assumes that managers and owners want different things and that managers will pursue their own self-interests at owners' expense. To curtail managerial opportunism, agency theory emphasizes the boards' oversight function.

By contrast, stewardship theory posits that some individuals place the interests of others ahead of their own. Managers are not necessarily self-interested actors only interested in their own wellbeing. Positioned as a counterpoint to agency theory, stewardship theory emphasizes the boards' advisory function. Given their differences, agency theory and stewardship theory lead to opposing conclusions about what a firm's corporate governance should look like. These conclusions along with the theories themselves are examined in this chapter, which is laid out in the following way.

Section 3.1 provides a general overview of corporate governance, including the board of directors. As the main body responsible for a firm's corporate governance, understanding the board is key; specific attention is paid to the two main duties of the board — to oversee management and to advise management. Section 3.2 details agency theory, how the theory informs corporate governance and what the theory's limitations are. This leads into Section 3.3, which describes stewardship theory. Based on the previous sections, Section 3.4



provides support for a key assumption of this thesis — that there will always be a need for managerial oversight. Section 3.5 concludes the chapter.

### **3.1 Corporate governance and the board of directors**

Understanding corporate governance starts with understanding governance in general. At its most basic, governance is the observable patterns of ruling over a particular social system, such as a family, organization, state, or territory (Bevir, 2012). Governance includes determining who has power, how those in power are held accountable, and whose voice should be heard (Institute on Governance, 2015). Simply put, governance is “who gets to decide what,” (Fulton et al., 2015, p. 3).

Corporate governance is more specific. Corporate governance is the “who gets to decide what” for corporate entities. Corporate governance is the set of rules designed to protect the interests of a firm’s owners and to safeguard shareholders’ rights (Shleifer & Vishny, 1997; Tirole, 2001). Responsibility for a firm’s corporate governance is thought to rest with its board of directors (Cadbury, 1992). And in this responsibility the board has two main roles: to oversee management and to advise management (Adams & Ferreira, 2007; Coles et al., 2008; Duchin et al., 2010).

As overseer, the board is expected to monitor management, to ensure management is acting in owners’ interests and to protect the firm from harmful behaviour, such as managerial shirking or fraud (Larcker & Tayan, 2016; Linck et al., 2008). The board hires and fires the CEO, evaluates firm and management performance, and awards compensation. The board also oversees legal and regulatory compliance, including the

audit process and reporting requirements, as well as adherence to industry-specific regulations (Larcker & Tayan, 2016).

As advisor, the board consults management about the operational and strategic direction of the firm (Adams & Ferreira, 2007; Linck et al., 2008). Compared to its role as overseer, the board's role as advisor is ill-defined (Adams et al., 2010). It may involve working collaboratively with management to develop strategy (Zahra & Pearce, 1989). Alternatively, it may be less hands-on. The board might simply approve strategy formulated by management (Larcker & Tayan, 2016); or offer general opinions, and provide guidance when problems arise (Adams & Ferreira, 2007).

Fundamentally, overseeing and advising engender different interactions between the board and management. With the advisory role, the board and management usually work collaboratively. This contrasts with the control perspective associated with overseeing management. With the control perspective, it is less about working with management and more about ensuring management behaves properly. Without oversight or control, management will act opportunistically. This belief, that management is opportunistic, is explored in the next section.

### **3.2 Agency Theory**

Introduced by Jensen and Meckling (1976), agency theory rose to prominence in the 1970s as a way to understand the stagnation that was being suffered by the United States (Dobbin & Jung, 2010). By building large, diversified companies to protect themselves from economic downturns, CEOs had emphasized firm size over profitability and were seen as serving themselves instead of shareholders. Consequently, managers needed to be

incentivized to place the interests of shareholders ahead of their own. Agency theorists devised numerous governance measures to curb managerial opportunism, such as pay-for-performance compensation schemes (more about these governance mechanisms in Chapter 3). These governance measures are based on two assumptions from agency theory — that there is goal conflict and that there is information asymmetry (Eisenhardt, 1989).

1. **Goal conflict:** Principals (assumed to typically be the owners of a firm who are represented by the board) and agents (a firm's managers) have differing objectives. Since the agent is opportunistic and wants something different than what the principal wants, if given the chance, the agent will pursue her own interests instead of the principal's.
2. **Information asymmetry:** The agent's actions are important to the principal, because those actions affect the principal's payoff.<sup>15</sup> But, the agent's actions are not directly observable by the principal (Dixit, 2002). The principal does not know what the agent is doing, and therefore cannot tell whether the agent is acting for, or against, the principal's interests (although the principal can infer, to some extent, what the agent has done by observing the outcomes of the agent's actions — see below). In other words, there is the risk (i.e., the hazard) that the agent acts opportunistically without the principal necessarily noticing it.

The combination of goal conflict and information asymmetry is referred to as moral hazard. Moral hazard can be mitigated (although not completely removed) by using the

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<sup>15</sup> According to Jensen and Meckling (1976), any time one party (a principal) engages another (an agent) to perform a particular service on the first party's behalf, an agency relationship is struck. Within the context of corporate governance, owners enter an agency relationship with managers, relying on managers to run the firm on owners' behalf.

proper incentives. Because the agent wants something other than what the principal wants and because her actions cannot be seen by the principal, the agent must be incentivized to act in the principal's interests. In other words, incentives can be used to mitigate the information asymmetry by aligning the agent's interests with the principal's interests.

For an incentive to be effective, however, it must be tied to an outcome that is at least partially observable (Miller, 2005). If the principal's desired outcome is observed (i.e., it happens), then the agent is suitably rewarded. If the outcome is unobserved, or it does not happen, then the agent may not be fully compensated.

Stock options are an example of an outcome-based incentive. Their value is linked to firm performance, which is assumed to be at least partially tied to the actions of management. In theory, the harder a manager works, the better the firm does, and the more her stock options are worth. If the manager shirks her responsibilities, firm performance suffers, and her compensation shrinks. Outcome-based incentives are supposed to align the interests of principals and agents because the agent's compensation is linked to the principal's desired outcome. For the owners and managers of a firm, the desired outcome is improved firm performance and increased profitability.

The issue with outcome-based incentives from a manager's perspective is that outcomes never perfectly correlate with her actions. Instead, outcomes are a combination of the manager's effort and random factors beyond her control (Miller & Whitford, 2007). Events beyond the manager's control, such as regulatory changes, shifting consumer tastes, or the emergence of new technologies, could cause a firm's performance to decline no matter what the manager does. This means outcome-based incentives are risky for the

manager because there is always a chance that she will not get paid, regardless of how hard she works.

In response to the risk associated with outcome-based incentives, managers will demand more pay. Thus, while owners can address the issue of moral hazard, the solution is both costly and imperfect. The amount of compensation required by managers to act in the interest of owners depends on the level of random noise associated with owners' desired outcome. The more noise, the more compensation managers will require, because increased noise makes it harder for the principal to determine how much of the outcome was due to the agent's effort.

### *3.2.1 Issues with agency theory*

Agency theory is commonly criticized for assuming that individuals are inherently self-interested; and for relying on extrinsic, pecuniary rewards to incentivize behaviour (Davis et al., 1997; Donaldson, 1990). By labelling all motivation as self-serving, agency theory does not capture the complexity of human actions (Davis et al., 1997). Emphasizing pecuniary rewards overlooks non-financial incentives such as trust, reciprocity, and fairness, all of which have been shown to be important motivators (Davis et al., 1997; Spear, 2004).

Work by Berg, Dickhaut and McCabe (1995) shows that instead of only being self-interested, people are also inclined to trust others. Rabin (1993) also suggests that trust and reciprocity motivate behaviour. None of this is to say that trust and reciprocity are better incentives than money. Instead, it shows that incentivizing proper behaviour may be

done in other ways, and not just through pecuniary rewards. Agency theory can be expanded to include other types of incentivization.

Alongside allowing for other incentives to motivate behaviour, agency theory's assumption of self-interest can also be relaxed. According to Buchanan (1996), all agency theory needs is that principals and agents have conflicting goals. The exact motivation does not matter. If there is no goal conflict, however, then the interests of principals and agents are aligned. The control-based governance measures prescribed by agency theory may be unnecessary (Eisenhardt, 1989). In such situations, the contrasting perspective of stewardship theory may be appropriate.

### **3.3 Stewardship theory**

Although agency theory dominates the corporate governance world, it has been challenged by stewardship theory. Developed by Donaldson and Davis (1991), stewardship theory assumes some people are trustworthy and naturally inclined to work towards the betterment of the organizations they serve. Managers are considered good stewards who collaborate with owners, instead of acting as self-serving agents who opportunistically ignore owners' interests (Donaldson, 1990; Van Slyke, 2006). Under stewardship theory, monitoring and controlling management are set aside in favour of advising management and giving management more freedom (Corbetta & Salvato, 2004; Daily et al., 2003; Sundaramurthy & Lewis, 2003).

Stewardship theory does not assume everyone will naturally act in the interest of the organization, however. Certain aspects of a person's character will make her more, or less, likely to behave as a steward. According to Davis, Schoorman and Donaldson (1997)

stewards are motivated by higher-order needs, including the desire to belong to a group, the need to be respected, and the ability to reach their full potential. Stewards are also intrinsically motivated. They do things because of an internal sense of satisfaction, and not because of external rewards, such as money.

Stewards feel a high degree of organizational identification. They define themselves in terms of the organizations they belong to (Ashforth et al., 2008). Stewards also have high levels of value commitment. This makes them more likely to accept an organization's goals and more willing to exert effort on its behalf (Mayer & Schoorman, 1992).

Finally, stewards tend to rely more on personal, rather than organizational, power. An individual's organizational power is contingent on a firm's structure and her place within the organization (Gibson et al., 2011). Personal power is based on interpersonal relationships (Davis et al., 2007), and comes from the individual herself and not the organization (Gibson et al., 2011).

Alongside the psychological factors, Davis et al. (1997) also mention three situational factors that increase the likelihood an individual will be a steward. First, individuals in an involvement-oriented situation, whereby power is distributed amongst the people who do the work, are more likely to be stewards. Second, individuals within a collectivist environment, where group goals are emphasized over personal ones, are more likely to be stewards. Third, individuals are more likely to be stewards in situations where power is more equally distributed.

Altogether, Davis et al. (1997) assemble a complex set of antecedents to stewardship relations. Unifying the factors is a strong sense of organizational identification and commitment. Stewards feel connected to the organizations they serve. Theoretically, this

means stewards will act in the organization's interest, without the need for substantial external rewards to incentivize behaviour.

There is some empirical evidence suggesting that stewards may produce better outcomes than agents, depending on the context and governance structures involved. According to Donaldson and Davis (1991), firms where the CEO also serves as the board chair outperform firms that separate the roles. Work by Van Slyke (2006) shows that as trust develops through repeated interactions, the need for control and monitoring lessens. If agents prove trustworthy, principals may treat them more like stewards, giving them increased freedom and responsibility. Control may be (re)asserted if agents behave poorly. The trick is properly determining whether someone should be treated as an agent or a steward.

Matching an individual with the appropriate governance structure is a big challenge. If there is a mismatch, then organizational performance suffers. A steward subject to agency-based governance requirements will feel stifled and mistrusted (Davis et al., 1997). An agent subject to stewardship-based governance, on the other hand, can abuse the freedom and trust she is given and opportunistically pursue her own interests at owners' expense.

### *3.3.1 Issues with stewardship theory: Selecting stewards versus agents*

The most pressing issue for stewardship theory is distinguishing between stewards and agents. Davis et al. (1997) acknowledge this, framing the problem as a matter of aligned, or misaligned, perspectives. If both the principal and the manager choose a stewardship perspective, the result is a "true principal-steward relationship designed to maximize the



potential performance of the group,” (Davis et al., 1997, p. 38). The manager acts as a steward, and gains utility from advancing organizational goals ahead of her own.

If both the principal and the manager choose an agency perspective, the result is a true principal-agent relationship designed to minimize potential losses to each party.

Appropriate control and incentivization structures are put in place to mitigate managerial opportunism. Both the principal and agent accept the controls, and agency costs are minimized.

Problems occur if the principal has a stewardship perspective and management has an agency perspective. For the principal hoping to attract stewards, it seems reasonable that she promotes the situational factors outlined by Davis et al. (1997). The problem is that this may attract opportunistic individuals posing as stewards. If a manager is “an agent in steward’s clothing,” she can exploit the open, unrestricted, and trusting environment promoted by stewardship theory. To prevent such a situation, agents need to be sorted from stewards. But, detecting agents is difficult for several reasons, not least because people are not very good at detecting deception.

### **3.4 The need for oversight and agency theory**

Although stewardship theory has been positioned as a counterpoint to agency theory, abandoning agency theory and its control perspective seems unreasonable. This is because it is difficult to distinguish agents from stewards, especially if the agent is intentionally deceptive. People are poor lie detectors when encountering someone for the first time, or

when they interact with a potential liar on a limited basis.<sup>16</sup> When trying to detect deception, they usually perform only slightly better than chance (Bond & DePaulo, 2006). Even experienced recruiters and interviewers miss when job applicants lie (Schmid Mast et al., 2011). Standard procedures screening for duplicitous hires may also be ineffective (Brody, 2010). And even if a manager is a steward when hired, there is always the chance that she changes.

Individual behavior can change. “Managers’ goals sometimes deteriorate into just wanting to be paid well, to live well, and to keep those operations going that they understand,” (Roe, 2005, p. 5). Managers many also become increasingly opportunistic as they acquire more power (Decelles et al., 2012).

Difficulty separating stewards from agents is only one reason why agency theory and managerial oversight can never be completely dismissed, however. A second reason is that the consequences of faulty, or absent, oversight are often severe. Unchecked opportunistic behaviour contributed to the 2007 financial crisis (Fligstein & Roehrkasse, 2013). Information asymmetry, opportunistic behavior by agents (i.e., executives, auditors and legal firms), and ineffective oversight exacerbated the collapse and fallout of Enron (Arnold & de Lange, 2004). Faulty oversight also contributed to the governance failures and corporate scandals of Nissan, Wells Fargo, and Lehman Brothers (Klepczarek, 2017; Pozen, 2018; Verschoor, 2016).

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<sup>16</sup> There is a body of literature that suggests peoples’ ability to determine if someone is lying improves the more they interact with that person. Through repeated interactions, people can weed out agents (i.e., individuals who lie or behave opportunistically) by looking at past behaviour (Ostrom, 2007). The problem is that by the time an agent is detected, significant damage may have been done. Before the Enron scandal broke, the company’s founder and former CEO, Kenneth Lay, was highly regarded. He advised members of Congress, spoke at economic conferences, and was invited to sit on various corporate boards (Gruley & Smith, 2002). Lay’s opportunistic behaviour was only detected as the firm began to collapse.

Co-operatives are not immune to opportunistic behaviour either. Several governance failures among co-ops have been attributed to poor oversight over management. These serve as further examples of the need for agency theory.

For instance, the collapse of the Saskatchewan Wheat Pool (SWP) was partially due to a lack of oversight (Fulton & Larson, 2009a). Instead of effectively controlling management, the board was unduly influenced by the SWP CEO, Don Loewen. According to one director, “Ideas did not get ... proper and adequate evaluation, if Lowen wanted to do it everyone would find a way to make it happen,” (Fulton & Larson, 2009b, p. 9). The board also lacked the expertise to effectively oversee management. Consequently, Loewen was able indulge his desire to make the Pool “the biggest and the best” grain company (Fulton & Larson, 2009b, p. 11). This led to a series of poor investment decisions which put the Pool in dire economic straits and saddled the co-op with significant debt and unprofitable acquisitions.

The demutualizations of Sunstate Credit Union in 1997 (Johnston, 2012; Mathews, 2000), or Diamond Walnut Growers (DWG) in 2005 (Hardesty, 2009), were, at least partially, prompted by managerial opportunism. In each case, senior executives experienced significant financial windfalls because of the conversion to an IOF, while members’ interests suffered because of the demutualization.

The theft of five-million dollars from the Ashby Farmers Cooperative Elevator by its former general manager, Jerome Hennessey, stemmed from failed oversight by the board (Bedord, 2019). During Hennessey’s tenure, the co-operative never conducted a financial audit or review. Because Hennessey had worked for Ashby Farmers for over thirty years, the board was comfortable letting him control all aspects of the financials, instead of subjecting Hennessey to a degree of oversight.

### 3.5 Conclusion

The board of directors is often described as having two roles — overseeing (or monitoring) management and advising management (see Coles et al. (2008), Cook and Burrell (2013), and Larcker and Tayan (2015) for examples). Of the two theories discussed in this chapter, agency theory emphasizes the board's oversight role, whereas stewardship theory emphasizes the advisory function.

This thesis focuses on agency theory, and the monitoring of management, for two reasons. First, there is always the chance that managers will behave opportunistically, so some degree of oversight is needed. Several of the control and oversight mechanisms based on agency theory are discussed next in Chapter 4.

Second, monitoring management is a key aspect of Hansmann's (1996) theory of ownership, which is the theoretical underpinning of this thesis. According to Hansmann, the cost of monitoring management is one of the considerations when determining the most efficient ownership structure of a firm. Monitoring costs, and Hansmann's theory, are covered in Chapter 5.

## Chapter 4. Current Corporate Governance Research

The purpose of this chapter is to highlight research on certain aspects of corporate governance such as board size, director independence or board involvement in nominating directors. It is important to note that only a small survey of the existing literature is offered. The research presented was chosen because it provides insight into the variables from the Co-operative Business Study (CBS) that are examined in this thesis.<sup>17</sup>

Over the past two decades, corporate governance research and reform have expanded exponentially (Aguilera et al., 2016; Coles et al., 2008). During this time, much of the focus has been on the board of directors (Huse et al., 2011). Commonly considered the linchpin of the corporate governance system, the board has the final responsibility for the functioning of the firm (Jensen, 2010b).

As discussed in Chapter 3, the board has two roles, to oversee management and to advise management. This chapter provides an overview of some of the research related to those roles, as well as to board composition. The research is divided into two categories: governance structures and governance behaviours. Governance structures pertain to the board's composition. They are looked at in Section 4.1. Governance behaviours are what the board, or management, does. They are looked at in Section 4.2. Section 4.3 concludes the chapter

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<sup>17</sup> Most of the research highlighted in this chapter pertains to investor-owned firms (IOFs) and not co-operatives. This is because most corporate governance literature focuses on IOFs. Whenever possible, research specific to co-operatives is included.

## 4.1 Governance Structures

Most corporate governance research focuses on board composition, on how a board is structured and who its directors are (Sur, 2014). This section highlights research on four of the most examined aspects of board composition — board size, female directors, independent directors, and director tenure.

### 4.1.1 Board Size

The prevailing sentiment is that as boards become larger, an organization's performance suffers. Smaller groups are believed to be more cohesive, more productive, and better able to monitor management (Jensen, 2010a; Lipton & Lorsch, 1992). Experimental evidence suggests that larger groups are less effective because of such problems as social loafing, free riding, and higher co-ordination costs (Latané et al., 1979). Also, as board size increase, board cohesion suffers (Lipton & Lorsch, 1992). More directors are less likely to share a common purpose, communicate clearly or equally, or reach a consensus.

Yet, the relationship between board size and firm performance may be more nuanced than simply “smaller boards are better.” The effect of board size may be contextually dependent. Research by Coles et al. (2008) suggests that for simple firms (i.e., firms that are small, undiversified, and not heavily reliant on debt financing), larger boards do negatively impact performance. On the other hand, complex firms (i.e., firms that are large, diversified, and heavily reliant on debt financing) with larger boards perform better than complex firms with smaller boards. This is because the senior managers of complex firms require more advice, which larger boards are more likely to provide (Coles et al., 2008; Boone et al., 2007).

In contrast with complexity, other firm-specific characteristics are negatively associated with board size. For instance, firms with high research and design expenditures or high levels of CEO ownership are associated with smaller boards (Linck et al., 2008; Boone et al., 2007).

#### *4.1.2 Female Directors*

There is evidence suggesting that female directors positively impact board and firm performance. After controlling for firm size, industry, CEO duality and board independence Carter et al. (2003) found increased firm value for companies with higher proportions of female directors. According to Bart and McQueen (2013), female directors tend to use cooperation, collaboration, and consensus building more frequently and effectively than male directors. And although it is commonly held that at least three women must be on a board to improve performance (Government of Canada, 2016; Konrad et al., 2008), Zaichkowsky (2014) states that even a single female director leads to better governance.

Female directors do not automatically improve a firm, however. According to Adams and Ferriera (2009), greater gender diversity positively impacts firms with weak governance, but negatively affects firms whose governance is strong. This is because gender diverse boards are associated with tougher oversight. If a firm already has strong governance, then increasing the number of female directors could result in management being over monitored which may hurt firm performance.

#### *4.1.3 Independent directors*

Conventional wisdom holds that independent, or outside, directors make better, more impartial decisions because they have no relationship with the corporation or its management (Business Roundtable, 2012). In turn, independent directors should improve firm performance. The most common credential for independence is that directors are not employed by the organizations they serve (Reiser, 2007). More extensive definitions bar a widening circle of relationships, prohibiting family members and corporate affiliates from having financial ties to an organization (Brennan, 2013).

Regardless of the specific definition, independence is intended to sever the financial link between directors and management. Inside directors (i.e., directors employed by the firm outside of their directorships) can be fired from their jobs. Outside directors can only be removed if they are voted out by qualified persons (e.g., investors, members, etc.), or are disqualified from holding their position (Foundation, 2003; Government of Canada, 2009; Government of Canada, 2012; Government of Canada, 2015; Kingdom, 2006). Independent directors should be able to better challenge management, because they do not fear being fired.

Whether independent directors are associated with better, or worse, performance is unclear. Research findings are mixed. In some studies, independent directors have little to no effect on overall firm performance (Bhagat & Black, 2001; Hermalin & Weisbach, 2003). In other studies, independence is associated with improved performance, including increased shareholder returns (Schellenger et al., 1989) and better company valuations (Daily & Dalton, 1992).



According to Hermalin and Weisbach (2003), there is no relationship between independence and improved performance because independent directors are more likely to be added to a board after a firm starts doing badly. Bhagat and Black (2001) similarly conclude that poor past performance pushes firms to adopt more independent boards.

Other firm-specific characteristics that influence the relationship between director independence and firm performance include a director's power (Fogel et al., 2015), the cost of gathering information about a firm (Duchin et al., 2010), or a firm's complexity (Coles et al., 2008; Klein, 1998). Overall, the relationship between independent directors and firm performance seems to be endogenously determined by firm-specific characteristics.

#### *4.1.5 Director tenure*

Stewardship theory posits that long-serving directors may lead to more cohesive boards, and allow for more efficient decision-making and improved firm performance (Cook & Burrell, 2013). Relatively young boards comprised of new directors may lack the unity or trust to effectively challenge management (Finkelstein & Mooney, 2003). Moreover, new directors may lack the expertise possessed by long-serving directors to oversee the firm (Wertheim et al., 2016).

In contrast to stewardship theory, agency theory suggests that longer-serving directors may be more inclined to serve management instead of owners. According to Vafeas (2003), long-serving directors are associated with significantly higher CEO compensation. Vafeas maintains that by inflating CEO salaries, long-serving directors put management's interests ahead of owners.

Along with being “management friendly”, long-serving directors may also be less effective at reviewing strategy because they are out of touch with changes in industry, technology, or regulations (Hymowitz & Green, 2013). Because of this, Lipton and Lorsch (1992) favour limiting director tenure to no more than 12 years.

There are contrary views to limiting how long a director can serve, however. Limits may interfere with the development of collaboration among board members. They may also interfere with directors’ acquisition of firm-specific knowledge or organizational memory (Katz & McIntosh, 2014).

In general, the corporate governance literature on the relationship between board tenure and firm performance is characterized by inconsistent findings (Livnat et al., 2019). Sometimes long-serving directors have been shown to help, other times to hinder. Part of the issue is that board tenure is endogenous, at least partially determined by firm performance.

Directors may stay with a firm if it is performing well (and leave it if it is not), and shareholders may be disinclined to push for new directors when the firm seems to be working (Livnat et al., 2019). Conversely, poorly performing firms may have trouble attracting new directors, and existing board members may stay longer than is optimal (Huang & Hilary, 2018). Instead, results suggest a positive relationship between director tenure and firm performance until directors have served a decade or so (Livnat et al., 2019; Huang & Hilary, 2018).

## 4.2 Governance behaviours

Research on board composition dominates the corporate governance literature (Forbes & Milliken, 1999; Pettigrew, 1992b; Zahra & Pearce, 1989). In contrast, little work has been done on what directors actually do. This focus on board composition has led to “good” corporate governance being treated as a “check-the-box” phenomenon (Lorsch, 2012b). The assumption is that simply having the prescribed number of independent directors, or female directors, or new directors (or any other characteristic commonly associated with good governance) will lead to a well-functioning board. The problem is that governance failures occur even with boards that have the “right” mix of directors. Enron’s failure exemplifies this.

At the time of its collapse, all but two of Enron’s fourteen board members were outside directors (Sonnenfeld, 2002; Gillan & Martin, 2002). Many of them had extensive backgrounds in finance and accounting. But despite having a board structure that “appeared to be at the leading edge of best corporate governance practices,” (Gillan & Martin, 2002, p. 21) Enron suffered one of the biggest corporate scandals in American history.

The problem, as Sonnenfeld (2002) observes, is that board composition is generally the same for companies regardless of whether their boards are well functioning or not.<sup>18</sup> Specifying who can sit on a board does not necessarily lead to good governance. Instead, greater emphasis should be placed on what boards do. To craft better governance

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<sup>18</sup> Sonnenfeld (2002) defines a well-functioning board as one whose members trust each other, challenge one another, and directly engage with senior management on the critical issues facing the firm.

measures, policymakers “need to know more about the structure and functioning of boards beyond customary preoccupations with size and composition,” (Pettigrew, 1992a).

So, while Section 4.1 of this chapter dealt with board size and composition, this section looks at how the board functions and what directors and managers do. Specifically, this section provides an overview of the following governance behaviours associated with overseeing management:

- Agenda setting for board meetings;
- Board involvement in selecting top management (aside from the CEO);
- Board involvement in director selection;
- CEO involvement in director selection;
- CEO compensation and pay-for-performance;
- Director communication with management, other than the CEO;
- The frequency of board meetings and board meeting preparation;
- The use of external advisors; and
- Board involvement in budgetary and strategic planning.

#### *4.2.1 Agenda setting for board meetings*

According to Kingdon (2011), an agenda sets what individuals attend to. For board meetings, the ability to set the agenda determines what is discussed and for how long it is discussed (Inglis & Weaver, 2003). Whoever controls the agenda determines what takes priority, where resources should be allocated, and so on.

Agendas are not set by individuals alone, however. They are also shaped by an organization’s culture, values, history, and practices (Sibson, 2010). For instance, in her

study of the board dynamics of a local, grass-roots sports organization, Sibson (2010) found that the concerns of female directors were routinely left off meeting agendas. This was partially because of the board chair's influence (who was male), and partially because of the way the organization was structured, with key positions on the board all held by the male directors.

#### *4.2.2 Board involvement in selecting top management (aside from the CEO)*

One of the board's primary tasks is hiring and firing the CEO (Business Roundtable, 2016). And while CEO selection and removal have received considerable attention, just as important is the board's role in selecting other members of the top management team (see Zajac (1990); Westphal and Fredrickson (2001); and Schloetzer et al. (2017) for examples of CEO hiring and firing). By getting involved in the hiring process, the board can ensure that new managers share the firm's corporate culture and values. The board can also use its involvement to foster a positive relationship with senior management. Senior managers may feel some loyalty to the board and be more sympathetic to its wishes, if the board was instrumental in their hiring, (Coles et al., 2014).

There are potential problems with board involvement in the hiring process, however. People of similar characteristics tend to gravitate to each other. Unless a board is careful, it may start to hire individuals who resemble its directors too closely — a “like hires like” scenario (Groves, 2007). This can lead to diversity issues or skill deficiencies as candidates are overlooked whose gender, ethnicity, or experience differ from the board's.<sup>19</sup>

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<sup>19</sup> According to Hansmann (1996), homogenous groups do not suffer the same co-ordination problems that more diversified, heterogenous groups do. Yet the cohesiveness of homogenous groups can lead to poor

The board may also lack the knowledge and skills needed to make effective hires. Outside directors, or directors who have only been on the board a short time, lack firm-specific knowledge (Fama & Jensen, 1983; Forbes & Milliken, 1999; Katz & McIntosh, 2014; Klein, 1998). Without this knowledge, directors might not understand the firm well enough to hire the right people. Directors may also lack experience hiring for senior executive positions (Harrell, 2016).

In general, board involvement in selecting top management may result in managers who are loyal to the board and possess values in line with the organization. But, it may also result in a management team filled with people ill-suited to their positions.

#### *4.2.3 Board involvement in director selection*

Director selection is the process whereby individuals are identified, screened, nominated, and elected (or appointed) to a corporate board (Withers et al., 2011). Control of the selection process is important because the quality of director appointments is ultimately what shapes a board's characteristics and determines its monitoring effectiveness (Vafeas, 1999a; Clune et al., 2014). If the selection process is dominated by management, then it is more likely that directors will be selected who are under the influence of the CEO (Jensen, 2010a). If the process is dominated by the board, then nominations are more likely to be consistent with shareholder interests (Vafeas, 1999b).

Extensive control of the nominating process by the board may be problematic for co-operatives, however. According to Birchall (2017), co-ops face two common challenges:

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decision-making as members quickly reach a consensus without properly exploring options or challenging each other's conclusions (Janis, 1973).

ensuring the board has the right expertise and managing the costs of a participative model of governance. To ensure the board has the relevant skills to oversee the firm, co-operative boards may have to take an active role in director selection. Potential directors may be chosen by, or at least endorsed by, the board (Kenkel, 2019).

While endorsing specific candidates can help address perceived board deficiencies, it can also ignore the fact that co-operatives are democratically controlled by their members. Endorsing specific candidates can also lead members to feel their interests are not being represented (Allaire, 2008; Silcoff & Strauss, 2015). Over the last ten years, a number of co-op boards have been criticized for being too controlling, and for restricting nominations to the point where otherwise suitable candidates were rejected due to a lack of financial acumen or desired expertise (Farrell, 2015; Pablo, 2012; Silcoff & Strauss, 2015).

#### *4.2.4 CEO involvement in director selection*

The ability to resist CEOs' influence is fundamental to the concept of director independence and "good" governance. If CEOs can influence director selection, they can fill the board with directors who are overly sympathetic to management. According to Cohen et al. (2012), the appointment of "cheerleaders" (i.e., directors supportive of management) is associated with a significant increase in CEO power. Coles et al. (2014) find that cooption reduces a board's monitoring effectiveness. Coopted directors (i.e., those directors with allegiance to the CEO because she was influential in their appointment) give management greater latitude, more discretion, and higher compensation.

Hermalin and Weisbach (1998) theorize that a CEO's influence over director selection is a function of her perceived ability relative to any potential successors. The process of

selecting directors is a bargaining game between the board and the CEO. The CEO wants the board to be less independent and more under her sway, whereas the board wants to be more independent.

The CEO's bargaining power in the game depends on the firm's performance, and on whether the CEO can be easily replaced. Poor firm performance reduces a CEO's perceived ability relative to any potential replacement. Consequently, she may be fired — which is what happens if the CEO loses the bargaining game. If the board wins the bargaining game and replaces the CEO, then director nominees are at least partially free of managerial influence because the new CEO does not have enough power to sway the selection process.

Well-performing CEOs, on the other hand, cannot be easily replaced and so have greater bargaining power. This gives them influence in the director selection process.

Unsurprisingly, powerful CEOs tend to suggest directors who share their demographics, specifically age, education, and background (Westphal & Zajac, 1995). Antecedents to CEO influence include CEO tenure, CEO duality (i.e., the CEO is both chief executive and board chair), and lower stock ownership among board members, — with longer service, duality, and lower equity ownership all positively associated with power.

Overall, CEO involvement in director selection is associated with diminished board performance. If given the opportunity to influence director selection, management may select board members who will exercise less control or oversight, thereby giving the CEO greater freedom to operate unchecked.



#### *4.2.5 CEO compensation and pay-for-performance*

Within its oversight function, one of the most important things the board does is set CEO compensation. The compensation policies chosen by the board play an important role in aligning the interests of owners and managers (Gillan, 2006). Most schemes focus on the relation between CEO compensation and changes in firm value (Murphy, 2012). The overall intent is to tie changes in managers' wealth to changes in shareholders' wealth — what Jensen and Murphy (1990) refer to as the “pay-performance sensitivity”.<sup>20</sup>

Theoretically, higher pay-performance sensitivity should indicate closer alignment of CEO and shareholder interests. This is because both managers and shareholders share the same objective of wealth maximization. Increasingly, CEO compensation is tied to a firm's financial or stock-market performance in an attempt to synch pay with corporate results (Thurm, 2013).

Equity holdings are believed to align the interests of managers and shareholders, because managerial compensation is directly tied to how well the firm does (Dobbin & Jung, 2010). In theory, managers will try to improve shareholder value because they are shareholders themselves. This alignment between investor-owners and management does not always happen, however.

Equity ownership can lead managers to focus on short-term stock price changes instead of long-term performance (Murphy, 2012). Compensation schemes heavily reliant on stock-options have associated with increased incidents of earnings management (Burns & Kedia, 2006; Efendi et al., 2007). These schemes have also been linked to extreme

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<sup>20</sup> Pay-performance sensitivity is the change in a CEO's wealth associated with a change in the wealth of shareholders (Jensen & Murphy, 1990).

corporate performance of either big gains or big losses – with losses occurring more frequently than gains (Sanders & Hambrick, 2007).

For traditionally structured co-ops, equity ownership schemes are not possible. Co-op ownership is based on one membership per person and memberships do not usually increase in value, so equity ownership has diminished value to a manager (Trechter et al., 1997).

#### *4.2.6 Director communication with management, other than the CEO*

To fulfil their monitoring role, outside directors need to have appropriate information about the firm (Nowak & McCabe, 2003). Most of the information the board receives is usually controlled by the CEO (Adams, 2011; Nowak & McCabe, 2003). Communication with senior management, other than the CEO, may provide directors with information they might otherwise not have access to (Sonnenfeld, 2002). However, discussion between managers and the board, without CEO input or control, may undermine the CEO's authority, or expose the board to conflicting, irrelevant, or excessive information (Sonnenfeld, 2002). By acting as a gatekeeper, the CEO can filter what information the board receives.<sup>21</sup> Without that filter, the board may be exposed to inappropriate information that can adversely affect their decision-making (Bastardi & Shafir, 1998).

Alongside concerns about what information the board receives from senior managers, or whether board communication with senior management reduces a CEO's power, there is

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<sup>21</sup> Agency theory suggests that CEOs are reticent in giving any information that can be used against them by the board. However, the Nowak and McCabe (2003) survey of directors, and theoretical work by Adams and Ferreira (2007) suggests that CEOs are not necessarily antagonistic towards the board. They may be willing to share information under the right circumstances; either the CEO puts the firm's interests ahead of her own (i.e., behaves as a steward), or she trusts the board enough to believe the information will not be used against her.

also the problem of managers being pulled from their regular tasks in order to satisfy a board's requests for information. If information is not readily available, then requests for it can cost unreasonable amounts of employee time and money (Beck, 2016). This can lead to resentment from managers whose resources are stretched to satisfy the board's informational demands.

#### *4.2.7 Frequency of board meetings and board meeting preparation*

In their heavily cited work on improving corporate governance, Lipton and Lorsch (1992) advocate more frequent board meetings, at least bimonthly. Meeting should last a full day (including committee sessions and other related activity), and directors should spend a day preparing in advance. In total, Lipton and Lorsch estimate the time required for effective oversight to be approximately 100 hours annually — a commitment that increases for more complex firms.

There comes a point, however, when demands are too great and directors are unable to adequately meet time commitments (Lorsch et al., 2009). Things become further strained for board members with multiple directorships. According to the Busyness Hypothesis, serving on multiple boards overcommits directors, impeding their ability to oversee management (Clements et al., 2015; Ferris et al., 2003).

Evidence of the Busyness Hypothesis is mixed. Research by Core et al. (1999), and Beasley (1996), suggests the Busyness Hypothesis has some validity. Higher percentages of busy directors on a board are associated with higher levels of CEO compensation (Core et al., 1999), and an increased likelihood of financial statement fraud (Beasley, 1996).

Cashman et al. (2012) conclude that busy directors are overcommitted, limiting their ability to monitor and advise management. Consequently, firm performance suffers.

Contrary to the Business Hypothesis, Fama and Jensen (1983) argue that accomplished directors are rewarded with additional board appointments — i.e., reputation matters. Ferris et al. (2003) find that directors of firms that are doing well hold more seats in the future. Busy directors (i.e., directors holding at least three seats) may improve firm performance, as long as the majority of their directorships are within the same industry (Ferris et al., 2003).

#### *4.2.8 Board expertise and the use of external advisors*

Corporate governance best practices, legislation, and empirical research all stress that board members should have the requisite expertise to properly oversee their firm (Business Roundtable, 2012; 2002). As an example, Canada's Office of the Superintendent of Financial Institutions (OSFI) expects the boards of federally regulated financial institutions (including credit unions) to have a sufficient financial industry and risk management expertise (Office of the Superintendent of Financial Institutions, 2013).<sup>22</sup> A well-rounded board needs more than financial acumen, however. A variety of skills, experience and perspectives are required to guide an organization's strategy and overall operations.

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<sup>22</sup> The OSFI is an independent federal government agency that regulates all banks in Canada, as well as all federally incorporated or registered trust and loan companies, insurance companies, cooperative credit associations, fraternal benefit societies and private pension plans (Office of the Superintendent of Financial Institutions, 2017).

Instead of controlling the director nomination process, another way for the board to ensure it has the necessary knowledge to effectively guide the firm, is to engage external advisors. While external advisors may help compensate for skill deficits on the board, their expert advice has its limitations. For example, experts are more likely to base recommendations on their own preferences, ignoring the preferences of those they are advising (Hadar & Fischer, 2008).

The validity of an expert's advice depends on how easily she can decipher the situation, and how familiar she is with what to do (Kahneman & Klein, 2009). In other words, for an expert's advice to have merit, she must have the skills and expertise to recognize what is going on.

#### *4.2.9 Board involvement in budgetary and strategic planning*

As mentioned, the board has two roles — as a monitor and as an advisor (Larcker & Tayan, 2015). Governance regulations and best practices often emphasize the monitoring aspect of the board's duties. Director independence, limits to board tenure, requirements for financial acumen, and equity ownership are all designed to help directors better control management.

Providing advice and guidance is just as important, however. Evidence suggests a positive association between firm performance and board involvement in strategic planning (Judge & Zeithaml, 1992). Additionally, policymakers and large-block shareholder (such as pension funds) favour greater board involvement at the strategic level (Judge & Zeithaml, 1992; Scherrer, 2003). But the level of board involvement in strategic planning depends on several factors.

Pugliese and Wenstøp (2007) assert that directors' overall involvement in strategy is positively associated with regular board evaluations, boards with diverse skills and expertise, directors' familiarity with the firm, and how much directors are intrinsically motivated to serve on the board. Judge and Zeithaml (1992) suggest that larger boards, boards of highly diversified firms, and boards of new firms tend to be less involved in strategic planning.

There is conflicting evidence whether insider or outsider directors are more involved in the strategic decision process. For example, while Judge and Zeithaml (1992) maintain that insider representation is negatively related to the board's involvement, Zahra and Pearce (1990) find the opposite. As the proportion of outside directors increases, a board's overall involvement in strategy decreases, especially strategy formulation and mission development.

According to Westphal (1999), CEOs are more likely to seek advice, and outside directors are more likely to give advice, on strategic issues if there are social ties between the chief executive and the director. Yet research by Hwang and Kim (2009) suggests that social ties inhibit directors' ability to oversee management. So, while directors that are socially connected to the CEO may have better access to information and offer better advice, they may also be less likely to control management. To offer a suitable mix of control and guidance boards may have to balance the how close directors are with the CEO. Too many ties and the board will leave management unchecked, too few and the board will be starved for information.

### 4.3 Conclusion

Throughout this chapter, there is evidence that a firm's corporate governance is endogenously determined in response to a variety of firm-specific characteristics. There is also evidence that firm-specific characteristics influence whether a particular governance structure or behaviour helps or hinders a firm. For instance, large boards may be necessary for complex firms with management that requires greater advice and guidance (Coles et al., 2008). Conversely, large boards may negatively impact simple firms that do not require as much guidance as underused or unnecessary directors free ride or loaf, and board cohesion suffers.

Alongside firm complexity, other characteristics such as information costs, directors' social connections to management, and firm performance are also shown to influence the governance structures and behaviours a firm adopts. In the next chapter, additional firm-specific characteristics related to control costs are introduced. Part of Hansmann's (1996) theory of ownership, control costs are the costs incurred by owners if they oversee, direct, or manage a firm themselves.

Hansmann uses control costs to help explain why firms have the ownership structures they do. Hansmann shows how the magnitude of control costs is linked to whether a firm is owned by the suppliers of capital (e.g., the investors in an IOF) or by the people that use the firm (e.g., the user-members of a co-operative). This thesis extends Hansmann's analysis to the governance structures of different types of co-ops.

## **Chapter 5. The Ownership and Governance of Co-operatives**

The purpose of this chapter is to provide a more thorough examination of co-operatives, and to look at them through the lens of Hansmann's (1996) theory of ownership. Using Hansmann's theory as its theoretical underpinning, this thesis looks at the endogenous nature of corporate governance through the lens of co-ops. The standard use of Hansmann's theory is to explain a firm's ownership at the organizational level — what circumstances would give rise to a co-op rather than an investor-owned firm (IOF), for example. This thesis extends Hansmann's insights, using them to compare different types of co-operatives, specifically consumer and producer co-ops.

As discussed in Chapter 2, a firm's corporate governance is endogenously determined, meaning different types of organizations will choose different corporate governance (Adams et al., 2010). Co-ops and IOFs have different governance structures because they have different ownership structures. An IOF is owned by shareholders, and its board is comprised of professionals who represent shareholders' interests. A co-operative is owned by the individuals who use its services or buy its products. As a result, a co-op's board is usually made up of lay members — i.e., its owners and users.

To understand the corporate governance of a co-op first requires looking at co-ops in general. Section 5.1 provides a general overview of co-ops, as well as a discussion of why co-operatives are formed in response to market failures. When faced with a market failure, such as monopoly pricing or the underprovision of a good or service, affected individuals have often formed a co-op to provide the good or service themselves. The type of co-op formed depends on who its founding members are.



Section 5.2 details the differences between consumer and producer co-ops. Section 5.3 uses Hansmann's (1996) theory of ownership to describe the circumstances that give rise to co-ops and their user-ownership structure. According to Hansmann, a firm's ownership structure is chosen to economize on marketing and ownership costs. Since IOFs are believed to have lower ownership costs, investor ownership will be chosen when marketing costs are low. However, if the marketing costs associated with an IOF are high (due to the presence of market power, for instance), then a co-operative may be the most efficient organizational structure, provided the ownership costs are not too high. Section 5.4 ties Hansmann's theory of ownership to a firm's corporate governance.

Section 5.5 describes the cost of controlling a firm. This is a key aspect of Hansmann's theory of ownership. Attention is given to the economic connection between a co-op and its members, to firm complexity and to member heterogeneity because these factors influence the costs members incur if they want to oversee their co-op themselves.

Section 5.6 concludes the chapter by examining how consumer and producer co-ops differ in terms of the aforementioned factors. It is expected that differences between consumer and producer co-ops will lead to differences in corporate governance.

## **5.1 An introduction to co-operatives**

A co-operative is a member-owned and controlled business, meaning it is owned by the people who use its service or purchase its products (United States Department of Agriculture, 1994). In this way, co-ops differ from IOFs. For a member-owned firm, users and owners are one and the same; for an IOF, owners are not necessarily users.

It is because of this member-ownership structure that co-ops are an effective solution to market failures. In general, co-ops come about because of two general types of market failure (Birchall, 2013):

1. A lack of markets, meaning a particular good or service is not being provided; or
2. A lack of competition, meaning the market is dominated by a small number of players (or a single player). Without competition, consumers pay more than they would in a competitive market, or producers receive less than they would in a competitive market.

The reason co-ops offer a solution to market failures is that co-ops exist for the benefit of their members. As mentioned, a co-op is owned by its members who are also its users. This differs from an IOF. An IOF is owned by its shareholders who “generally share a single well-defined objective: to maximize the net present value of the firm’s earnings” (Hansmann, 1996, p. 62). In other words, the main purpose of an IOF is profit-maximization for its shareholders, and not the benefit of its users (Birchall, 2013).<sup>23</sup>

Broadly speaking, members benefit from belonging to a co-op in two ways; they can gain as owners, and they can gain as users. The gain for members-as-owners stems from getting a portion of the co-op’s profit. The gain for members-as-users stems from the quality and price of the services they receive.

When there is a trade-off between the benefits to owners (i.e., profit) and the benefits to users (i.e., service and price), the decisions made by IOFs and the decisions made by co-ops

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<sup>23</sup> For an IOF, ownership and usage are not mutually exclusive. Investors may use the companies they have shares in; however, the emphasis is still on receiving high returns and not the goods or services the IOF provides (Birchall, 2013). Users are a lesser concern to owners, unless users can somehow affect share prices, such as by boycotting a firm’s products or services (White & Kare, 1990).

are expected to differ. Specifically, co-ops will earn less profit than IOFs in order to create even larger returns for members through increased user benefits (e.g., lower prices, better service, etc.). Moreover, where markets are missing and services are unprovided, co-operatives can enter a market even if profit margins are too low for IOFs to seek entry. As a result, co-ops correct for market failures, either the underprovision of a good or service, or a lack of competition.

To see how co-ops address market failures, several examples are given below. Mountain Equipment Co-op (MEC), Sunova Credit Union, the rural electric co-operatives (RECs), the prairie credit unions, the Virginia Poultry Growers Co-operative (VPGC), and the Arctic retail co-operatives are all examples of co-ops that were formed in response to a lack of goods or services. The Arctic retail co-operatives are also an example of co-ops being used to address a lack of competition, as are the Saskatchewan Co-operative Elevator Company (SCEC), the Saskatchewan Wheat Pool (SWP), Sunkist Growers and Ocean Spray.

Mountain Equipment Co-op (MEC) was created in 1971 to provide members with affordable, high-quality outdoor gear previously unavailable in Canada (Silcoff & Strauss, 2015). The Renaissance Community Co-op was founded in 2016 to provide the neighbourhood of Northeast Greensboro with a grocery store (Ginsburg, 2018) — something the community lacked for twenty years.

The Sunova Credit Union also started off small, as a single branch in the 1940s. By 2004, the credit union had ten branches throughout rural Manitoba, eight of which were full service (Fairbairn, 2012). Half of these full-service branches were created or substantially expanded due to investor-owned banks either closing or being sold to Sunova. In effect,

Sunova ensured that several rural communities in Manitoba still had access to local financial services.

A lack of services in rural communities also spurred the rise of rural electric co-operatives (RECs). RECs were heavily promoted by the United States' government during the mid-1930s because investor-owned utilities were unwilling to deliver electricity to rural areas (Deller et al., 2009). Investor-owned utilities blamed their unwillingness on the high cost of developing rural infrastructure and on low profit margins. Conversely, RECs serviced rural areas because their main purpose was providing electricity to members, not maximizing profits.

Also during the Great Depression, the number of banks in Saskatchewan declined by 40 percent (Fairbairn et al., 1997). Those that remained were accused of setting high interest rates and operating conservative loan policies (Fairbairn et al., 1997). In response, the provincial government supported the formation of credit unions. Being member-owned, credit unions could survive on much lower margins. Their purpose was to provide loans to members (which they did at lower rates than banks), not a high return-on-investment to shareholders.

Virginia Poultry Growers Co-op was formed in 2004 when the investor-owned Pilgrim's Pride announced it was closing its turkey processing plant in Hinton, Virginia (Wadsworth & Brockhouse Jr., 2012). The plant's closure threatened almost 170 turkey growers, who faced the "real possibility of losing farms and livelihoods" (VPGC, 2020).

In the 1960s, retail co-ops began to appear throughout the Canadian Arctic. For some isolated Northern communities, these co-ops served as their only source of consumer goods (MacPherson, 2007). The Arctic co-ops offered a response to a lack of markets. They

also offered a response to the second type of market failure, a lack of competition.

Previously, the retail market in the Arctic was dominated by two chain stores. The Arctic co-operatives introduced a degree of competition that served to lower the prices of consumer goods and counter the price gouging by the privately-owned chains (MacPherson, 2007; Jensen, 1979).

Alongside the Arctic co-operatives, another example of co-ops being used to counter a lack of competition is the grain co-ops that emerged in the United States in the early 1900s. Grain co-ops were formed to counter the power held by a small number of privately-owned grain-elevator companies that jointly set the prices paid to farmers (Hansmann, 1996). To increase their bargaining power, farmers organized co-operatives, collectively storing and selling their grain. The result was a substantial increase in the price farmers received for their crop (Hansmann, 1996).

A similar process occurred in Western Canada. In the early 1900s, farmers began to suspect collusion between the elevator companies (known as “line” companies because they built their elevators along rail lines) and the railways (Ross, 2006). The farmer-owned Saskatchewan Co-operative Elevator Company (SCEC) was established in 1911 in response to the perceived collusion and to other unfair practices by the line companies (Fairbairn, 2006). Like the rural electric co-operatives, the SCEC was created with government backing. The co-op’s formation was recommended by a Royal Commission. And to help start the co-operative, the Saskatchewan government provided 85 percent of the capital needed through a government-guaranteed loan.

In 1926, members of the SCEC voted to sell their shares to the Saskatchewan Wheat Pool (SWP) which took over the SCEC’s elevator network (Fairbairn, 2006). The SWP was

one of three “wheat pool” co-ops formed in the 1920s to collectively market wheat on behalf of their farmer-members (Fulton & Larson, 2009b). Previously, farmers had to use the Winnipeg Grain Exchange for marketing. They believed the exchange was guilty of speculation and price-setting (Lang, 2006). Farmers were also subject to prices that fluctuated depending on when they brought their wheat to market. Grain delivered immediately after harvest often faced what farmers thought of as a “seasonal price slump”. By pooling revenues, members of the SWP received the same price for grain regardless of when it was delivered (Lang, 2006).

Along with the rise of large grain handling and marketing co-operatives, such as the SWP, the start of the 20<sup>th</sup> century also saw the emergence of other agricultural co-operatives. Sunkist Growers, the largest citrus marketing co-operative in the world, was formed in 1893 in part because citrus growers wanted greater control over marketing their fruit (Boland et al., 2008). The co-operative, Ocean Spray, was formed in 1930 by three cranberry growers in an effort to exert greater control over the marketing of their crops and to reduce local competition (International Directory of Company Histories, 2006; Ocean Spray Cranberries Inc., n.d.).<sup>24</sup>

The co-operatives discussed above highlight the fact that, while they were all formed in response to market failure, the benefit they provided members varied depending on who their members were and what their members needed. Members of MEC, the Arctic co-operatives and the RECs, for instance, were individuals looking for affordable goods or

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<sup>24</sup> Although some co-operatives are formed due to a lack of competition, it does not mean they are necessarily pro-competitive. A marketing co-operative (i.e., a co-operative whose purpose is to market and sell its members products) may be created to counter the power of a monopsony. The higher prices the co-op offers to members act as a “competitive yardstick,” forcing the other buyer to raise its own purchasing price to avoid losing market share (Novkovic, 2008). There is the risk, however, that the co-op captures the entire market, and becomes a monopsony itself (Cook, 1995).

services. Members of the SWP, Sunkist Growers or Ocean Spray were farmers looking for a better way to market their crops, i.e., they were businesses trying to market their products. This difference in member type provides a way of distinguishing between co-ops.

## **5.2 Different types of co-operatives: consumer and producer**

There is no standard set of co-operative types. However, most lists include three general types: consumer co-ops, producer co-ops, and worker co-ops (Birchall, 2017). Because the CBS has no data on worker co-operatives, only consumer and producer are relevant to this thesis. Two types of co-ops are sufficient to examine whether different organizational forms lead to differences in corporate governance. Consumer and producer co-ops serve very different functions and are made up of members that differ in fundamental ways. With that in mind, it is expected that consumer co-ops and producer co-ops will have different governance structures.

In general, there are two ways of thinking about how consumer and producer co-ops differ:

1. In terms of what the co-operatives do; and
2. In terms of what the co-operatives' members do.

This thesis focuses on the second way of defining the two co-op types.

Consumer co-op members are at the final stage of the supply chain. They are primarily individuals who use their co-operative to supply goods and services for their personal consumption. The goods and services they buy are not being resold or used to create something new.

Conversely, producer co-op members sit within the supply chain. They are primarily businesses involved in the production of a good or service. They add value to something. Producer co-op members use the inputs purchased from their co-operative to generate an output, or they sell their output to their co-op. So, while members of a consumer co-op “consume” something, members of a producer co-op “produce” something (Birchall, 2013).<sup>25</sup> This consumer-producer dichotomy results in a different economic connection between a producer co-op and its members compared to a consumer co-op and its members.

As van Bekkum and Bijman (2006) state, members of producer co-ops are businesses and entrepreneurs. They use their co-ops to further their individual business needs. For producer co-op members, their economic livelihoods are tied to the co-operatives they both own and use. The economic livelihoods of consumer co-op members, on the other hand, are generally not tied to their co-operatives. This means that the transactions consumer co-op members have with their co-ops are generally less important than the transactions producer co-op members have with theirs.

Research by Birchall (2017) and Haedicke (2014) highlights the generally weak economic connection experienced by consumer co-ops.<sup>26</sup> For producer co-ops and their

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<sup>25</sup> If defined by what they do, consumer co-ops sell goods and services to their members, while producer co-ops purchase the products their members create (Haliburton, 1937). Generally, a consumer co-op offers its members a variety of services, including any combination of food, banking or financial services, insurance, utilities, or health and social care (Birchall, 2017).

A producer co-op provides its members with any combination of marketing or processing services (Birchall, 2017). Marketing includes the storage, transportation and sale of the goods members produce, while processing adds value to the products members sell to the co-operative.

<sup>26</sup> Although less common, a strong economic connection can exist between a consumer co-op and its members. Again, the good, service or price provided by the consumer co-op cannot be found somewhere else, and the whatever the consumer co-op provides must be essential to its members. For members of the compassion club, the alternative to purchasing heroin through the co-operative is to obtain it illegally or to go through the painful process of withdrawal (Roddy & Greenwald, 2009). Examples like the compassion club



members, the economic connection is usually stronger, in part because members cannot easily leave their co-ops (van Bekkum & Bijman, 2006). Differences in economic connection raise the question whether different types of co-ops can have different corporate governance. Answering this requires looking at how co-ops come about. This thesis uses Hansmann's (1996) theory of ownership to explain the emergence of co-operatives. Hansmann's theory is also used to explain differences in corporate governance.

### **5.3 Ownership structures, marketing costs and the costs of ownership**

Co-operative theory and practice indicate that co-ops operate differently from IOFs. Instead of maximizing profit, co-ops tend to focus on user benefit — such as pricing goods closer to the cost of purchasing or production — while remaining economically viable. By placing user benefit ahead of profit maximization, co-ops can operate in situations that are otherwise unappealing for IOFs (e.g., when profit margins are too low, or start-up costs are too high, for investors to get their desired rate of return). Whether co-operative ownership makes sense, however, depends on two things — marketing costs and the costs of ownership.

In his book *The Ownership of Enterprise*, Hansmann (1996) argues that the most efficient (or least-cost) form of ownership is the one that minimizes transaction costs between the firm and its patrons. Hansmann defines a patron as anyone who transacts with a firm, either by purchasing what the firm sells, or by supplying the firm with supplies, labour or other factors of production, including capital (Hansmann, 1996). Transaction

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are an exception, however. Overall, consumer co-op members have a weaker connection to their co-operatives (Birchall, 2017). `

costs are the sum of the costs incurred by the patrons who supply inputs to the firm or buy the firm's outputs (i.e., the marketing costs), and the costs incurred by the patrons who provide the firm with capital (i.e., the costs of ownership).

Marketing costs are incurred by patrons who transact with firms they do not own. This includes the cost of dealing with monopolies or monopsonies, the cost of being locked-in, and the cost arising from information asymmetry (such as when the firm knows more than its customers about the quality of the goods or services it provides).<sup>27</sup>

Ownership costs are incurred by the individuals who own the firm (owners are not necessarily patrons). Ownership costs can be divided into the cost of risk bearing and the cost of controlling the firm (Hansmann, 1996). The cost of risk bearing affects the return owners receive on the capital they invested in the firm. With their investment, owners have the right to the firm's residual earnings, but with that right comes a degree of risk. There is always the chance that the firm underperforms, and owners receive a poor return on their investment. Although the cost of risk is important, it is not the focus of this thesis.

This thesis focuses on the cost of controlling the firm, or control costs. Control costs are the costs incurred by owners when managing, directing, or overseeing the firm. They can be divided into three components: the costs of monitoring management, the cost of managerial opportunism, and the cost of collective decision-making. Monitoring costs are the costs owners incur overseeing management themselves. They include the costs associated with learning about the firm and its operations, sharing that information with

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<sup>27</sup> The cost of being locked-in occurs when a user has to make substantial investments before entering into a relationship with a firm. These investments cannot be fully recouped if the user exits the relationship.

other owners, making decisions collectively, and bringing those decisions to bear on management (Hansmann, 1996).

The cost of managerial opportunism is incurred by owners when managers act self-servingly, putting their own interests ahead of owners' (see Chapter 3 for a discussion on managerial opportunism). Without effective oversight, managers may be more likely to act opportunistically and shirk their duties or engage in self-dealing behaviour.

The third component of control costs is the cost of collective decision-making, which results from the heterogeneity of members' interests. When owners' interests differ, some form of collective choice mechanism (such as a voting scheme) may be used to make decisions. The costs associated with these mechanisms fall into two broad categories. First, there is the cost of any inefficient decisions that result from using the mechanisms.<sup>28</sup> Second, there is the cost of the decision-making process itself. This stretches beyond the effort required by owners to decide what to do and encompasses collective decision-making in general.

To make better decisions, owners have to invest time and energy in learning about the firm and other owners' preferences. They may also have to engage in activities that are necessary to reach and implement collective decisions, such as voting or attending meetings. As the number of owners increases or their interests become more heterogeneous, collective decision-making becomes costlier.

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<sup>28</sup> Hansmann (1996) considers a decision "inefficient" if it does not maximize the aggregate wellbeing of the owners overall. An efficient decision is the outcome preferred by the average owner. Inefficient decisions occur when the voting system fails to select what the average owner wants, or when the decision-making process becomes captured by an unrepresentative minority who can use the process to further their own interests instead of the majority's (Chaddad & Iliopoulos, 2013).

To recap, the cost of controlling the firm has three components: monitoring costs, the cost of managerial opportunism and the cost of collective decision-making. Each component affects control costs in a different way (see Table 5.1 for a summary). If monitoring costs and the cost of collective decision-making increase, then the cost of controlling the firm increases. Conversely, if the cost of managerial opportunism increases, then the cost of controlling the firm decreases. The reason for this negative correlation is that owners stand to lose something if managers behave opportunistically. The bigger the loss owners might incur, the more they should be willing to control their firms to ensure management behaves appropriately.

**Table 5.1** The three components of the cost of controlling the firm

Components of Control Costs	Effect on Control Costs
	<b>Control costs increase ...</b>
<i>1. Monitoring Costs</i>	As the cost of monitoring management increases
<i>2. The Cost of Managerial Opportunism</i>	As the cost of managerial opportunism decreases
<i>3. The Costs of Collective Decision-Making</i>	As the cost of collective decision-making increase

Before moving on, it is important to recognize that control costs are understood from the owners' perspective. Whether control costs are considered high or low is based on owners' perceptions around the effort needed to oversee management, the losses they will incur if management behaves opportunistically, and the effort required to work with other owners. Whether or not owners are willing to oversee management themselves is based on how high each owner considers control costs to be.

#### 5.4 Hansmann's theory of ownership and a firm's corporate governance

According to Hansmann, different ownership structures give rise to different transaction costs. Transaction costs are the sum of marketing costs and the cost of owning the firm. The most efficient form of ownership is the one that has the lowest transaction costs. If marketing costs are low (i.e., markets are competitive and there is no market failure), then investor ownership makes sense. There is no need for users to incur the extra costs that stem from their being owners. But if marketing costs are high, then the co-operative model of user-ownership may be appropriate.

User-ownership means a firm is owned by the people that purchase its good or use its services. By owning the firm, users can lower the costs of market contracting (Hansmann, 1988), albeit by having to incur the costs of ownership themselves. User ownership is advantageous if the reduction in marketing costs is greater than the cost of ownership.

Hansmann's method for determining ownership can be used to explain why co-ops are formed in response to market failure. Marketing costs are high for users when a good or service is underprovided, or when a lack of competition allows the dominant players in a market to overcharge consumers or underpay producers. In other words, when there is a market failure, marketing costs are high.<sup>29</sup> If the costs of owning the firm are low enough, then user ownership may be appropriate. User-ownership only makes sense, however, if

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<sup>29</sup> When a good or service is not provided at all, essentially what is happening, is that users are dealing with a firm that is denying them the good or service they want. This effectively means the marketing costs are high. For instance, the reason people living in rural areas lacked electricity prior to the formation of the RECs was that the investor-owned utilities would not enter rural markets. In effect, the investor-owned utilities were denying electricity to the people living in the affected markets.

the benefit from lower marketing costs offsets the cost of ownership. In other words, ownership costs must be sufficiently small.

If potential ownership costs are larger than the marketing costs currently experienced by users, then there is no benefit for users becoming owners. Even though owning the firm may shrink their marketing costs, users' overall transaction costs will increase once they are owners because ownership costs are higher than the original marketing costs.

#### *5.4.1 The cost of ownership and differences in corporate governance between firms*

Governance failures and corporate scandals are the result of faulty oversight.

Consequently, management should be subject to some degree of oversight and control.

Who actually watches management, however, can differ between firms. For IOFs, monitoring is most often done by the board, because owners are too dispersed to oversee management themselves. For co-ops, monitoring can be done by the board, by members, or by some combination thereof.

Hansmann's theory of ownership can be used to predict how much of the monitoring role will be undertaken by members or by the board. Specifically, the cost of controlling the firm will affect how much influence members exert over their co-operative and its corporate governance. If control costs are high, then members can be expected to shift responsibility for overseeing management from themselves to the board. If control costs are low, members will oversee management themselves.

Because members are both owners and users, they may be well positioned to effectively monitor management. As users, members have direct insight into firm performance — whether the co-operative is providing the good, service or price members want

(Haliburton, 1937; Hansmann, 1996). As owners, members can influence management by using the control mechanisms ownership affords. Members have access to both the board and management and can question why service is poor or products are too expensive. Members' voice may be coupled with threats of exit. These threats grow increasingly powerful as members do more business with their co-op.

Despite members' effectiveness, however, how much they oversee management themselves or leave the task to the board depends on the cost of controlling the firm. It is hypothesized that as members perceive that control costs are growing, they will be less willing to oversee management themselves, so the board's involvement in oversight will increase. Control costs are discussed next.

### **5.5 The cost of controlling the firm**

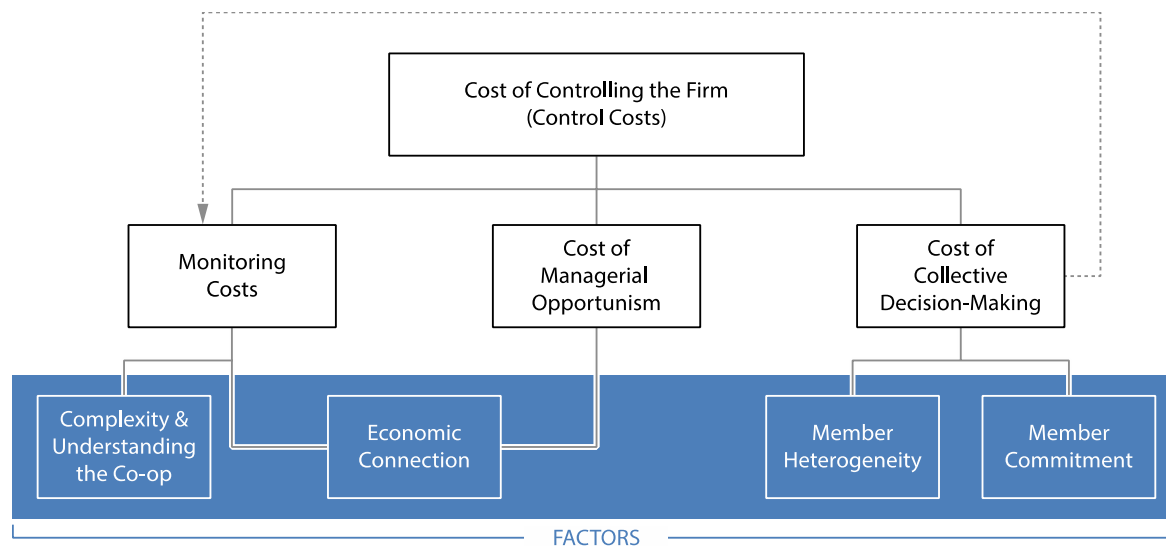
Following Hansmann, the underlying assumption of this thesis is that the role of overseeing management is endogenously determined in a co-op. This means that differences in control costs should be associated with differences in the role members play in governance.

Control costs are comprised of monitoring costs, the cost of managerial opportunism, and the cost of collective decision-making. These components are influenced by several factors.

Monitoring costs are influenced by members' economic connection to their co-operative; a co-op's complexity and its members' ability to understand the co-operative; and the cost of collective decision-making regarding management (Chaddad & Iliopoulos, 2013). The cost of managerial opportunism is influenced by members' economic connection. And the cost of collective decision-making is influenced by member

heterogeneity and member commitment. Figure 5.1 shows how all of the costs and factors are related.

**Figure 5.1** The Factors and Costs that Influence the Cost of Controlling the Firm



Three of the factors shown in Figure 5.1 — firm complexity, economic connection, and member commitment — can be further broken down into sub-factors. These sub-factors are listed in Tables 5.2, 5.3 and 5.4, which detail how each factor and sub-factor influences monitoring costs, the cost of managerial opportunism, and the cost of collective decision-making, respectively.



**Table 5.2** Factors that influence monitoring costs

Factor	Effect on Monitoring Costs and Control Costs
	<b>Monitoring costs and control costs increase ...</b>
<i>1. Economic connection</i>	As the economic connection between members and their co-op weakens
<i>1a. Frequency, duration and importance of transactions</i>	As members' transactions with their co-op decrease in frequency, duration, or importance
<i>1b. Large members</i>	For members who do less business with their co-op, relative to the rest of the membership
<i>2. Firm complexity</i>	As co-ops become more complex
<i>2a. Firm age</i>	As a co-op gets older
<i>2b. Firm size</i>	As a co-op becomes larger and its membership size increases
<i>2c. Geographic region</i>	As a co-op occupies a larger geographic region
<i>2d. Firm sector</i>	For co-ops that occupy sectors with increased competition or greater regulations, or that use a specialized workforce or sophisticated production techniques
<i>3. Cost of collective decision-making (see Table 5.3 for associated factors)</i>	As the cost of collective decision-making increases

**Table 5.3** Factors that influence the cost of managerial opportunism

Factor	Effect on the Cost of Managerial Opportunism and Control Costs
	<b>The cost of managerial opportunism decreases, and control costs increase ...</b>
<i>1. Economic connection</i>	As the economic connection between members and their co-op weakens
<i>1a. Frequency, duration and importance of transactions</i>	As members' transactions with their co-op decrease in frequency, duration or importance
<i>1b. Large members</i>	For members who do less business with their co-op, relative to the rest of the membership

**Table 5.4** Factors that influence the cost of collective decision-making

Factor	Effect on the Cost of Collective Decision-Making and Control Costs
	<b>The cost of collective decision-making increases, and control costs increase ...</b>
<i>1. Member heterogeneity</i>	As member interests increasingly diverge
<i>2. Member commitment</i>	As member commitment decreases
<i>2a. Economic connection</i>	As the economic connection between members and their co-op weakens
<i>2b. Member heterogeneity</i>	As members interests increasingly diverge
<i>2c. Geographic region</i>	As a co-op occupies a larger geographic region
<i>2d. Firm complexity (see Table 5.1 for associated sub-factors)</i>	As co-ops become more complex, and members understand less about their co-op
<i>2e. Members' participation in governance</i>	As members participate less in governance

Looking at the tables above, it is apparent that several factors influence more than one cost. As members' economic connection with their co-operative decrease, monitoring costs increase, while the cost of managerial opportunism decreases. As firm complexity increases, both monitoring costs and the cost of collective decision-making increase. Each of the main factors — economic connection, firm complexity, member heterogeneity and member commitment — are described below.

#### *5.5.1 Economic Connection*

Introduced in Section 5.3, economic connection is the degree of importance members place on their monetary transactions with their co-operative. The strength of that connection is determined by the how essential the co-op is to its members' financial wellbeing. The more essential the co-op is, the stronger the connection.

Economic connection can be broken down into members' transactions with their co-operative, and members who account for a significant portion of their co-op's business.

#### *5.5.1.1 Members' transactions with their co-op and the cost of managerial opportunism*

The cost of overseeing management is inversely proportionate to the importance, frequency, and duration of members' transactions with their co-op (Hansmann, 1996); as the importance, frequency or duration increases, monitoring costs decrease. Put another way, as members' economic connection to their co-operative increases, monitoring costs decrease. This is in part because doing business with a firm provides information about managerial performance. Hansmann (1996) argues that producer co-op members are well positioned to effectively oversee management if their co-operative is limited in its operations and does something directly related to members' businesses.

Take for instance, a marketing co-operative that enables farmer members to capture economies of scale in grain cleaning and storage. If the co-op limits its activities to only those two activities, cleaning, and storage, then its members can understand what their co-op is doing because the co-op's business is relatively simple, and it directly relates to members' own businesses. Members can also gauge management's performance on whether members' cleaning and storage costs are being kept low. In this way, members can monitor management by seeing how management's actions affect their bottom line.

However, if the co-op becomes involved in activities beyond the scope of members' businesses, it becomes harder for them to oversee management. Members may no longer understand what their co-op does as its operations become more complicated.

Additionally, the direct link between the co-op's actions and members' economic livelihoods becomes attenuated.

Even if the direct link between what a co-op and its members' livelihoods does weaken, producer co-op members might not be any less reliant on their co-operative. The success of members' businesses may still depend on belonging to the producer co-op. This economic connection may push producer members to oversee management, even if monitoring costs are high, because the consequence of the co-op being mismanaged could be even higher (Hueth & Marcoul, 2015). In other words, members will still oversee management to prevent managers from acting opportunistically.

#### *5.5.1.2 Members who account for a significant portion of a co-op's business*

The amount of business members conduct with their co-op may also influence their participation in governance. Unlike with IOFs, where investors can gain substantial voting power by buying a large block of shares, co-ops typically allocate one vote per member. Consequently, a single member cannot gain the same voting power as a large-block shareholder.

Nevertheless, members who account for a significant portion of a co-op's business (referred to herein as large members) can influence the board, management and other members by threatening to leave the co-op. As Staatz (1983) states, "Large members in co-ops [that are] facing substantial economies of size would have substantial bargaining power; smaller members in co-ops with constant costs would have practically none" (p. 1086).

Since they can influence what their co-ops do, large members may choose to be more active in overseeing management than smaller members.<sup>30</sup> Also, because of the significant amount of business they do with the co-operative, large members' economic livelihoods may be more tightly tied to their co-operatives than small members. This could also prompt large members to oversee management, as well as increase the cost of managerial opportunism.

Evidence from research on IOFs suggests that institutional, or large-block, shareholders are associated with heightened monitoring of management (Hartzell & Starks, 2003; Parrino et al., 2003). Moreover, large-block shareholders appear more active in a firm's corporate governance (Brickley et al., 1988), and are also better able to influence the type of governance structures and behaviours a firm adopts (Denes et al., 2017). There is also evidence that large-block shareholders benefit from their holdings beyond the control afforded by ownership (Lamba & Stapledon, 2014; Huang et al., 2020). This suggests that the cost of managerial opportunism increases as shareholders increase their ownership stake.

While these findings related to IOFs might not directly apply to co-operatives, they do suggest that co-ops with large members may have different corporate governance than co-ops without.

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<sup>30</sup> Although Downs' (1957) economic theory of political action pertains to voters' behaviours in a democracy, it supports the assertion that large members will try to be well informed and oversee management, if large members believe their opinions carry weight and if they benefit from improved monitoring. According to Downs, a rational voter will become well informed if she believes her vote will help decide the election, and if she can use information to influence the votes of others. Similar to the large member, the rational voter will only act if she can derive benefit from her actions (i.e., cast the deciding vote), and if her opinion matters (i.e., she can influence others).

### *5.5.2 A co-op's complexity and members' understanding of their co-operative*

As co-ops become more complex, it becomes increasingly difficult for members to understand their co-op's operations and to oversee management themselves (Birchall, 2017). Complexity can come from a variety of sources. Firms become more complex as they age (Miller & Friesen, 1984), and as they operate in wider geographic regions, across multiple industries, or in competitive environments (Markarian & Parbonetti, 2007).

A firm's sector, or the services it provides, also contributes to a firm's complexity. Financial institutions, for instance, are sufficiently complex that governing them requires special expertise (Office of the Superintendent of Financial Institutions, 2013). Different sectors are subject to varying amounts of rules and regulations, which will also affect complexity; more regulation means greater complexity (Spatt, 2012). Two sectors from the CBS, financial and utilities, are among the most heavily regulated industries in the United States (McLaughlin & Nelson, 2021).

Other factors contributing to complexity include the use of sophisticated production technologies or work processes, member heterogeneity and firm size. The SWP and the Co-operative Group are examples of co-ops that grew so large that members were unable to understand what the co-ops did. The SWP became so complex that even members who sat on the board did not understand the producer co-op's business (Fulton & Larson, 2009a). This complexity, and members' inability to monitor management, contributed to the Pool's eventual demutualization.

For the Co-operative Group, while its complexity did not lead to the consumer co-op's demise, it caused sufficient turmoil that a special review of the co-op's governance was conducted. One of the review's recommendations was that the co-op look outside of its

membership to find directors with the skills and expertise to oversee a large and complex firm (Myners, 2014).

As co-operatives become more complex, experts may be required to serve as directors so that the board has the right skills and experience. In response to greater complexity, Birchall (2017) recommends that the board's nominations committee screens potential directors and "offers members no choice but to endorse (or not endorse) the board's preferred candidates" (p. 104). This way, the board ensures it has the desired mix of experience and expertise to govern the co-op.

The process of endorsing specific candidates is controversial, however. It has been criticized for ignoring co-operative democratic principles, and for not representing members' interests (Allaire, 2008; Silcoff & Strauss, 2015). Several co-ops have been denounced for tightening restrictions on who could run for the board, and for rejecting several candidates due to their lack of financial expertise (Farrell, 2015; Pablo, 2012; Silcoff & Strauss, 2015). For the Co-operative Group, the process of endorsing potential directors was so contentious that members threatened to halt board elections through legal injunction (Treanor, 2015).

Yet, relying on the traditional practice of members selecting board candidates from the membership pool may be insufficient. The SWP's board, for instance, lacked the experience to effectively challenge management once the producer co-op became too complex. Directors came to rely on the CEO and senior management for information and analysis. The gradual erosion of oversight is captured by a former SWP employee who said, "You could see the gradual change where the board became almost dependent [on management] as opposed to being the final decision-making body" (Fulton & Larson, 2009b, p. 12).

### *5.5.3 Member heterogeneity and the cost of collective decision-making*

As stated in Section 5.1, for members to effectively monitor management, they must be willing to incur the costs of communicating amongst themselves, making decisions together and bringing those decisions to bear on management. Members must be willing to accept the cost of collective decision-making associated with controlling their co-op. However, the more members' interests diverge from each other, the more it costs for members to work together.

Highly divergent interests make it difficult for members to reach consensus on what management should do, or how management should be evaluated (Richards et al., 1998). Also, collecting information about members' interests and collective decision-making mechanisms, such as co-ops' "one-member-one-vote" voting scheme, become costlier as heterogeneity increases (Hansmann, 1996).

As co-ops become larger and more complicated, there is a tendency for their boards to become "professionalized". Directors who have the skills and expertise to oversee a large firm are brought onboard from outside the membership (Birchall, 2017). The problem with a professionalized board is that it may not capture the interests of members. Non-member directors may not recognize the value of being a co-operative or have little understanding of what members want — especially if member interests are heterogeneous (Couchman & Fulton, 2015; Österberg & Nilsson, 2009).

Ultimately, members may try to exercise control over their co-op. But to do this successfully, members must invest time and effort into understanding the co-op and other members' preferences (Hansmann, 1996). If members' interests are too heterogeneous, or



member commitment is low, then the cost of becoming informed may be too much for most members to bear.

#### *5.5.4 Member Commitment*

Member commitment is commonly divided into three subcategories: continuance, normative and affective (Jiménez et al., 2010; Jussila et al., 2012; Jussila et al., 2014).

Continuance commitment is a utilitarian cost-benefit calculation that stems from members' economic connection to their co-operative. It is based on members' awareness of what they would lose (or gain) by leaving the co-op. Normative commitment stems from members' sense of obligation — that they are duty bound to stay with their co-op.

Affective commitment is the degree of emotional attachment members have to their co-op. It is strongly associated with the non-economic aspects of a co-op, such as the co-operative identity, the importance of member control, and the benefit of collective action (Jiménez et al., 2010). Members high in affective commitment have a strong sense of ownership regarding their co-op. They identify with their co-operative, and believe it is acting in their interests (Jussila et al., 2012).

The antecedents of affective commitment include members' geographic proximity to each other and the co-op, members' control over the co-op, the co-op's efforts to educate members, how much members have invested in the co-op, members' knowledge of the co-op, and the degree to which members interact face-to-face with the co-op (Jussila et al., 2012). Closer proximity, better knowledge of the co-op, increased face-to-face interactions, more educational efforts, and greater member investment all positively correlate with greater affective commitment.

Increased affective commitment is associated with greater participation in corporate governance — specifically in a heightened propensity to vote, attend annual general meetings (AGMs), or sit on the board (Cechin et al., 2013). Within larger co-op, there is often a small group of “true believers” that have high affective commitment. These members want to be involved in the business and stand for board election (Birchall & Simmons, 2004). Aside from the true believers, there is a much larger group of members who are normatively committed. They vote or attend annual meetings out of sense of loyalty to the co-op (Birchall & Simmons, 2004; Jiménez et al., 2010). Finally, there is the majority of members. They have low commitment overall, do not participate in governance, and are only weakly connected to the co-op.

High levels of both affective commitment and continuance commitment can increase member involvement in corporate governance. For benefits to be realized, however, members high in affective commitment and members high in continuance commitment need to agree on what the co-op should do. If members’ interests are heterogeneous, then overall commitment may suffer.

#### *5.5.4.1 Member heterogeneity and its effect on commitment*

In general, member heterogeneity lowers member commitment because the ability of a co-op to satisfy different member groups suffers as heterogeneity increases (Sexton, 1986; Staats, 1983). If one group is favoured over another, the commitment level of the disadvantaged group drops (Staats, 1983). If attempts are made to please everyone, all groups receive suboptimal results and member commitment declines (see Adelberg and Baston (1978) for research on how trying to please everyone leaves no one is satisfied).

And as commitment falls, members may expend less energy on monitoring management themselves.

### **5.6 Conclusion: Differences between consumer co-ops and producer co-ops**

The underlying hypothesis of this thesis is that corporate governance is endogenous; firms with different characteristics will have different corporate governance. If consumer and producer co-ops differ in the factors that influence the cost of controlling the firm, then they should have different corporate governance. For co-ops with higher control costs, the expectation is that members will take a smaller role in governing and overseeing management, while the board takes a larger role. For co-ops with lower control costs, the situation is reversed; members are expected to be more involved while the board is expected to be less involved.

Evidence suggests that consumer co-ops have higher control costs than producer co-ops for two reasons. First, producer co-ops and their members have a stronger economic connection because producer co-op members are businesses whose economic livelihoods depend on their co-operatives (Birchall, 2017; van Bekkum & Bijman, 2006). This strong economic connection means producer co-op members should be more willing to accept the monitoring costs incurred from controlling their co-operative (Cechin et al., 2013). It also means the monitoring costs that producer co-op members face will be lower. A strong economic connection provides producer co-op members with better information regarding their co-operative's performance. Producer co-op members do not need to spend as much energy determining how management is doing (Hansmann, 1996).

Second, producer co-ops generally have fewer members than consumer co-ops (Dave Grace & Associates, 2014). This smaller size means that the cost of collective decision-making may be lower for producer co-ops for two reasons. One, it takes less resources to gather the preferences of a small membership. And two, smaller memberships may be less heterogenous, which further decreases the cost of collective decision-making.

Overall, the expected difference in control costs suggests the following hypothesis:

*Because consumer co-ops have higher control costs than producer co-ops, the boards of consumer co-ops should be more involved in overseeing management than the boards of producer co-ops.*

The underlying presumption is that the cost of controlling the firm varies between consumer and producer co-ops. Differences in size and economic connection suggests higher control costs for consumer co-ops. But other factors, such as geographic region or member participation in governance, can also influence the cost of controlling the firm.

The degree to which these factors influence control costs is examined in Chapter 8. Chapter 8 also tests the hypothesis that consumer co-op boards are more involved in overseeing management than producer co-op boards. As the basis for this analysis, Chapter 6 provides greater detail on the CBS, its methods, and its variables. Chapter 7 presents general statistics describing the CBS in general.

## **Chapter 6. Overview of the Co-operative Business Study**

This chapter gives an overview of the Co-operative Business Study (CBS) and describe the variables analyzed in this thesis. As discussed in Chapter 2, corporate governance expected to be endogenous. A firm's governance structures and behaviours are chosen in response to firm-specific characteristics (Adams et al., 2010). This means that different types of firms should have different corporate governance.

Chapter 5 described consumer and producer co-operatives and detailed how the two types of co-ops differed in terms of who their members are. Generally, producer co-op members are businesses whose economic livelihoods depend on their co-operative (van Bekkum & Bijman, 2006). Consumer co-op members are individuals who are less reliant on their co-operative.

Additionally, Chapter 5 detailed several other factors associated with the cost of controlling the firm. Data from the Co-operative Business Study (CBS) can be used to determine if consumer and producer co-ops differ in terms of these factors. Data from the CBS can also be used to determine if consumer and producer co-ops differ in terms of their corporate governance structures and behaviours. Theory suggests that as a co-op's control costs increase, management will be overseen more by the board and less by members. The CBS provides a way of testing whether this is the case.

This chapter describes the CBS. An overview of the study is provided in Section 6.1. A discussion of the study's methods and coverage is provided in Section 6.2. The variables analyzed in this thesis are laid out in Section 6.3. Details of the variables related to the factors that influence control costs are provided in Section 6.4. In Sections 6.5 and 6.6,

details are provided for the variables related to corporate governance structures and behaviours, respectively. Section 6.7 explains why financial measures are not being analyzed in this thesis. Section 6.8 concludes the chapter.

### **6.1 Overview of the Co-operative Business Study**

The CBS was conducted by researchers from the University of Wisconsin's Center for Co-operatives (UWCC) in 2014. Results of the study are based on a series of interviews with the CEOs and board chairs from co-ops and credit unions across the United States.

Participating organizations were selected via stratified random sampling pulled from the UWCC project, *Research on the Economic Impact of Cooperatives*, which was a national census of U.S. co-operatives.

### **6.2 Methodology of the Co-operative Business Study**

The CBS consists of data compiled from semi-structured interviews with the CEOs and board chairs of 485 co-operatives, as well as information gathered from research by the UWCC staff. Interviews usually lasted between 40 and 60 minutes. Questions ranged from general information about a co-op and its board, to specifics about the behaviours of the CEO and the directors.

Whenever possible, the survey was given to both the CEO and the board chair of a co-op. Participants were interviewed separately (i.e., the CEO and board chair from a particular co-op were not interviewed together) to check the reliability of firm-level information, and to ensure individual responses to sensitive questions were as unbiased as possible.

For just under 60 percent of the co-ops surveyed (59.7%,  $N = 290$ ), both the CEO and the board chair were interviewed. Of the 195 co-ops remaining, only the CEO was interviewed for 193, and only the board chair for the remaining two (see Table 6.1). In total, the CEO was interviewed for 99.6 percent of participating organizations ( $N = 483$ ), whereas the board chair was interviewed only 60 percent of the time ( $N = 292$ ). Because of the large gap in board chair responses, only the information provided by CEOs was used for this thesis.

**Table 6.1** Participation by the CEO, board chair or both in the CBS\*

CEO Only	Board Chair Only	Both the CEO and Board Chair
193 co-operatives	2 co-operatives	290 co-operatives

\* All participating co-operatives were included in this thesis ( $N = 485$ ). However, only data from CEO interviews were used. Consequently, there are two co-ops without any responses to the interview questions because their CEOs did not participate. Still, data from these two co-ops, such as membership size or firm sector, were analyzed.

### 6.2.1 Response scoring

Participants were asked a mix of open- and close-ended questions. Responses for certain open-ended questions were reviewed and scored between 1-5 by the interviewer, using criteria established prior to coding. For this thesis, those numeric scores have been recoded as: Low (for values 1-2), Medium (value 3), and High (values 4-5). This makes the data easier to understand. Analyses in Chapters 7 and 8 are simpler and clearer using the three categories than they would be using 1, 2, 3, 4 and 5. The recoding also removes any temptation to think of the data as numeric, instead of categorical.

### 6.2.2 Co-ops surveyed

Participating co-ops and credit unions were selected through a series of stratified random samples pulled from UWCC's national survey, *Research on the Economic Impact of Cooperatives*. Thirteen different sectors are represented in the CBS: agricultural, arts and crafts, credit union, education, farm credit, grocery, healthcare, media, mutual insurance, rural electric, telecommunications, water, and an "other" category for sectors that were difficult to classify. Each sector serves a particular demographic or provides a particular service. Brief descriptions taken from the national survey (Deller et al., 2009) are provided for each sector.

- *Agricultural co-operatives* are usually processing or marketing co-operatives that supply farmer-members with processing or marketing services; or supply co-operatives that provide members with the services and inputs needed to produce their goods. Typically, processing or marketing co-ops are organized around a single commodity. Supply co-ops are usually restricted to basic inputs — chemicals, fuel, fertilizer, or seed.
- *Arts and crafts co-operatives* are used by members to market their products and maximize sales. They provide more lucrative alternatives to traditional galleries and offer members greater control over how their work is presented.
- *Credit unions* function like other depository institutions (such as banks), taking deposits and offering loans. The major difference from a bank is that a credit union's clients are its members. Earnings are returned to members through reduced interest on loans, and increased interest on deposits. Credit unions may also re-invest earnings back into the firm.



- *Education co-operatives* serve a variety of different functions, depending on the needs of their members. Some education co-ops provide collective purchasing power for educational institutions such as colleges, universities and private schools. Others deliver educational services to the children of member parents. A third type of education co-op, referred to as an educational service agency (ESA), provides cost-effective programs and services to member school districts. The programs provided range from special education to professional development. ESAs may also perform a collective purchasing function by aggregating demand and allowing for increased negotiating power.
- *Farm credit co-operatives* are government-sponsored firms explicitly created to serve agricultural borrowers. Their members include farmers, ranchers, agricultural co-ops, select rural utility companies, and rural homeowners. Unlike other financial institutions, farm credit co-ops are pure lenders that finance their lending by issuing financial securities. Currently, the farm credit system, with 73 individual lenders that are owned by their farmer-borrowers, accounts for 41 percent of all agricultural debt in the United States (Farm Credit Administration, 2018).
- *Grocery co-operatives* are typically consumer-owned retail stores. Some are pre-order buying clubs that try and secure better deals for members through increased purchasing power. Other grocery co-ops are similar to traditional stores. Most require a relatively small financial investment to purchase a membership. Members are allowed to use the co-op's services and are given a single vote in board elections.
- *Healthcare co-operatives* usually fall into two categories, group-purchasing organizations (GPOs) or employer-healthcare coalitions. GPOs are formed to

increase negotiating power with vendors, and most hospitals belong to at least one. Employer-healthcare coalitions allow members to provide healthcare choices to their employees. Their market share is small, however, so they cannot usually command better rates for members.

A small number of co-ops provide healthcare services, functioning as health maintenance organizations (HMOs). But only a few states allow HMOs to be incorporated as co-operatives, Wisconsin and Minnesota being two of them.

- *Media co-operatives* are not explicitly discussed in the national survey by Deller et al. (2009). According to Bibby (2013), they may function as multi-stakeholder co-ops, providing news generated by member-journalists to member-subscribers. They may also function as producer co-ops, providing members with various services such as media production, print design or corporate branding.
- *Mutual insurance co-operatives* are insurance firms owned by their policy holders. Membership begins with the purchase of a policy and ends with the policy's termination. Policyholders may differ in the benefits they expect from the mutual, depending on whether they hold life insurance, or property/casualty policies.

Life insurance holders may belong to the mutual for several decades and have a long-term interest in decisions that affect their interests. Property or casualty policyholders' interests are more short-term, focused on decisions that lower insurance costs and premiums. Regardless of the type of policy held, however, owners have the right to vote for the board of directors.

- *Rural electric co-operatives* (RECs) are the primary provider of power to America's rural areas. To purchase electricity from most RECs, consumers must be members.

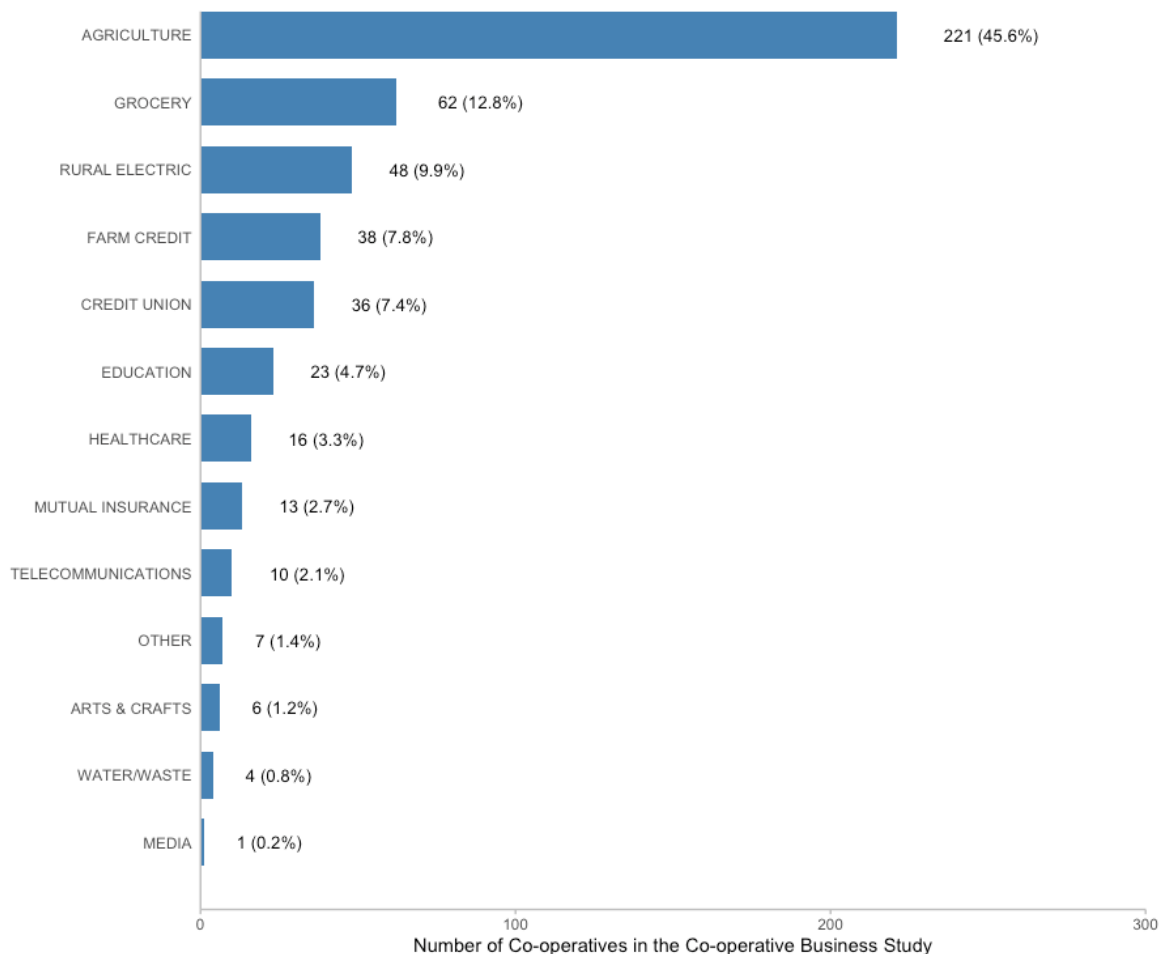
Members are entitled to vote for the board. U.S. regulators have taken the position that RECs “are effectively self-regulated by locally elected board of directors,” (Deller et al., 2009, p. 48).

- *Telecommunications co-operatives* provide telephone, television, and internet services to rural Americans (Deller et al., 2009). They are owned by their customers, and membership is required to use their services.
- *Water co-operatives* are consumer-owned utilities established to provide sustainable water service. As of 2009, there were 3,300 water co-ops in the United States (Deller et al., 2009). Most are small (serving between 501 and 3.3 thousand customers) or very small (serving between 25 and 500 customers). They are typically organized by households and businesses that cannot connect to existing water systems. Membership is required of all customers and is typically open to any property owner within the co-op’s service area. Because of their small size, most water co-operatives do not have employees. Instead, they are run by volunteers — often by board members.
- The *other* category consists of co-ops that did not fall into any of the previously mentioned sectors. This includes funeral, transportation, and investment co-operatives.

As can be seen from Figure 6.1, 45.6 percent of the co-ops in the CBS are from the agricultural sector. The next largest sector, grocery, accounts for 12.8 percent of surveyed co-ops. RECs comprise 9.9 percent of the sample, farm credit co-ops comprise 7.8 percent, and credit unions 7.4 percent. The education sector represents almost five percent of co-ops surveyed, and the healthcare sector for just above three. Combined, the remaining

sectors — arts and crafts, healthcare, media, mutual insurance, telecommunications, water and other — account for 8.5 percent of the sample.<sup>31</sup>

**Figure 6.1** Overall Distribution of Sectors in the CBS

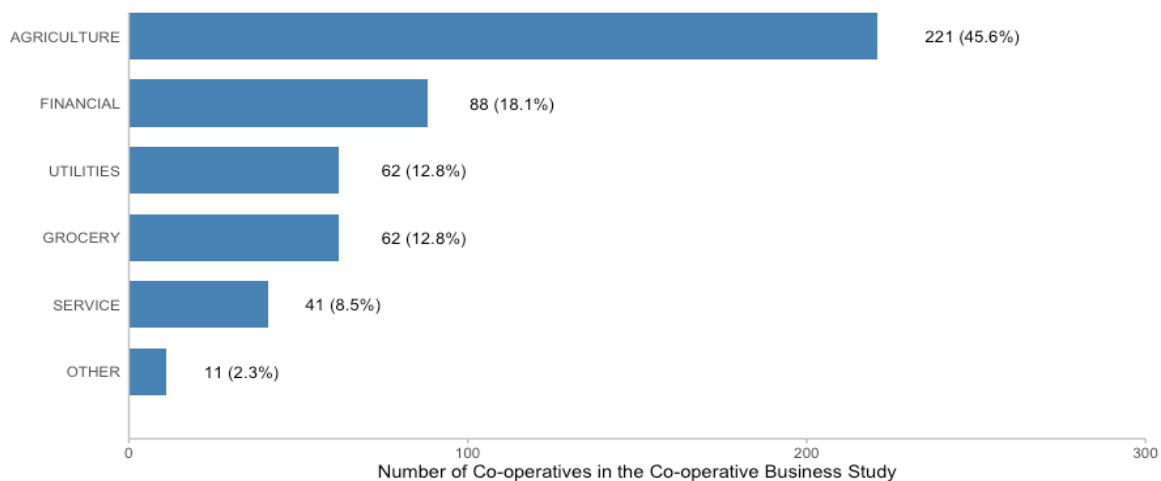


<sup>31</sup> The distribution of Canadian co-operatives differs from the American distribution described by the CBS. In Canada, 21 percent of co-ops are from the agricultural sector (Richards, 2012). Credit unions and caisses popular (essentially the francophone version of a credit union) account for fourteen percent of co-ops, and retail co-ops ten percent. By far, the largest category are housing co-ops, accounting for 42 percent of co-operatives in Canada.

### 6.2.2.1 Combining sectors

For this thesis, some of the sectors have been grouped together to ensure that categories have a minimum number of co-ops. This allows for more robust statistical analysis.<sup>32</sup> The agriculture and grocery sectors have been left untouched. The credit union, farm credit, and mutual insurance categories have been grouped together into a general “financial” sector. RECs, telecommunications and water have been reclassified as “utilities”, and education and healthcare are grouped together into “public services”. The financial, public services, and utilities groupings are the same general classifications used in the *Research on the Economic Impact of Cooperatives* survey. The remaining two categories, arts and crafts, and media have been placed into the “other” category. Figure 6.2 shows the revised distribution of the combined sectors.

**Figure 6.2** Revised Distribution of Combined Sectors in the CBS



<sup>32</sup> Results of chi-square tests may be incorrect if expected values (i.e., expected number of cases given the observed data) are less than five. In chi-square tests conducted using the unmodified distribution of sectors (i.e., the original distribution), several expected counts equal zero, especially for the smaller sectors — arts and crafts, media, mutual insurance, other, telecommunications, and water sectors. Merging sectors into more general categories increases group sizes, so that distributions may approximate normality, and expected counts are more likely to be at least five.

#### *6.2.4 Co-operatives by type*

The CBS classifies co-ops as consumer, producer, or purchaser. The purchasing co-ops category has been merged into the producer co-op category for this thesis to preserve the consumer/producer dichotomy. Purchasing co-ops are more similar to producer co-operatives than they are to consumer co-ops. Members of purchasing co-ops are predominantly businesses that are part of the production chain. They use their co-op to secure the inputs they need for whatever they produce or sell. Ace Hardware is an example of a purchasing co-op. Its members are independently owned hardware stores that benefit from the co-op's collective buying power and recognizable brand (Ace Hardware, 2021).

### **6.3 The CBS variables used in addition to sector and type**

Aside from co-op sector and type, 28 other variables from the CBS are used in this thesis.

These variables have been grouped into two general categories:

1. The factors influencing control costs; and
2. Corporate governance structures and behaviours.

The variables from the CBS examined in this thesis are listed in Table 6.2 according to these two categories.

**Table 6.2** Variables from the CBS used in this thesis by category

Factors Influencing Control Costs	Corporate Governance Structures & Behaviours
Co-op sector	Number of directors on the board
Years in business	% of directors who are female
Number of members	% of directors who are new
% of members with voting rights	% of directors who are long serving
Member capital commitment	% of directors who are not members of the co-op
% of co-op's business from largest member	Board meetings per year
% of co-op's business from largest 10 members	Director preparation for board meetings
Member heterogeneity	Who sets board meeting agendas
Geographic region*	Whether the board uses external advisors
% of members who voted in the last election	CEO involvement in director selection
% of members who attended the last AGM	Board involvement in director selection
	Board involvement in selecting senior management
	Board communication with management not the CEO
	Board control over discretionary spending
	Board involvement in budgeting
	Board involvement in strategic planning
	Subsection: Variables Specific to CEO Contracts
	Whether quantifiable measures are used to assess CEO performance
	% of CEO compensation that is performance based

\* Geographic region is not part of the CBS. It was created by the author of this thesis.

#### 6.4 Factors that influence the cost of controlling the firm

As detailed in Chapter 5, differences in control costs between consumer and producer co-ops should be associated with differences in corporate governance. The CBS does not measure control costs directly, however. Instead, it has several variables that map onto the

factors that influence control costs. These variables, and their associated factors, are shown in Table 6.3. After the table, descriptions are provided for the variables that are not self-explanatory, such as member heterogeneity.

**Table 6.3** Factors influencing control costs and the associated CBS variables

Factor Influencing Control Costs	Variable from the CBS
<i>Economic connection</i>	<ul style="list-style-type: none"> <li>• Member capital commitment</li> </ul>
<i>Large members</i>	<ul style="list-style-type: none"> <li>• Business from a co-op's largest member</li> <li>• Business from a co-op's largest 10 members</li> </ul>
<i>Firm age</i>	<ul style="list-style-type: none"> <li>• Years in business</li> </ul>
<i>Firm size</i>	<ul style="list-style-type: none"> <li>• Number of members</li> </ul>
<i>Geographic region</i>	<ul style="list-style-type: none"> <li>• Geographic region</li> </ul>
<i>Firm sector</i>	<ul style="list-style-type: none"> <li>• Firm sector</li> </ul>
<i>Member heterogeneity</i>	<ul style="list-style-type: none"> <li>• Member heterogeneity</li> <li>• The percentage of members with voting rights</li> </ul>
<i>Members' participation in governance</i>	<ul style="list-style-type: none"> <li>• The percentage of members who voted in a co-op's last election</li> <li>• The percentage of members who attended a co-op's last AGM</li> </ul>

#### 6.4.1 Member capital commitment

Members contribute to their co-operatives in a number of ways. Sometimes there is an initial capital commitment that must be made to become a member (Lund, 2013). This fee can range from a nominal sum to a substantial investment from the potential member. For the CBS, member capital commitment represents the dollar amount required to become a member. It is assumed that higher fees are associated with stronger economic connections.

#### 6.4.2 Percent of a co-op's business that comes from its largest members

Although the CBS does not provide information on the average amount of business conducted by a member, it does show how much of a co-op's business comes from its



largest member (i.e., the member who conducts the most business with the firm) as well as its ten largest members. The assumption is the economic connection between a co-op and its largest member becomes stronger as that member accounts for more of the co-op's business. The same relationship is assumed to exist between a co-op and its ten largest members — as the amount of business increases, so does the economic connection.

#### 6.4.3 Geographic region

Participating co-ops' geographic region was not part of the original CBS dataset.

Information about the region a co-operative was included by the author to provide greater insight into a firm's complexity. As discussed in Chapter 5, co-ops with wider geographic regions are considered more complex (Markarian & Parbonetti, 2007). Depending on the area a co-op serves, it was placed in one of four categories:

- *Local*: Local co-ops have a single location, or multiple locations all within one municipality. They serve the smallest geographic region and are considered the least complex geographically.
- *State*: The co-op serves more than one location, but all locations are within a single state.
- *Regional*: The co-op serves multiple states that border onto each other.
- *National or International*: Considered to be the most geographically complex, national co-ops operate in multiple non-bordering states and international co-operatives operate in multiple countries. National and international co-operatives were placed together due to limited sample size. Only eight co-ops in the CBS had operations in more than one country.

#### 6.4.4 Member heterogeneity

To measure member heterogeneity, respondents were asked to identify and describe any interest groups amongst their members. Respondents' answers were coded in a range from low to high.

- *Low heterogeneity*: A co-op's membership is not diverse and any differences between members are not due to unalterable characteristics.
- *Medium heterogeneity*: There are two or more groups of members with commonly opposing viewpoints. Compromise between groups is usually reached with only minor difficulty, and the co-op's profitability is not affected.
- *High heterogeneity*: Heterogeneity is one of the co-op's largest problems and has affected the firm's survival before.

#### 6.4.5 Percent of members with voting rights

Traditionally, all a co-op's members would have voting rights. "One membership, one vote" is one of the foundational co-operative principles (International Co-operative Alliance, 2005). However, there are deviations from this principle. In the CBS sample, there are co-ops that have both voting and non-voting members.

The percent of members with voting rights, the proportion of a co-op's membership that can vote, provides as second measure of member heterogeneity. As the proportion of members with voting rights gets smaller, member heterogeneity is assumed to increase. This is because two distinct member types emerge as the proportion falls — those who can

vote, and those who cannot. With those two member types should come different interests.<sup>33</sup>

## 6.5 Explanation of governance structures and behaviours variables

A common understanding of what constitutes “better” corporate governance is based on the association between firm performance and governance structures (Sur, 2014).

Structures such as board size or whether directors are independent, grey, female or busy have been looked at to determine the “optimal” board makeup.

There is, however, concern that in the rush to improve corporate governance, undue attention has been placed on board composition and governance structures (Lorsch, 2012a). To properly understand a firm’s corporate governance, both its governance structures and governance behaviours need to be understood. This means not only knowing a board’s composition, but also what the board does. ~~To this extent,~~ The CBS provides information on both structures and behaviours. This section describes the governance structures and behaviour variables contained in the CBS.

### 6.5.1 Percent new directors and long-serving director

Directors at either end of their board tenure may be problematic in terms of their ability to oversee management. New directors often lack the expertise to challenge management (Wertheim et al., 2016). Long-serving directors are more likely to have been co-opted by

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<sup>33</sup> The Saskatchewan Wheat Pool is an example of conflicting member interests captured by differences in voting rights (Fulton & Larson, 2009b). To raise capital, the Pool sold shares on the Toronto Stock Exchange. These shares did not come with voting rights, and what emerged were two sets of owners with different goals and interests — the famer members who could vote and the investors who could not.

management or may be less effective because they are out of touch with the current state of the industry (Vafeas, 2003; Hymowitz & Green, 2013).

The CBS has information regarding the number of directors on a board that are either new or long-serving. The study classifies new directors as those having served for less than four years. Long-serving directors are those who have served 20 or more years.

#### *6.5.2 Percent of directors that are not members of the co-op*

Usually, co-ops require directors to be members. However, there are instances when non-member directors are added to the board. In the United States for example, Farm Credit associations are required to have at least one non-member director on the board (Farm Credit Administration, n.d.). Non-member directors are thought to improve corporate governance because they are independent (Farm Credit Administration, n.d.). They are typically chosen to provide skills and expertise that member directors lack in an effort to professionalize the board (Kenkel, 2019). To capture the number of non-member directors, the CBS asks whether a co-op has any voting members of the board that are not members of the firm.

#### *6.5.3 Number of board meetings per year and board preparation for board meetings*

The duration of board meetings, as well as the degree of preparation required for board meetings were covered in Chapter 3. Similar to board size, as firms become more complex, the time required for effective oversight by the board also increases (Lipton & Lorsch, 1992). The CBS provides data on the number of board meetings a co-op has per year. The

CBS also provides data on how prepared directors are for board meetings. Board preparedness was classified as:

- *Low preparedness*: Only one or two directors come prepared with questions and having read their board information packets.
- *Medium preparedness*: Most directors are prepared, although one or two read their information packets right before meetings.
- *High preparedness*: All directors have read their information packets and come prepared with questions and concerns.

#### *6.5.4 Who sets board meeting agendas*

As discussed in Chapter 3, whoever sets a board meeting's agenda can influence what the board looks at, what is considered priority and where resources are allocated (Block & Rosenberg, 2003). The CBS categorizes agenda setting as done by the CEO only, done by the CEO with board chair approval, done by the board chair only, done by the board chair with CEO approval, or as done by someone else.

#### *6.5.5 Does the board use external advisor*

Discussed in Chapters 3 and 5, using external advisors is a way for the board to bolster its knowledge, something that becomes increasingly important as co-ops grow more complex. Because they can be used to bridge gaps in skills or experience, external advisors also provide an alternative to selecting directors with requisite expertise.

### 6.5.6 *The level of CEO involvement in director selection*

The ability to resist a CEO's influence is fundamental to the concept of director independence; if directors are coopted or unjustifiably swayed by management, they cannot effectively represent members. CEOs who can influence director selection could populate the board with directors who are formally independent (i.e., meet mandated requirements such as not being employees, or having no material interest in the firm), but still overly sympathetic to management (see Chapter 5 for a discussion on independent directors and CEO involvement in director selection).

The CBS asked CEOs about the role they played in selecting board candidates.

Responses were then coded into one of three different categories:

- *Low level of involvement:* The CEO has no role on the nominating committee and is not involved in the board's discussion of potential candidates.
- *Medium level of involvement:* The CEO supports the board or nominating committee but is not involved in the nomination process.
- *High level of involvement:* The CEO plays an active role in suggesting and screening candidates.

### 6.5.7 *The level of board involvement in director selection*

The board's involvement in director selection is a two-edged sword. As discussed in Chapter 5, the board may have to actively recruit and endorse nominees to ensure directors have the appropriate skills and expertise (Birchall, 2017). However, too much influence over who can stand for election threatens democratic member control by diminishing or removing members' ability to choose board candidates (Birchall, 2017).

The CBS provides insight into the board's involvement in director selection.

Involvement is measured in three levels:

- *Low level of involvement:* Board nominees come from the membership without discussion or suggestions from the board.
- *Medium level of involvement:* Many candidates receive board endorsement, or are encouraged by the board to run, but nominees' likelihood of winning is not determined by the board's support.
- *High level of involvement:* The board exercises significant influence on the nominating and selection process.

#### *6.5.8 The level of board involvement in selecting senior management (aside from the CEO)*

As mentioned in Chapter 5, the board sets the firm's corporate culture and values (Business Roundtable, 2016; Rassart & Miller, 2013). By determining who becomes senior management, the board can ensure there is the desired "tone at the top". It can also fill managerial positions with individuals who are loyal to the board, and who may be more willing to share information (in contrast to managers who are loyal to the CEO and unwilling to give any information casts a negative light on the CEO). Still, there are drawbacks to board involvement in selecting the senior management team. The team may lack diversity if the board hires people whose demographics and experience are similar to its own (Groves, 2007). And the board may lack the knowledge and skills necessary to make effective hires.

The CBS provides information on the level of board involvement in selecting senior management. The levels of involvement are:

- *Low level of involvement:* The board has no role in selecting the CEO's management team.
- *Medium level of involvement:* The board provides input, but the CEO makes the decision on who to hire.
- *High level of involvement:* The board is directly involved in hiring the CEO's management team.

#### *6.5.9 How much the board communicates with management, other than the CEO, outside of board meetings*

The board's ability to advise and oversee management is contingent on the information it receives. By engaging senior management, the board can get information that the CEO has not provided or is unwilling to give (Sonnenfeld, 2002). Yet, discussions between managers and the board, without CEO input or control, may undermine a CEO's authority or provide the board with conflicting, irrelevant or excessive information (Bastardi & Shafir, 1998; Sonnenfeld, 2002). Excessive communication between the board and senior management outside of board meetings may also place an undue burden on managers (Beck, 2016).

While the CBS does not provide information on what happens if directors engage management outside of board meetings, it does indicate whether such a practice is permitted, and how frequently it occurs. Levels of communication are classified as:



- *Low levels of communication:* Directors are actively discouraged from discussing firm business with management (other than the CEO) outside of board, or committee, meetings.
- *Medium levels of communication:* Directors discuss firm business with management (other than the CEO) outside of board meetings approximately once or twice a month.
- *High levels of communication:* Directors frequently discuss firm business with management (other than the CEO) outside of board or committee meetings.

#### 6.5.10 Board control over discretionary spending

Board control over discretionary measures the boards involvement in reviewing and approving changes to the budget once it has been set. The CBS captures the degree of control in three levels:

- *Low level of control:* While the CEO reports budgetary changes, the board does not set a limit or control the CEO's spending.
- *Medium level of control:* The CEO asks for approval for big items, and the board does not often say "no".
- *High level of control:* The board sets strict monetary guidelines on the CEO's ability to make budgetary changes.

#### 6.5.11 Board involvement in budgeting and board involvement in strategic planning

The board has two overarching duties, as monitor and advisor (Larcker & Tayan, 2015). As advisors, directors should participate in the development of a firm's budget and strategy

(Scherrer, 2003). The CBS provides information on directors' level of involvement in budgetary and strategic planning.

For budgetary planning, board involvement is categorized as:

- *Low levels of involvement:* The board is not involved in preparing the annual budget or informed of budgetary changes.
- *Medium levels of involvement:* The board approves the annual budget and receives regular financial reports. While the board is informed of budgetary changes throughout the year and may ask questions, it is unlikely to oppose any recommendations the CEO makes for the annual budget or changes to the budget throughout the year.
- *High levels of involvement:* The board is involved in preparing the budget and it actively monitors financials going so far as rejecting CEO recommendations for budgetary changes.

For strategic planning, board involvement is categorized as:

- *Low levels of involvement:* The board is passive in the strategy forming process, accepting the decisions made by the CEO and management.
- *Medium levels of involvement:* The board provides advice on what strategies to take, and it collaborates with management when strategies are developed.
- *High levels of involvement:* The board is the decision maker and sets the strategy.

## **6.6 Explanation variables specific to CEO contracts**

Of the board's two roles, overseeing management and advising management, this thesis takes the position that the oversight function is the most critical. A key component of

oversight is the CEO's contract. Given that the board's ability to monitor management is often limited, contracts that tie a CEO's remuneration to firm performance have become a mainstay in corporate governance.

The logic is simple. Firm performance can be measured, and its improvement is in owners' best interests. By tying a CEO's compensation to how well her firm does, she will work towards the firm's betterment so that her own compensation can be improved. This way, managerial opportunism may be curtailed, because the CEO's interests are now tied to those of owners' (see Chapters 2 and 3 for a discussion of agency theory and the use of performance-based compensation).

Although the CBS does not provide information on how much of a CEO's compensation is based on firm performance, it does capture whether compensation is tied to an incentive, and whether that incentive can be monitored. Two variables from the CBS that related to CEO contracting are included in this thesis.

#### *6.6.1 Quantifiable measures used to assess CEO performance*

For incentive-based contracting to be effective, it should be tied to something that can be measured. The CBS asks whether the CEO's compensation is tied to a specific, quantifiable measure.

#### *6.6.2 The percent of CEO compensation is performance based*

The CBS provides a measure of how much of a CEO's compensation is incentive-based. It is unclear what the incentives are, whether they are based on how the firm is doing or some other measure of performance (e.g., member satisfaction).

## 6.7 Lack of Financial Measures

Most research on corporate governance is concerned with the association between governance and a firm's financial performance. This thesis does not include a measure of financial performance because the financial data contained in the CBS is patchy. Of the 485 co-operatives surveyed, information on assets, liabilities, income, and expenses is only available for less than half of the co-ops ( $N = 227$ , 47%).

Board compensation has also been used when looking at corporate governance (see Ryan and Wiggins (2004) and Brick et al. (2006) for examples). Although the CBS has compensation data, only 277 (57%) co-operatives provided information on how much their directors were paid. Consequently, board compensation was also left out of this thesis.

Including either the board compensation data or the financial data in the analyses would have lowered the sample size enough to do two things. It would have decreased the chance of finding statistically significant results, and it would have increased the chance of results being biased due to violations of normality (see Chapter 8 for a discussion of the assumption of normality and the importance of a large sample size).

## 6.8 Conclusion

This chapter provided a description of the CBS, its methods, and many of the variables used in this thesis. Using the variables described above, Chapter 7 provides general statistics describing the CBS. Chapter 8 examines whether consumer and producer co-ops differ regarding the factors that influence the cost of controlling the firm. Chapter 8 also examines whether consumer and producer co-ops differ regarding their corporate

governance structures and behaviours. Overall, results suggest that the theorized relationship between control costs and corporate governance is empirically supported. As control costs increase, monitoring management will be done more by the board than by members. This provides further support that corporate governance is endogenously determined.

## **Chapter 7. Descriptive Analysis of the Co-operative Business Study**

The purpose of this chapter is to provide descriptive statistics about the Co-operative Business Study (CBS) without parsing it into consumer and producer co-ops. Analyzing the CBS without comparing co-op type offers a baseline understanding of co-operatives in general.

Section 7.1 of this chapter provides descriptive statistics for the variables outlined in Chapter 6. Whenever possible, additional figures are presented to show how the co-ops from the CBS compare to investor-owned firms (IOFs) or to co-ops outside of the study, such as Canadian co-ops. Section 7.2 summarizes the results and Section 7.3 concludes the chapter.

### **7.1 General statistics for participating co-ops as a whole**

This thesis groups the variables from the CBS into two general categories: 1) the factors that influence control costs, and 2) corporate governance structures and behaviours. The first group contains variables that, according to existing research, affect the cost of controlling firm. The second group contains variables related to various aspects of corporate governance. Research related to variables associated with control costs was discussed in Chapter 5, while research related to the corporate governance variables was discussed in Chapter 3. Descriptions for both sets of variables were provided in Chapter 6. Table 7.1 lists the variables in each group.

**Table 7.1** List of Co-operative Business Study variables analyzed in this chapter

Factors Influencing Control Costs	Corporate Governance Structures & Behaviours
Member capital commitment	Number of directors on the board
% of co-op's business from largest member	% of directors who are female
% of co-op's business from largest 10 members	% of directors who are new
% of members with voting rights	% of directors who are long serving
Years in business	% of directors who are not members of the co-op
Number of members	Board meetings per year
Geographic region*	Director preparation for board meetings
Co-op sector	Who sets board meeting agendas
Member heterogeneity	Whether the board uses external advisors
% of members with voting rights	CEO involvement in director selection
% of members who voted in the last election	Board involvement in director selection
% of members who attended the last AGM	Board involvement in selecting senior management
	Board communication with management not the CEO
	Board control over discretionary spending
	Board involvement in budgeting
	Board involvement in strategic planning
	<b>Subsection: Variables Specific to CEO Contracts</b>
	Whether quantifiable measures are used to assess CEO performance
	% of CEO compensation that is performance based

\* Geographic region is not part of the CBS. It was created by the author.

### 7.1.1 General results regarding the variables influencing control costs

Starting with capital commitment, the average fee required to join a co-op was \$1,536 ( $SD = \$17,483$ , see Table 7.2). This number is inflated due to outliers. There are two co-ops with capital commitments that are more than three standard deviations from the average — \$130,000 and \$350,000 respectively. Removing these co-operatives drops the average to \$516 ( $SD = \$3,154$ ). Interestingly, the median capital commitment was five dollars, and almost half of the co-ops surveyed had no membership fees at all ( $N = 227$ , 47%).

**Table 7.2** Member capital commitment

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Member capital commitment (\$)	471	1,536	17,483	5	0	350,000

Although less than one tenth of the average co-op's business was accounted for by its largest member ( $M = 9\%$ ,  $SD = 14$ , see Table 7.3), nearly one quarter of business came from its ten largest members ( $M = 24\%$ ,  $SD = 26$ ). Both the largest member variables are inflated because of outliers. If percentages more than three standard deviations from the average are removed, the average amount of business accounted for by a co-op's largest member falls to seven percent ( $SD = 9$ ), and the average amount accounted for by a co-op's ten largest members falls to nineteen percent ( $SD = 18$ ).

**Table 7.3** Percent of business by largest member and largest 10 members

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Percent of business by largest member	401	9	14	4	0	98
Percent of bus. by largest 10 members	398	24	26	15	0	100



As shown in Table 7.4, co-operatives in the CBS had been in business for over half a century ( $M = 55$  years,  $SD = 31$ ). Additionally, their average membership size was 14,188 members ( $SD = 124,770$ ). This number is positively skewed, however. Three co-operatives had memberships larger than three standard deviations from the mean. If these co-ops are removed, then average membership size drops to 6,065 ( $SD = 17,463$ ).

**Table 7.4** Years in business and membership size

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Years in business	485	55	31	59	1	145
Total number of members	484	14,188	124,770	1,300	3	2,500,000

Most co-ops in the study existed at either the local ( $N = 193$ , 40%) or state level ( $N = 204$ , 42%). Table 7.5 shows the breakdown of geographic region.

**Table 7.5** Geographic region

	<i>N</i>	Local	State	Regional	Int./national
Geographic region	483	40%	42%	10%	8%

As discussed in Chapter 6, there are more producer co-ops ( $N = 274$ , 56%) in the CBS than consumer co-ops ( $N = 211$ , 44%). Just under half of the co-operatives surveyed were in the agricultural sector ( $N = 221$ , 46%). The next largest sector was financial ( $N = 88$ , 18%), followed by grocery ( $N = 62$ , 13%) and utilities ( $N = 62$ , 13%). 7.6 provides a breakdown of co-op sector.

**Table 7.6** Co-op sector

	<i>N</i>	Agriculture	Financial	Grocery	Other	Service	Utilities
Co-op sector	485	46%	18%	13%	2%	9%	13%

In terms of member heterogeneity, most co-ops were relatively homogenous. Almost two thirds of co-ops surveyed ( $N = 293$ , 64%) indicated having low levels of heterogeneity, meaning their memberships did not appear to have diverse or diverging interests. Table 7.7 shows the distribution of member heterogeneity.

**Table 7.7** Member heterogeneity

	<i>N</i>	Low	Medium	High
Member heterogeneity	459	64%	26%	10%

Most of the co-operatives in the CBS (87%,  $N = 421$ ) gave voting rights to all their members (see Table 7.8 for the descriptive statistics regarding the percent of members with voting rights). Of the 63 co-ops that restricted voting rights, 38 gave voting rights to less than half of their members.

**Table 7.8** Percent of members with voting rights

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Percent of members with voting rights	484	93	21	100	2	100

In terms of average member engagement, just under one third of members voted in their co-op's last election ( $M = 29\%$ ,  $SD = 29$ ), and one quarter attended their co-op's last AGM ( $M = 26\%$ ,  $SD = 29$ ). Table 7.9 provides more details about engagement levels.

**Table 7.9** Average levels of member engagement

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Percent of members who voted in their co-op's last election	421	30	29	20	0	100
Percent of members who attended their co-op's last AGM	428	26	29	11.5	0	100

### 7.1.2 General results regarding the variables related to governance structures and behaviours

The average board size for co-ops in the CBS was nine directors ( $M = 9$ ,  $SD = 4$ , see Table 7.10 for details). Canadian co-operatives have the same average board size (Canadian Co-operative Association & Brown Governance Inc., 2009). Investor-owned firms have smaller boards. On average, IOFs have eleven directors (Spencer Stuart, 2019; Spencer Stuart, 2020).

**Table 7.10** Number of directors on the board

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Number of directors on the board	482	9	4	8	3	42

Only an average of sixteen percent of directors were female ( $M = 16$ ,  $SD = 24$ ). Most boards in the CBS only had male directors (see Table 7.11 for details). Overall, just over half of co-operatives (52%,  $N = 249$ ) had no female directors, most of these were in the agriculture sector ( $N = 185$ ). Figure 7.1 shows the distribution of agricultural co-ops relative to all other sectors in terms of female directors. Whereas 84 percent of agriculture co-ops lacked female directors, only 24 percent of all other co-ops had no female directors on their boards.

**Table 7.11** Percent of female directors on the board

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Percent of female directors	480	16	24	0	0	100

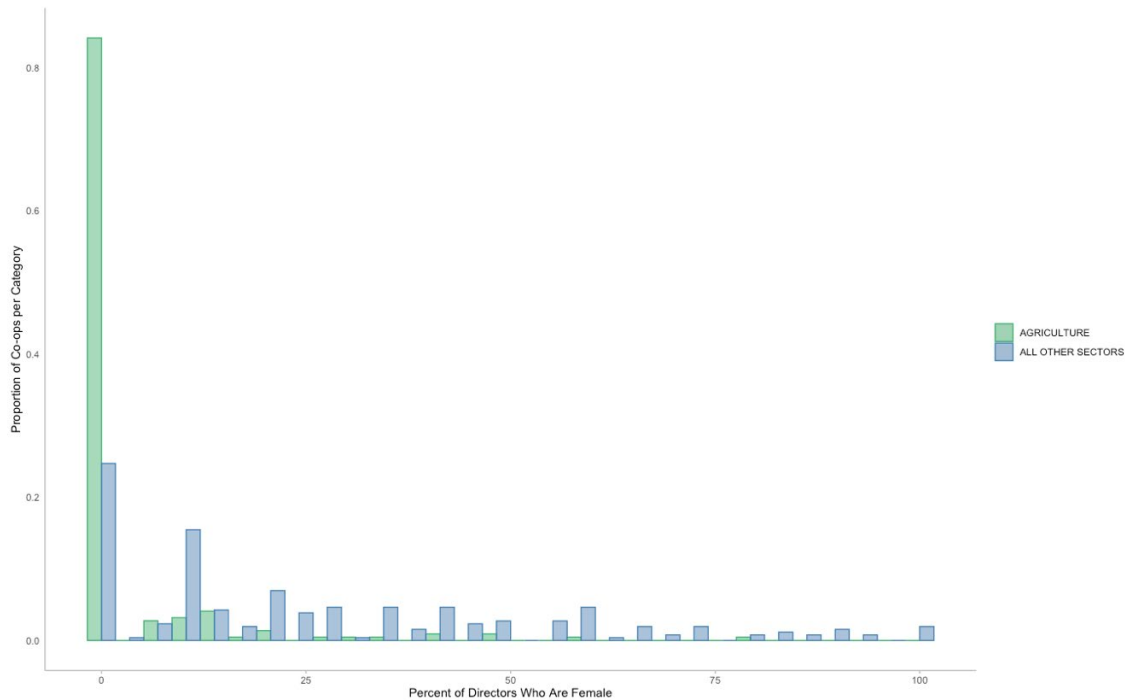
**Figure 7.1** Distribution by sector type of the percent of female directors on the board

Table 7.12 provides details on the remaining three governance structure variables.

Most directors belonged to the co-ops they oversaw. Only two percent of directors were non-members ( $SD = 8$ ). Also, a minority of directors were either new directors ( $M = 24\%$ ,  $SD = 25$ ), having sat on the board for less than four years, or long-serving directors ( $M = 15\%$ ,  $SD = 20$ ) who had been on the board for twenty years or more.

**Table 7.12** Percent of non-member, new and long-serving directors

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Percent of non-member directors	478	2	8	0	0	100
Percent of new directors	475	24	25	18	0	100
Percent of long-serving directors	475	15	20	8.5	0	100

Turning to governance behaviours, co-op boards met, on average, eleven times per year ( $M = 11$  meeting per year,  $SD = 4$ ). Most directors came to the meetings prepared, with either medium (32%) or high levels of preparation (48%). Table 7.13 breaks down board meetings per year, and Table 7.14 provides details regarding director preparation.

**Table 7.13** Board meetings per year

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Board meetings per year	428	11	4	12	0	48

**Table 7.14** Director preparation for board meetings

	<i>N</i>	Low	Medium	High
Director preparation for board meetings	461	20%	32%	48%

The agenda for board meetings was usually set by management, either by the CEO alone (39%), or by the CEO with board chair approval (25%). For under one fifth of boards, meeting agendas were set by the board chair (12%), or by the board chair with CEO approval (4%). For the remaining nineteen percent of co-ops, board meeting agendas were set by someone other than the CEO or board chair (see Table 7.15 for details on who sets board meeting agendas).

**Table 7.15** Who sets the agenda for board meetings

	<i>N</i>	CEO only	CEO w/ Chair	Chair only	Chair w/ CEO	Other
Who sets the board meeting agenda	480	39%	25%	12%	4%	19%

As shown in Table 7.16, most co-ops reported mid-level involvement by the board in strategic planning (42%) and budgeting (49%). This means, in terms of strategic planning, most boards worked collaboratively with management to set strategies. As for budgeting, boards most often approved annual budgets, received regular financial reports, and were unlikely to challenge any recommendations made by management.

**Table 7.16** Board involvement in strategic and budgetary planning

	<i>N</i>	Low	Medium	High
Board involvement in strategic planning	470	29%	42%	30%
Board involvement in budgeting	467	24%	49%	27%

While boards usually exerted medium levels of involvement in budgeting, they exercised greater control over discretionary spending (see Table 7.17 for a breakdown of levels of control). Forty-five percent of co-ops indicated that their boards set strict monetary guidelines on their CEO's ability to make budgetary changes. This suggests that, although boards readily accepted budgets laid out by management, they were less amenable to changes once the budget was set.

**Table 7.17** Board control over discretionary spending

	<i>N</i>	Low	Medium	High
Board control over discretionary spending	455	25%	29%	45%

For two thirds of participating co-ops (66%), the CEO was not involved in director selection, neither sitting on the nominating committee nor participating in the board's discussion of potential nominees. A similarly low level of involvement was found for nearly half of boards (45%); boards did not suggest or encourage potential candidates to run for board election (see Table 7.18 for levels of CEO and board involvement in director selection). Twenty-three percent of boards showed medium levels of involvement in director selection, suggesting candidates, and encouraging them to run. The remaining thirty-two percent of boards were highly involved in director selection, exercising significant influence both in the nominating process, and on candidates' chances of winning — board endorsement improved a candidate's odds of getting elected.

**Table 7.18** CEO and board involvement in director selection

	<i>N</i>	Low	Medium	High
CEO involvement in director selection	457	66%	18%	16%
Board involvement in director selection	459	45%	23%	32%

Co-op boards appear less involved in selecting senior management (aside from the CEO) than they are in selecting directors (see Table 7.19 for a breakdown of board involvement in selecting senior management). More than three quarters (77%) of boards had no role in selecting the CEO's management team. The remaining boards are almost evenly split between having a medium level of involvement only providing input in the

selection process but nothing more, and a high level of involvement by directly influencing who gets hired.

**Table 7.19** Board involvement in selecting senior management (aside from the CEO)

	<i>N</i>	Low	Medium	High
Level of board involvement in selecting the senior management team (aside from the CEO)	437	77%	11%	12%

Board communication with senior management (aside from the CEO) outside of board meetings was also generally low. Just under two thirds (64%) of co-ops actively discouraged board members from discussing firm business with senior management outside of board meetings. One fifth (20%) of boards occasionally met with senior management (one to two times per month) outside of board or committee meetings. And sixteen percent of boards frequently discussed firm business with senior management outside of board or committee meetings. Lastly, nearly three quarters of the co-ops surveyed (72%) did not use external advisors. Table 7.20 shows the distribution of board communication with senior management, and Table 7.21 shows the distribution for external advisor use.

**Table 7.20** Board communication with senior management

	<i>N</i>	Low	Medium	High
Level of board communication with management other than the CEO	421	64%	20%	16%



**Table 7.21** Use of external advisors by the board

	<i>N</i>	Yes	No
Does the board use external advisors	477	29%	72%

#### 7.1.4 Variables related to CEO contracts

Looking at CEO contract specifics, only two fifths (41%) of participating co-ops used quantifiable measures to assess CEO performance (see Table 7.22 for the distribution of the use of quantifiable measures). This means over half of the of co-ops surveyed (59%) used subjective metrics to gauge their CEO's performance (if they measured performance at all). In terms of total CEO compensation, almost one fifth was performance-based ( $M = 16\%$ ,  $SD = 24$ ). Table 7.23 breaks down how much CEO compensation was performance based.

**Table 7.22** Use of quantifiable measure to assess CEO performance

	<i>N</i>	Yes	No
Does the board use quantifiable measures to assess CEO performance	471	41%	59%

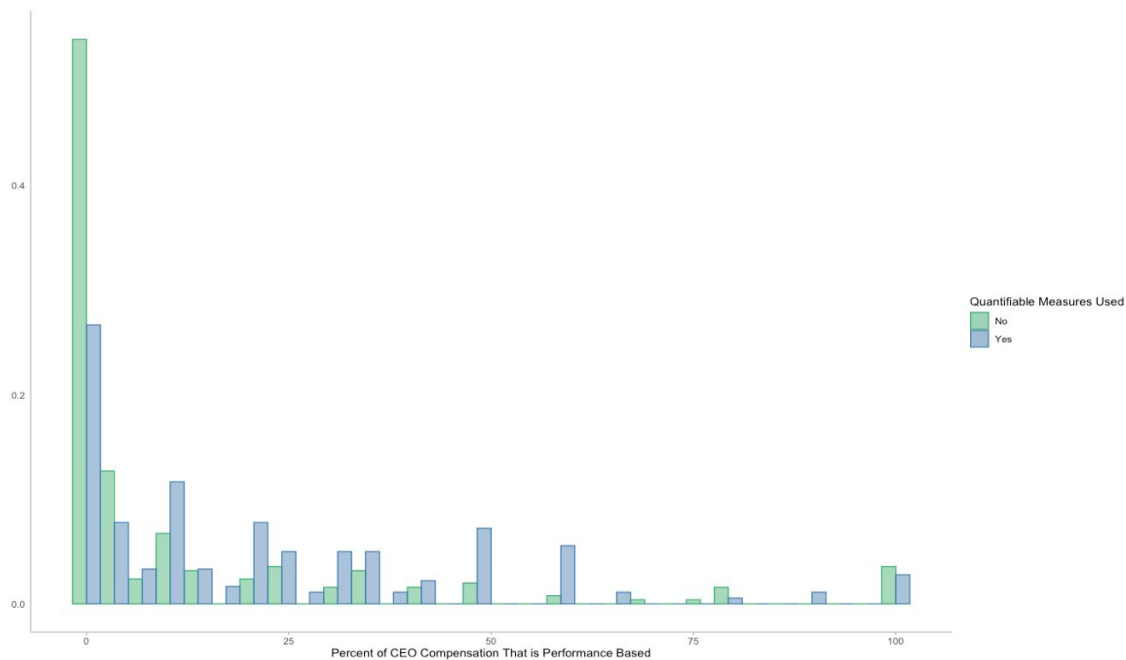
**Table 7.23** Percent of CEO compensation that is performance based

	<i>N</i>	Mean	Standard Deviation	Median	Min.	Max.
Percent of CEO compensation that is performance based	435	16	24	5	0	100

It is worth highlighting that even if a co-op did not use quantifiable measures to assess CEO performance, some percentage of CEO compensation might still be performance based. Of the 279 co-ops that did not use quantifiable measures, just over two fifths (42%) still

incorporated some degree of performance-based assessment into their CEO's compensation (see Figure 7.3).

**Figure 7.3** Distribution by Use of Quantifiable Measures of the Percent of CEO Compensation that is Performance Based



## 7.2 Summary of Findings

Just over half of the co-ops in the CBS were producer co-ops, the majority of which were in the agriculture sector. Most co-ops surveyed operated either locally or state-wide, had been in business 50 years or more, and had at least 1,000 members. Most co-ops also had relatively homogenous memberships, and most gave voting rights to all their members.

Nearly half of the co-ops surveyed did not have membership fees, and the median capital commitment was five dollars. A co-op's largest member accounted for one tenth of its business, on average, while its ten largest members accounted for one quarter of business.

The average board size for participating co-ops was nine directors. Most directors were male, belonged to the co-operatives they oversaw and had been serving on their boards for more than three years, but less than twenty. Only one fifth of directors were poorly prepared for board meetings. Most directors came to board meetings with questions and concerns, having familiarized themselves with their co-op and its operations beforehand. Co-ops held an average of eleven board meetings per year, and meeting agendas were usually set by the CEO.

In terms of advising management, most boards exhibited medium levels of involvement in strategic and budgetary planning. While boards provided input into setting strategy or creating the budget, decisions were primarily made by the CEO. Directors were more involved in controlling discretionary spending, however, usually setting strict guidelines that limited management's ability to change a budget once set.

For most co-ops, management exerted low levels of influence in director selection. Boards themselves were more involved in selecting directors, either suggesting candidates for election or exercising significant influence on a candidate's chance of winning. Boards were less involved in selecting senior management (aside from the CEO). More than three quarters of boards had no role in the selection process. And most boards had no contact with senior management (aside from the CEO) outside of board meetings. Finally, only two fifths of co-ops used quantifiable measures to assess CEO performance, and only a small portion of CEO compensation was performance based.

### **7.3 Conclusion**

This chapter provided an overview of co-ops in the CBS. How consumer and producer co-ops compare to each other is examined next in Chapter 8. Existing evidence and Hansmann's theory of ownership suggest that because consumer co-ops have higher control costs, their boards should be more involved monitoring management than the boards of producer co-ops. Chapter 8 tests whether the data from the CBS supports the presumption that consumer co-ops have higher control costs, and whether higher control costs are associated with increased participation by the board in governance.

## Chapter 8. Differences Between Consumer and Producer Co-ops

According to Hansmann, the more it costs owners to control a firm, the less they will be involved in monitoring and overseeing management. As owners' involvement decreases, the board's involvement in corporate governance increases. To test the veracity of Hansmann's assertion this chapter compares consumer and producer co-ops to see whether the two organizational types differ in terms of control costs and board involvement in managerial oversight.

Laid out in Chapter 5, control costs can be divided into three components, or sub-costs: monitoring costs, the cost of managerial opportunism and the cost of collective decision-making. High monitoring costs, a low cost of managerial opportunism, and a high cost of collective decision-making are associated with high control costs. Low monitoring costs, a high cost of managerial opportunism, and a low cost of collective decision-making are associated with low control costs. Table 8.1 lists these sub-costs and their association with the cost of controlling the firm.

**Table 8.1** The components of control costs

Component	Effect on control costs
<i>Monitoring costs</i>	As monitoring costs increase, control costs increase.
<i>Cost of managerial opportunism</i>	As the cost of managerial opportunism decreases, control costs increase.
<i>Cost of collective decision making</i>	As the cost of collective decision-making increases, control costs increase.

How involved a firm's owners are in corporate governance is expected to vary depending on the firm's control costs. As control costs rise, owner involvement decreases,

and if control costs fall, owner involvement increases. The opposite relationship exists for a firm's board. As control costs rise, the board's involvement in corporate governance increases, and as control costs fall, the board's involvement decreases. Figure 8.1 shows this relationship, focusing on how control costs affect the board. Side A denotes a firm with a board that is less involved in corporate governance (especially overseeing management), while Side B denotes a firm with a board that is more involved.

**Figure 8.1** Predicted Relationships Between Control Costs and Corporate Governance

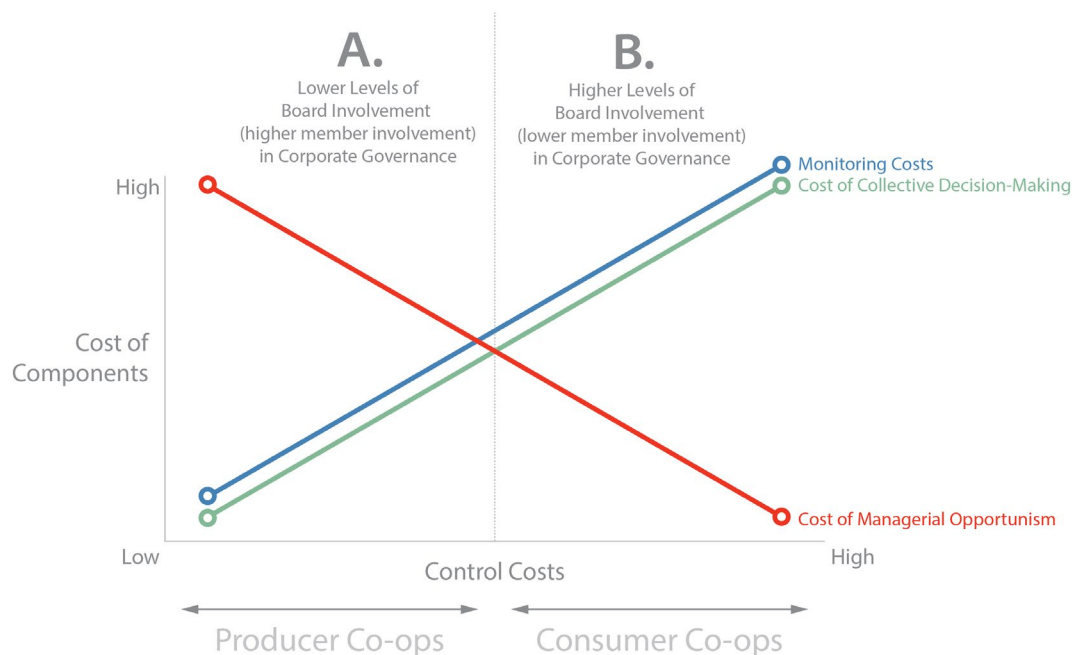
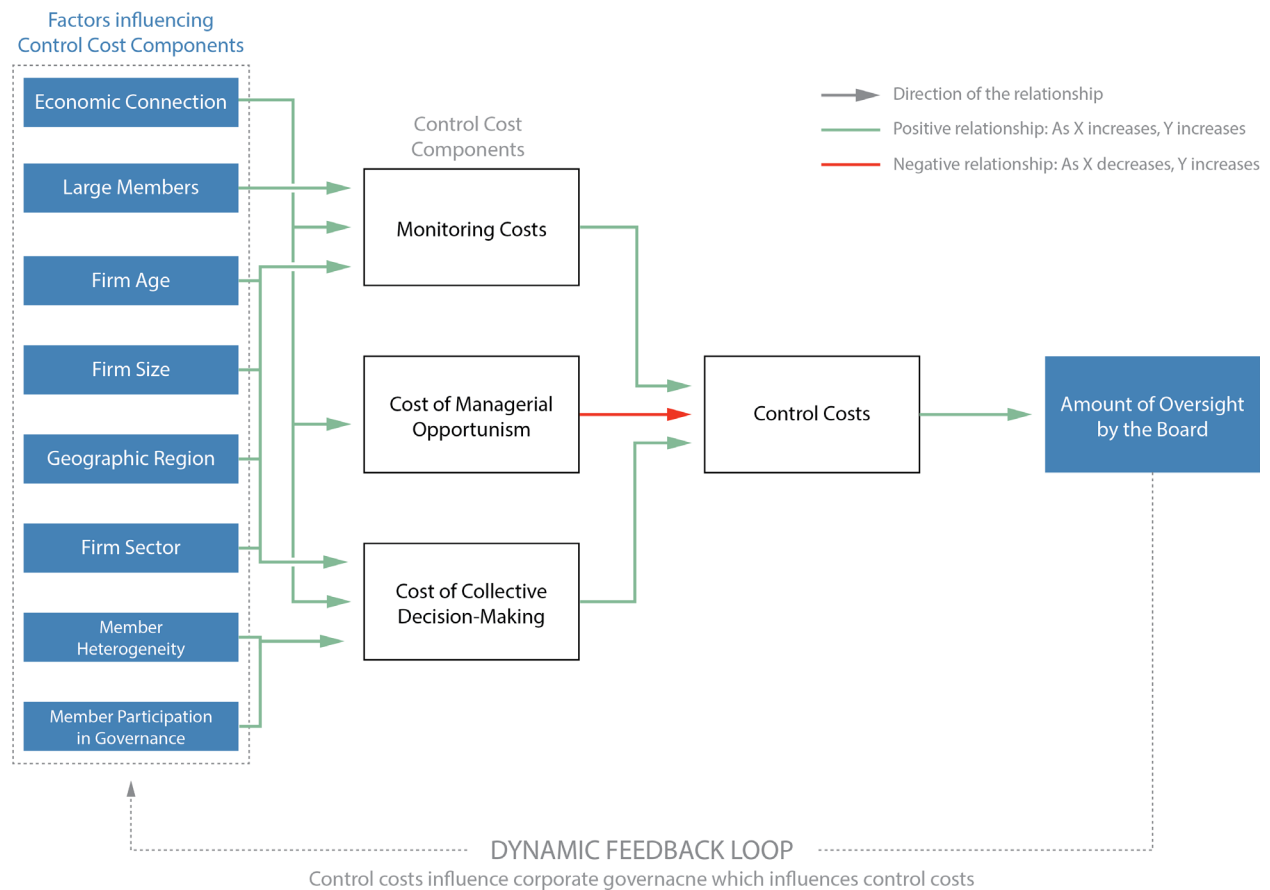


Figure 8.2 further describes the endogenous relationship between control costs and a firm's corporate governance. The process is a dynamic feedback loop. A set of factors influence the three components of control costs — monitoring costs, the cost of managerial opportunism and the cost of collective decision-making. The components influence the cost of controlling the co-op which, in turn, influences the how much of the oversight role is

done by members or the board. Subsequently, changes in a co-op's corporate governance feed back to the factors influencing control costs, and the cycle continues.

**Figure 8.2** The Control Costs/Corporate Governance Feedback Loop



Figures 8.1 and 8.2 capture the argument that underscores the main hypothesis of this thesis. Given the evidence presented in Chapter 5, the presumption is that consumer and producer co-ops differ in their control costs, with the cost of controlling the firm higher for consumer co-ops. From this presumption comes the main hypothesis that:

*Because consumer co-ops have higher control costs than producer co-ops, the boards of consumer co-ops should be more involved in overseeing management than the boards of producer co-ops.*

This hypothesis is tested three different ways. First, Principal Component Analysis (PCA) is used to reduce dimensionality and look for underlying patterns in the data. Second, the presumption that consumer co-ops have higher control costs is tested. Consumer and producer co-ops are compared with regards to the variables associated with control costs. Third, consumer and producer co-ops are compared to see how their governance structures and behaviours differ.

This chapter is laid out as follows, Section 8.1 details the statistical methods used throughout this chapter. Section 8.2 presents the results of the PCA. Section 8.3 examines whether consumer and producer co-ops differ in control costs. Section 8.4 lists a series of hypotheses that describe the expected relationships between control costs and corporate. Testing these hypotheses, Section 8.5 examines whether consumer and producer co-ops differ in terms of their governance structures and behaviours. Section 8.6 presents limitations and issues with the analyses, and Section 8.7 concludes this chapter.

### **8.1 Methods used to test differences between consumer and producer co-ops**

Three different statistical techniques are used in this thesis: PCA, Pearson's chi-square test of independence, and Welch's t-test. Principal Component Analysis is used to extract the important information from a dataset and summarize it into a smaller set of orthogonal variables called principal components (Abdi & Williams, 2010). Principal components are new variables constructed as linear combinations of the original variables. The first



principal component extracts the largest amount of variance from the original variables. Each subsequent component accounts for less variance.

Variables used in the PCA are standardized so that they have a mean of zero and a standard deviation of one. Standardization allows variables with different scales or units to be compared and prevents variables with larger ranges from overshadowing variables with smaller ranges. The variance of a standardized variable equals one. Any principal component with an eigenvalue lower than one accounts for less variance than the original, standardized variable and is dropped from the analysis.

Pearson's chi-square test is used to examine categorical data. It is a non-parametric test that can determine whether two categorical variables are associated with each other (Franke et al., 2011). The null hypothesis for the test is that the variables are independent — i.e., that there is no relationship between them.

If a chi-squared test is significant, then the null can be rejected. This means there is evidence suggesting an association between the two variables. The strength of that association is measured using Cramer's  $V$  (denoted by a capital  $V$  when reported alongside the chi-square). This is a form of correlation, with results from 0 to 1, and can be interpreted the same way — higher values indicate a stronger relationship. Table 8.2 shows the interpretation of Cramer's  $V$  used in this thesis (the table is courtesy of Akoglu (2018)).

**Table 8.2** Interpretation of Cramer's V

Cramer's V	Strength of the relationship
0 to 0.05	None or very weak
>0.05 to 0.10	Weak
>0.10 to 0.15	Moderate
>0.15 to 0.25	Strong
>0.25	Very Strong

Welch's t-test is used when variables are continuous. The test is based on Student's t-test, which is one of the most used statistics to compare the means of two groups (Fagerland & Sandvik, 2009).

Unlike Student's t-test, Welch's t-test does not require equal variance between the groups being looked at. It is still a parametric test, however. This means that for smaller sample sizes, Welch's t-test is valid only when the underlying distribution of the data is normal. If the assumption of normality is violated, results may be biased. The relationships between variables and their significance levels may be distorted. Consequently, the probabilities associated with rejecting the null hypothesis may be wrong.

As sample sizes get larger, however, the assumption of normality can be relaxed due to the Central Limit Theory. If a sample size is at least 200, Welch's t-test is robust even to heavily skewed distributions (Fagerland & Sandvik, 2009). This is important because some of the variables examined in this thesis are heavily skewed.

Aside from the six t-tests conducted on the PCA results in Section 8.2, fifteen t-tests and fourteen chi-square tests were run comparing consumer and producer co-operatives. Because all 29 of these tests use the same Co-operative Business Study (CBS) dataset, there is an issue of multiplicity. On average, it can be expected one out of every twenty tests is

significant just by chance, and not because of an underlying difference in the data between consumer and producer co-ops (Jafari & Ansari-Pour, 2019).

To reduce the rate of false positives (i.e., of finding a significant result due to chance), the p-values reported in Sections 8.3 and 8.5 have been adjusted using the Benjamini and Hochberg (BH) method. Broadly speaking, the BH method makes it more difficult to find significant results by increasing the p-value.

## **8.2 Principal Component Analysis of all continuous variables**

A PCA was conducted to reduce dimensionality (i.e., the number of variables looked at) and see if there were any patterns in the data. The fifteen continuous variables analyzed in this thesis were included in the PCA. Theory suggests that some of these variables are factors that influence control costs, while others are associated with corporate governance (see Table 8.3 for a list of continuous variables). By mapping the variables onto a small number of components, the PCA helps determine whether variables cluster into the control cost and corporate governance groups as expected, or if there is some other underlying pattern.

**Table 8.3** Continuous variables used in the Principal Component Analysis

Factors Influencing Control Costs	Corporate Governance Structures & Behaviours
Member capital commitment	Number of directors on the board
% of co-op's business from largest member	% of directors who are female
% of co-op's business from largest 10 members	% of directors who are new
Number of Members	% of directors who are long serving
Years in Business	% of directors who are not members of the co-op
% of members with voting rights	Board meetings per year
% of members who voted in the last election	% of CEO compensation that is performance based
% of members who attended the last AGM	

Table 8.4 shows the eigenvalues and variance for all the principal components that resulted from the PCA. Accepted practice is to keep components with an eigenvalue greater than one. Therefore, only the first six components are retained. Together they account for 64 percent of the variance in the data.

**Table 8.4** Principal components, eigenvalues and variance

	Eigenvalue	Variance	Cumulative Variance
<b>Component 1</b>	<b>3.03</b>	<b>20.2</b>	<b>20.2</b>
<b>Component 2</b>	<b>1.73</b>	<b>11.5</b>	<b>31.7</b>
<b>Component 3</b>	<b>1.48</b>	<b>9.9</b>	<b>41.6</b>
<b>Component 4</b>	<b>1.24</b>	<b>8.3</b>	<b>49.9</b>
<b>Component 5</b>	<b>1.10</b>	<b>7.3</b>	<b>57.2</b>
<b>Component 6</b>	<b>1.04</b>	<b>7.0</b>	<b>64.2</b>
Component 7	0.91	6.1	70.3
Component 8	0.86	5.7	76.0
Component 9	0.75	5.0	81.0
Component 10	0.72	4.8	85.8
Component 11	0.61	4.1	89.9
Component 12	0.53	3.5	93.4
Component 13	0.51	3.4	96.8
Component 14	0.38	2.5	99.3
Component 15	0.12	0.7	100

Table 8.5 shows each variable's contribution to the largest three principal components. For Component 1, the three largest contributors are how much of a co-op's business is accounted for by its ten largest members, the percent of members who voted in the last director election, and the percent of members who attended the last AGM. All three variables are considered part of the control costs group.

For Component 2, the three largest contributors are the percent of female directors on a board, the percent of new directors, and the percent of long-serving directors. All three variables are considered part of the corporate governance group, and all three variables are related to board structure.

**Table 8.5** Contribution by the variables to Components 1 to 3

	Comp. 1	Comp. 2	Comp. 3
Capital Commitment	3	0.42	5
% of Business from Largest Member	9	3	13
% of Business from Largest 10 Members	<b>15</b>	7	6
Number of Members	0.01	0	<b>18</b>
Years in Business	3	13	1
% of Members with Voting Rights	0.32	1	1
% of Members who voted in the last election	<b>26</b>	0.01	1
% of members who attended the last AGM	<b>26</b>	0.07	0.05
Average number of directors	2	1	<b>26</b>
Average % of female directors	0.13	<b>28</b>	3
Average % of non-member directors	0.14	2	6
Average % of new directors	1	<b>30</b>	1
Average % of long-service directors	3	<b>15</b>	0
Average # of board meetings per year	11	0	2
Average % of CEO compensation that is performance based	0.28	1	<b>18</b>
Total (100%)	100	100	100

Component 3 appears to be a mix of control cost and corporate governance variables, although two of the most important variables are board size and the percent of CEO compensation that is performance based, both of which are included in the governance group.

Table 8.6 shows the correlations between the principal components and the variables. For Component 1, the principal component positively correlates with its three most influential variables. As more members attend the AGM or vote in a director election, or as a co-op's largest ten members contribute more business, Component 1 increases. All three variables are associated with members who influence management, either by participating in corporate governance or by having economic interactions with their co-operative. Based

on the theory described in Chapter 5, the intuition is that as Component 1 increases, control costs decrease.

**Table 8.6** Correlations between the variables and Components 1 to 3

	Comp. 1	Comp. 2	Comp. 3
Capital Commitment	0.28	0.09	0.26
% of Business from Largest Member	0.53	-0.24	-0.43
% of Business from Largest 10 Members	<b>0.68</b>	-0.35	-0.29
Number of Members	-0.02	0.08	<b>0.52</b>
Years in Business	-0.31	-0.47	0.11
% of Members with Voting Rights	0.10	0.10	-0.10
% of Members who voted in the last election	<b>0.89</b>	-0.01	0.11
% of members who attended the last AGM	<b>0.88</b>	-0.03	0.03
Average number of directors	0.27	0.10	<b>0.62</b>
Average % of female directors	-0.06	<b>0.69</b>	-0.21
Average % of non-member directors	-0.07	0.17	0.31
Average % of new directors	0.15	<b>0.72</b>	-0.12
Average % of long-service directors	-0.28	<b>-0.51</b>	0.04
Average # of board meetings per year	-0.59	-0.02	-0.17
Average % of CEO compensation that is performance based	0.09	-0.14	<b>0.52</b>

Component 2 is positively correlated with the percent of female directors on the board and the percent of new directors on the board. The connection between female directors and new directors makes sense. The push to diversify corporate boards is relatively new, so as more women assume board positions, they are both female directors and new directors. The negative correlation with long-serving directors also makes sense. As seats are taken by newly elected directors, long-serving directors leave the board.

Component 3 is positively correlated with board size, membership size, and the average percent of CEO compensation that is performance based. As any of these variables increases, Component 3 increases.

Similar to the principal components already discussed, Components 4 through 6 map onto either control costs or corporate governance. Table 8.7 shows how the fifteen variables contribute to each component. For Component 4, the largest contributor is the percent of members with voting rights, indicating that the principal component relates to member heterogeneity and to control costs.

**Table 8.7** Contribution by the variables to Components 4 to 6

	Comp. 4	Comp. 5	Comp. 6
Capital Commitment	0.04	<b>27</b>	19
% of Business from Largest Member	4	1	1
% of Business from Largest 10 Members	1	1	0.01
Number of Members	0.05	<b>28</b>	2
Years in Business	2	5	7
% of Members with Voting Rights	<b>45</b>	8	1
% of Members who voted in the last election	0.06	0.2	0.002
% of members who attended the last AGM	0.27	1	0.004
Average number of directors	4	8	0.08
Average % of female directors	4	0.4	6
Average % of non-member directors	10	2	<b>41</b>
Average % of new directors	0.01	3	9
Average % of long-service directors	17	2	5
Average # of board meetings per year	7	1	7
Average % of CEO compensation that is performance based	5	13	1
Total (100%)	100	100	100

For Component 5, the two largest contributors are capital commitment and membership size. This suggests that Component 5 also relates to control costs. Finally, for



Component 6, the largest contributor is the average percent of non-member directors, suggesting Component 6 is associated with governance.

Looking at the direction of relationships, Table 8.8 shows the correlations between Components 4, 5 and 6 and the fifteen continuous variables. There is a strong positive correlation between Component 4 and the percent of members with voting rights. As a co-op's membership becomes more homogenous, Component 4 increases and control costs fall (see Chapter 6 for a discussion on the percent of members with voting rights and member heterogeneity).

**Table 8.8** Correlations between the variables and Components 4 to 6

	Comp. 4	Comp. 5	Comp. 6
Capital Commitment	0.02	<b>-0.54</b>	0.45
% of Business from Largest Member	-0.23	0.08	-0.10
% of Business from Largest 10 Members	-0.11	0.12	0.01
Number of Members	-0.02	<b>0.56</b>	0.15
Years in Business	0.16	0.23	0.27
% of Members with Voting Rights	<b>0.75</b>	0.30	-0.12
% of Members who voted in the last election	0.03	0.05	0.00
% of members who attended the last AGM	0.06	0.08	0.01
Average number of directors	0.22	-0.29	0.03
Average % of female directors	0.21	0.07	-0.25
Average % of non-member directors	-0.35	-0.13	<b>-0.65</b>
Average % of new directors	-0.01	0.17	0.31
Average % of long-service directors	0.46	-0.16	-0.24
Average # of board meetings per year	-0.30	0.10	0.27
Average % of CEO compensation that is performance based	-0.25	0.38	-0.10

For Component 5, there are two opposing relationships. Capital commitment is negatively correlated with the principal component, while membership size is positively correlated. The two variables are believed to have opposite effects on control costs. As

capital commitment increases control costs decrease. Conversely, as membership size increases control costs increase.

Lastly, Component 6 is negatively correlated with the percent of non-member directors on the board. Non-member directors are associated with a professional board and greater board oversight, suggesting that as Component 6 grows, overseeing management is done more by members and less by directors.

### *8.2.1 Differences between consumer and producer co-ops in terms of the principal components*

Results of the PCA show that Component 1 accounts for one fifth (20%) of the variation in the data. According to theory in Chapter 5, members with greater economic influence are more likely to be involved in corporate governance. Additionally, members who vote in board elections or attend AGMs have a stronger attachment to their co-operative than members who do not participate in corporate governance. Altogether, this means that as Component 1 increases, control costs should decrease.

Given the presumed difference between consumer and producer co-ops in terms of their control costs, consumer co-ops should be lower in Component 1. A Welch's t-test confirms this suspicion; the average Component 1 score for consumer co-ops ( $M = -0.8$ ,  $SD = 1.3$ ) is significantly lower ( $t(285) = -7.4$ ,  $p < 0.001$ ) than that of producer co-ops ( $M = 0.5$ ,  $SD = 1.8$ ). Table 8.9 compares Component 1 across co-op type.

**Table 8.9** Member influence (i.e., Component 1)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	112	-0.81	1.25	-2.36	-1.09	6.65
Producer	177	0.514	1.81	-2.37	-0.07	6.23

$t(285) = -7.4, p < 0.001$

Component 2 accounts for twelve percent of the variation in the data. The biggest contributors to Component 2 are variables related to board structure: the percent of female directors on the board, the percent of new directors on the board, and the percent of long-serving directors. Research highlighted in Chapter 4 suggests that female directors and new directors are both associated with more involved boards.

Given the hypothesis that consumer co-op boards are more involved in corporate governance, it is expected that consumer co-ops would be higher in Component 2. Analysis confirms this ( $t(181) = 4.2, p < 0.001$ ), showing that consumer co-ops ( $M = 0.45, SD = 1.52$ ) have a higher average value of Component 2 than producer co-ops ( $M = -0.27, SD = 1.08$ ).

Table 8.10 breaks down Component 2 by consumer type.

**Table 8.10** Board composition (i.e., Component 2)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	112	0.45	1.52	-2.56	0.167	4.58
Producer	177	-.027	1.08	-3.33	-0.41	3.02

$t(181) = 4.2, p < 0.001$

The differences between consumer and producer co-ops in terms of Components 1 and 2 can be seen in Figure 8.3. The horizontal axis of the PCA plot is Component 1, and the vertical axis is Component 2. The two ovals in the figure represent multivariate normal

distributions for producer co-ops (in red) and consumer co-ops (in blue). The ovals contain co-ops that are two standard deviations away from both the average of Component 1 and the average of Component 2. A co-op that is more than two standard deviations away from either average will fall outside of the oval.

**Figure 8.3** PCA plot of Components 1 and 2

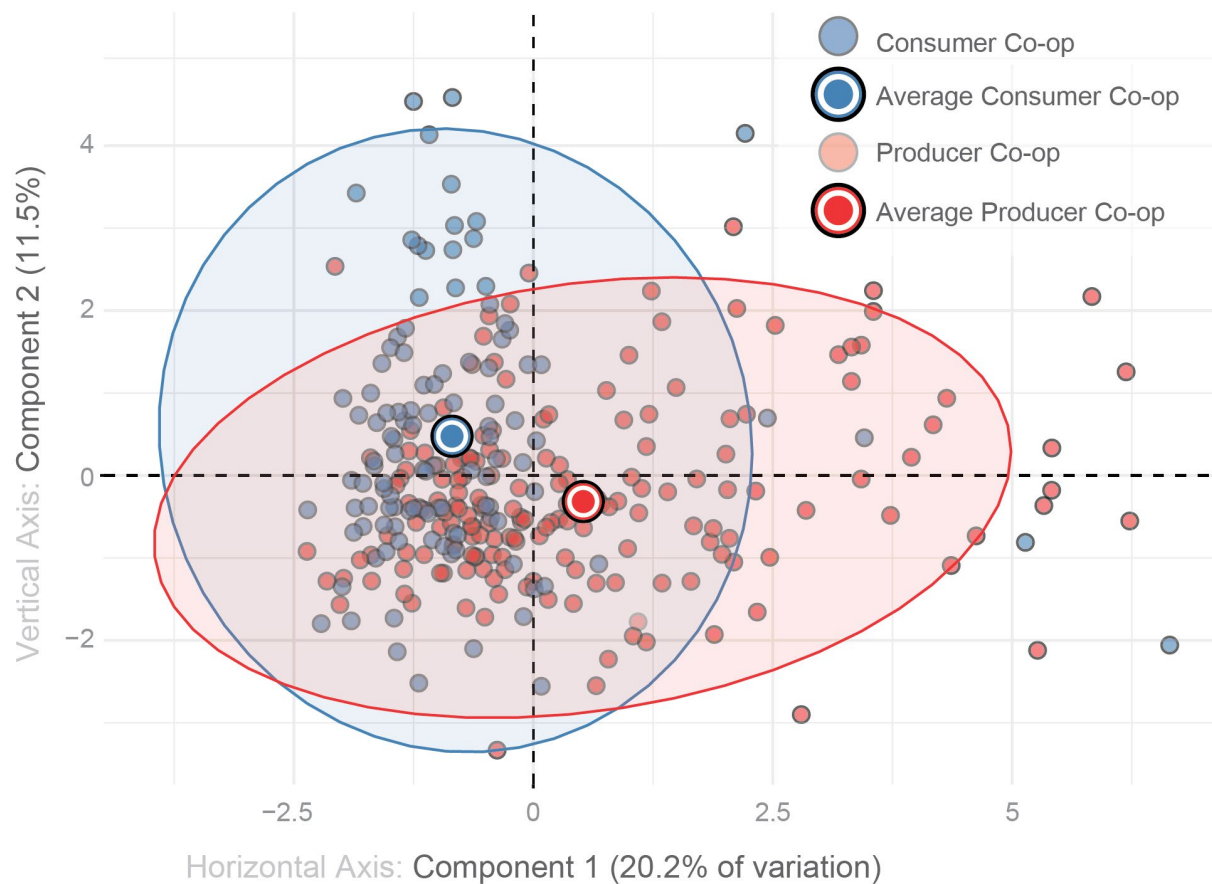


Figure 8.3 shows a clear separation between consumer and producer co-ops regarding Component 1, member influence, and Component 2, board diversity. Producer co-ops cluster along the horizontal axis and have higher values of Component 1, suggesting that producer co-ops have more influential members. This translates into lower control costs.

Consumer co-ops cluster along the vertical axis and have higher values of Component 2, indicating consumer co-ops have more diverse boards.

Moving on to Component 3, no significant difference was found between consumer and producer co-ops ( $t(203) = 0.51, p = 0.6$ ). This suggests that both types of co-operatives have similar board sizes (see Table 8.11 for a breakdown of the component). A significant difference was found for Component 4 ( $t(286) = 5.1, p < 0.001$ ). Given the presumption that consumer co-ops have higher control costs, it was expected that consumer co-ops would be more heterogeneous. Results presented in Table 8.12 show otherwise. Consumer co-ops have a significantly higher average ( $M = 0.37, SD = 0.81$ ) of Component 4 than producer co-ops ( $M = -0.23, SD = 1.21$ ). This indicates that consumer co-ops are less heterogeneous than producer co-ops, running contrary to expectations (member heterogeneity is further examined in Section 8.3).

**Table 8.11** Board size (i.e., Component 3)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	112	0.05	1.36	-10.03	0.25	3.30
Producer	177	-0.03	1.12	-5.91	0.07	3.40

$t(203) = 0.51, p = 0.6$

**Table 8.12** Member homogeneity (i.e., Component 4)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	112	0.37	0.81	-3.58	0.38	2.44
Producer	177	-0.23	1.21	-6.37	-0.06	3.02

$t(286) = 5.1, p < 0.001$

No significant difference was found for Component 5 ( $t(227) = -1.2, p = 0.2$ ), suggesting that consumer and producer co-ops have similar membership sizes (see Table 8.13 for a breakdown of the component). Lastly, a significant difference was found for Component 6 ( $t(281) = 2.9, p = 0.01$ ). Results presented in Table 8.14 indicate that consumer co-op boards are less professionalized than producer co-op boards, with consumer co-ops ( $M = 0.20, SD = 0.81$ ) having higher levels of Component 6 than producer co-ops ( $M = -0.13, SD = 1.12$ ), on average. This runs contrary to expectations; consumer co-op boards were expected to be more professional, because more the prevailing sentiment is that professionalized boards monitor management more than non-professionalized boards.

**Table 8.13** Membership size (i.e., Component 5)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	112	-0.10	1.08	-8.73	0.003	1.44
Producer	177	0.06	1.03	-1.84	-0.02	9.34

$t(227) = -1.2, p = 0.2$

**Table 8.14** Board professionalization (i.e., Component 6)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	112	0.20	0.81	-2.09	0.17	2.04
Producer	177	-0.13	1.12	-7.54	-0.17	7.18

$t(281) = 2.9, p = 0.01$

### 8.2.1 Summary of Results

Principal Component Analysis was used to reduce the dimensionality of the dataset, from fifteen continuous variables to six principal components. Based on which variables contributed most to a principal component, each component captures a particular concept

relating to either control costs or corporate governance. Table 8.15 lists the concept capture by each component, the group the component belongs to, and the variable that contributed most to each component.

**Table 8.15** Principal components, their associated variables, and groups

	Concept	Variable Group	Main Contributing Variable
Component 1	Influential members	Control costs	% of members who voted or attended the last AGM
Component 2	Board diversity	Governance	% of female directors
Component 3	Board size	Governance	Number of board members
Component 4	Member homogeneity	Control costs	% of members with voting rights
Component 5	Membership size	Control costs	Number of members
Component 6	Board professionalism	Governance	% of non-member directors

The strongest contributors to Components 1, 4 and 5 are variables associated with control costs. The strongest contributors to Components 2, 3 and 6 are variables associated with corporate governance. There is little overlap in terms of the variables that contribute to each component (refer to Tables 8.5 to 8.8 for details on the principal components and their contributing variables). This suggests that the data captures two distinct and separate concepts — control costs, and governance structures and behaviours.

Significant differences between consumer and producer co-ops were found for Components 1, 2, 4 and 6. Component 1 accounted for the largest amount of variation in the data, and so is considered most important. On average, producer co-ops had higher values of Component 1, indicating they had more influential members and therefore lower control costs than consumer co-ops.<sup>34</sup>

<sup>34</sup> Although credit unions have been categorized as consumer co-ops for this thesis, they bear some resemblance to producer co-ops. The strength of the relationship between credit unions and their members is

The other control cost principal component with significant results is Component 4. Component 4 is associated with member homogeneity — higher levels of the principal component suggest lower control costs. Contrary to expectations, consumer co-ops had higher levels of Component 4, implying lower control costs than producer co-ops.

Component 4 accounts for less variation in the data than Component 1, however. Given the strength of Component 1, producer co-ops are considered to have lower control costs overall. Thus, results of the analyses provide support for the underlying presumption of the main hypothesis. As stated, the main hypothesis of this thesis is:

*Because consumer co-ops have higher control costs than producer co-ops, the boards of consumer co-ops should be more involved in overseeing management than the boards of producer co-ops.*

The significant result for Component 2 supports the hypothesis that consumer co-op boards are more involved in overseeing management. If female directors are brought onto the board to improve board performance, then higher levels of Component 2 for consumer co-ops could indicate increased levels of oversight by the board.

Higher levels of Component 6 implies that consumer co-op boards are less professionalized, and therefore less involved in overseeing management than the boards of producer co-ops. This does not support the main hypothesis. However, like Component 4, Component 6 only accounts for a small amount of variation in the data (seven percent of the variation) — smaller than the amount accounted for by Component 2.

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similar to that of producer co-ops and their members. Moreover, credit unions are heavily regulated from both a governance and a financial perspective. This further sets them apart from other consumer co-ops, and from producer co-ops as well. Given their uniqueness, the results of the PCA reported above may be, at least partially driven, by including credit unions in the analysis. A second PCA was run that omitted credit unions. Similar results to the original PCA were obtained, suggesting that the uniqueness of credit unions has limited influence. See Appendix A for the results.



To bolster the results of the PCA, analyses of the unmodified variables (i.e., variables not reduced to principal components) are done over the next several sections. This is done for two reasons. First, the unmodified variables provide a more intuitive way of understanding what is being looked at. Stating that consumer co-ops use a higher percentage of pay-for-performance compensation is easier to understand than consumer co-ops are higher in Component 3.

Moreover, the unmodified variables lend themselves to a series of sub-hypotheses. Presented in Section 8.4, these hypotheses relate to the co-ops' governance structures and behaviours. They build on the general hypothesis and are based on the research presented in Chapter 4.

Second, significant differences between consumer and producer co-ops may be lost when individual variables are combined in principal components. Results presented in Section 8.5 show that consumer co-ops have more board meetings than producer co-ops. This difference is lost in the PCA.

### **8.3 Differences between consumer and producer co-ops in terms of the factors that influence control costs**

As discussed in Chapter 5, the cost of controlling the firm is the combination of three sub-costs or components: monitoring costs, the cost of managerial opportunism and the cost of collective decision-making. Each of these components can be broken down into different factors. These factors and their relationship with the cost of controlling the firm are presented in Table 8.16. Table 8.17 lists the variables from the CBS used to measure each factor.

**Table 8.16** Factors influencing the components of control costs

Factor Influencing Control Costs	Affect on Control Costs
<i>Economic connection</i>	<p>As members' economic connection increases:</p> <ul style="list-style-type: none"> <li>• Monitoring costs decrease;</li> <li>• The cost of managerial opportunism increases; and</li> <li>• The cost of collective decision-making decreases.</li> </ul>
<i>Large members</i>	<p>As the amount of business done by a co-op's largest member(s) increases, monitoring costs decrease.</p>
<i>Firm age</i>	<p>As firm age increases:</p> <ul style="list-style-type: none"> <li>• Monitoring costs increase; and</li> <li>• The cost of collective decision-making increases.</li> </ul>
<i>Firm size</i>	<p>As the number of members increases:</p> <ul style="list-style-type: none"> <li>• Monitoring costs increase; and</li> <li>• The cost of collective decision-making increases.</li> </ul>
<i>Geographic region</i>	<p>As a co-op occupies a larger geographic region:</p> <ul style="list-style-type: none"> <li>• Monitoring costs increase; and</li> <li>• The cost of collective decision-making increases.</li> </ul>
<i>Firm sector</i>	<p>For co-ops that occupy sectors with increased competition or regulation, or that use a specialized workforce or sophisticated production techniques:</p> <ul style="list-style-type: none"> <li>• Monitoring costs increase; and</li> <li>• The cost of collective decision-making increases.</li> </ul>
<i>Member heterogeneity</i>	<p>As member heterogeneity increases and members' interests diverge, the cost of collective decision-making increases.</p>
<i>Members' participation in governance</i>	<p>As members' participation in governance increases, the cost of collective decision-making decreases.</p>

**Table 8.17** Factors influencing control costs and the associated CBS variables

Factor Influencing Control Costs	Variable from the CBS
<i>Economic connection</i>	<ul style="list-style-type: none"> <li>• Member capital commitment</li> </ul>
<i>Large members</i>	<ul style="list-style-type: none"> <li>• Business from a co-op's largest member</li> <li>• Business from a co-op's largest 10 members</li> </ul>
<i>Firm age</i>	<ul style="list-style-type: none"> <li>• Years in business</li> </ul>
<i>Firm size</i>	<ul style="list-style-type: none"> <li>• Number of members</li> </ul>
<i>Geographic region</i>	<ul style="list-style-type: none"> <li>• Geographic region</li> </ul>
<i>Firm sector</i>	<ul style="list-style-type: none"> <li>• Firm sector</li> </ul>
<i>Member heterogeneity</i>	<ul style="list-style-type: none"> <li>• Member heterogeneity</li> <li>• The percentage of members with voting rights</li> </ul>
<i>Members' participation in governance</i>	<ul style="list-style-type: none"> <li>• The percentage of members who voted in a co-op's last election</li> <li>• The percentage of members who attended a co-op's last AGM</li> </ul>

Of the eleven variables associated with control costs, significant differences between consumer and producer co-ops were found for six of them. All the variables, their values and significance levels are shown in Table 8.18.

The actual results for each variable are presented in Section 8.3.1.

**Table 8.18** Differences in the factors that influence control costs

Variable	Values for Each Co-op Type		p-value <sup>+</sup>	Sig. Level
	Consumer Co-ops	Producer Co-ops		
Average member capital commitment (in USD)	169	2,589	0.11	-
Average % of a co-op's business accounted for by its largest member	7	10	0.06	-
Average % of a co-op's business accounted for by its ten largest members	12	32	<0.001	***
Average number of years in business	55	56	0.80	-
Average number of members	29,827	2,202	0.053	-
Geographic region	Local, State	Regional, National/Intl.	<0.001	***
Firm sector	Financial, Grocery	Agriculture	<0.001	***
Member heterogeneity	Medium	Low/High	0.06	-
Average % of members with voting rights	97	89	<0.001	***
Average % of members who voted in the last election	17	37	<0.001	***
Average % of members who attended the last AGM	13	35	<0.001	***

\*NOTE: The p-values reported have been adjusted using the Benjamini and Hochberg method

Significance Level: \*\*\* < 0.001 \*\* < 0.01 \* < 0.05

Compared to consumer co-ops, more of producer co-ops' business comes from their ten largest members. Producer co-ops inhabit larger geographic regions. Most producer co-ops are in the agriculture sector, while consumer co-ops are primarily in the financial or grocery sectors. Producer co-ops also have a higher degree of member heterogeneity, but a larger portion of their members participate in governance.

Based on the associations between the significant variables listed in Table 8.5 and the control cost components described in Chapter 5, producer co-ops should have lower

monitoring costs and a higher cost of managerial opportunism. It is unclear whether producer or consumer co-ops have a higher cost of collective decision-making. Although producer co-ops are more heterogeneous (they have a lower percent of members with voting rights, on average), they have higher levels of member commitment.

Regardless, even if the cost of collective decision-making is lower for consumer co-ops, results suggest that consumer co-ops' overall control costs are higher than those of producer co-ops.

### 8.3.1 Detailed analysis for the variables associated with control costs

This section presents detailed analyses for the control cost variables. Starting with member capital commitment, there is no significant difference ( $t(264) = -1.7, p = 0.11$ ) between consumer ( $M = \$169, SD = 465$ ) and producer co-ops ( $M = \$2,589, SD = 23,219$ ). Usually, joining either type of co-op entailed little to no membership fee (see Table 8.19 for a breakdown of member capital commitment). Most consumer co-ops (67%) and most producer co-ops (70%) had a capital commitment of less than 25 dollars.

**Table 8.19** Member capital commitment

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	204	169	465	0	5	5,000
Producer	267	2,589	23,219	0	0	350,000

$t(264) = -1.7, p = 0.11$

There is no significant difference ( $t(333) = -2, p = 0.06$ ) between consumer ( $M = 7\%, SD = 14$ ) and producer co-ops ( $M = 10\%, SD = 14$ ) in the amount of business accounted for by a

co-op's largest member. But, there is a significant difference between ( $t(393) = -8.8, p < 0.001$ ) between consumer ( $M = 12\%, SD = 17$ ) and producer co-ops ( $M = 32\%, SD = 28$ ) in the average amount of business accounted for by a co-op's ten largest members. For producer co-ops, the largest ten members account for just under one third of business, which is almost three times more than it is for consumer co-ops. Tables 8.20 and 8.21 break down the amount of business contributed by a co-op's largest member and by its largest ten members, respectively.

**Table 8.20** Percent of business by largest member

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	159	7	14	0	2	98
Producer	242	10	14	0	5	80

$t(333) = -2, p = 0.06$

**Table 8.21** Percent of business by largest 10 members

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	161	12	17	0	7	100
Producer	237	32	28	0	23	100

$t(393) = -8.8, p < 0.001$

There is no significant difference ( $t(470) = -0.28, p = 0.80$ ) for years in business between consumer co-ops ( $M = 55, SD = 29$ ) and producer co-ops ( $M = 55, SD = 32.05$ ). On average, co-ops of either type have been around for half a century. The difference between consumer and producer co-ops in terms of average membership size is also not statistically significant ( $t(209) = 2.1, p = 0.053$ ). Table 8.22 provides a breakdown of years in business. Table 8.23 provides a breakdown of membership size.

**Table 8.22** Years in business

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	211	55	29	1	55	145
Producer	274	56	32	1	62	112

$t(209) = 2.1, p = 0.80$

**Table 8.23** Number of members

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	210	29,827	188,435	3	3,710	2,500,000
Producer	274	2,202	5,168	3	500	45,000

$t(209) = 2.1, p = 0.053$

There is a significant and strong association between co-operative type and geographic region ( $\chi^2(3, N = 483) = 25.5, p < 0.001, V = 0.23$ ). Over 90 percent (92%) of consumer co-operatives operated on a local or state level. Most producer co-ops (75%) also operate locally or statewide. However, compared to consumer co-ops (six percent operate regionally and five percent operate nationally or internationally) a higher proportion of producer co-ops are either regional (14%) or national/international (12%). Table 8.24 shows the distribution of geographic region by co-op type.

**Table 8.24** Distribution of geographic region

	Local	State	Regional	National/ International
Consumer	96	98	12	5
(% of Con. Co-ops)	46%	47%	6%	5%
Producer	97	106	37	32
(% of Prod. Co-ops)	36%	39%	14%	12%

$$\chi^2(3, N = 483) = 25.5, p < 0.001, V = 0.23$$

There is a significant and very strong relationship between co-operative type and sector ( $\chi^2(5, N = 485) = 397.9, p < 0.001, V = 0.91$ ). Most producer co-ops are in the agriculture sector ( $N = 221, 81\%$ ). Conversely, most consumer co-ops are either in the financial sector ( $N = 85, 40\%$ ) or the grocery sector ( $N = 53, 25\%$ ). Table 8.25 shows the distribution of sector by co-op type.

**Table 8.25** Distribution of co-op sector

	Agriculture	Financial	Grocery	Service	Other	Utilities
Consumer	0	85	53	13	0	60
(% of Con. Co-ops)	0%	40%	25%	6%	0%	28%
Producer	221	3	9	28	11	2
(% of Prod. Co-ops)	81%	1%	3%	10%	4%	1%

$$\chi^2(5, N = 485) = 397.9, p < 0.001, V = 0.91$$

Looking at how much members' interests diverge, there is no significant relationship between co-op type and membership heterogeneity ( $\chi^2(2, N = 459) = 6.5, p = 0.06$ ). However, there is a significant difference between consumer and producer co-ops in the percent of members with voting rights ( $t(421) = 4.5, p < 0.001$ ). The average percent of members with voting rights for consumer co-ops is 97 percent ( $SD = 13$ ). For producer co-



ops, the average is 89 percent ( $SD = 26$ ). Table 8.26 shows the distribution of member heterogeneity. Table 8.27 shows the breakdown of percent of members with voting rights.

**Table 8.26** Level of member heterogeneity

	Low	Medium	High
Consumer	124	63	15
(% of Con. Co-ops)	61%	31%	7%
Producer	166	58	33
(% of Prod. Co-ops)	66%	22%	12%

$$\chi^2(6.5, N = 459) = 6.5, p = 0.06, V = 0.12$$

**Table 8.27** Percent of members with voting rights

	N	Mean	Standard Deviation	Minimum	Maximum
Consumer	210	97	13	5	100
Producer	274	89	26	2	100

$$t(421) = 4.5, p < 0.001$$

In terms of members' participation in governance, there are significant differences between consumer and producer co-ops regarding the percent of members who voted in their co-op's last election ( $t(419) = -8.4, p < 0.001$ ), and in the percent of members who attended the last AGM ( $t(426) = -8.5, p < 0.001$ ). On average, a higher percent of members in producer co-ops ( $M = 39\%$ ,  $SD = 30$ ) voted compared to members in consumer co-ops ( $M = 17\%$ ,  $SD = 22$ ). And a higher percent of members in producer co-ops attended the AGM ( $M = 35\%$ ,  $SD = 31$ ) compared to members in consumer co-ops ( $M = 13\%$ ,  $SD = 22$ ). Tables 8.28 and 8.29 show voting rates and AGM attendance for each co-operative type, respectively.

**Table 8.28** Percent of members who voted in the last election

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	181	17	22	0	10	100
Producer	240	39	30	0	500 30	100

$t(419) = -8.4, p < 0.001$

**Table 8.29** Percent of members who attended the last AGM

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	178	13	22	0	5	100
Producer	250	35	31	0	20.5	100

$t(426) = -8.5, p < 0.001$

### 8.3.2 Summary of results

In general, differences were found between consumer and producer co-ops in terms of the factors that influence control costs. The results primarily indicate that consumer co-ops have higher monitoring costs and a lower cost of managerial opportunism. This suggests that consumer co-ops have higher control costs overall, which aligns with the conclusion drawn from the PCA and the differences between producer and consumer co-ops in terms of Component 1.

Looking at Component 2, the PCA also suggested that consumer and producer co-ops differ in terms of their corporate governance, with consumer co-op boards being more involved in overseeing management. Differences in corporate governance are further examined in the next two sections. First, a series of sub-hypotheses are laid out in Section 8.4. These hypotheses build on the general hypothesis and describe the expected relationships between co-op type and the corporate governance variables described in Chapter 6. Results are presented in Section 8.5.

#### **8.4 The sub-hypotheses tested in this chapter**

The main hypothesis of this thesis presumes that consumer co-ops have higher control costs than producer co-ops. Based on this presumption, which is supported by the results presented in Sections 8.2 and 8.3, the prediction is that consumer co-op board should be more involved in oversight than producer co-op boards. From this prediction, a series of sub-hypotheses have been developed regarding the individual governance structures and behaviours examined in this thesis.

These sub-hypotheses predict that if consumer co-op boards are more involved in overseeing management than producer co-op boards, then:

- H1. Consumer co-op boards should be larger.*
- H2. Consumer co-op boards should have a higher percentage of female directors.*
- H3. Consumer co-op boards should have a higher percentage of non-member directors.*
- H4. Consumer co-op boards should have a higher percentage of new directors.*
- H5. Consumer co-op boards should have a lower percentage of long-serving directors.*
- H6. Consumer co-op boards should have more frequent board meetings.*
- H7. Consumer co-op boards should be more prepared for board meetings.*
- H8. For consumer co-ops, board meeting agendas should be set by the board chair.*
- H9. Consumer co-op boards should be more likely to use external advisors.*
- H10. Consumer co-op CEOs should be less involved in director selection*
- H11. Consumer co-op boards should be more involved in director selection.*
- H12. Consumer co-op boards should be more involved in selecting senior management (aside from the CEO).*

*H13. Consumer co-op boards should communicate more frequently with senior management (other than the CEO) outside of board meetings.*

*H14. Consumer co-op boards should exercise greater control over discretionary spending.*

*H15. Consumer co-op boards should be more involved in budgetary planning.*

*H16. Consumer co-op boards should be more involved in strategic planning.*

*H17. Consumer co-ops should be more likely to use quantifiable measures to assess CEO performance.*

*H18. CEO compensation for consumer co-ops should be based more on pay-for-performance.*

Each hypothesis maps onto a particular variable from the CBS. Table 8.30 lists the variables associated with each hypothesis and their expected relationship with consumer or producer co-ops. These hypotheses are tested in the next section.

**Table 8.30** Specific hypotheses, their associated variables, and theorized relationships

Hypotheses and Associated Variables	Predicted Results for:	
	Consumer Co-ops	Producer Co-ops
<i>H1. Consumer co-op boards should be larger.</i>		
Number of directors on the board	Higher	Lower
<i>H2. Consumer co-op boards should have a higher percentage of female directors.</i>		
% of directors who are female	Higher	Lower
<i>H3. Consumer co-op boards should have a higher percentage of non-member directors.</i>		
% of directors who are not members of the co-op	Higher	Lower
<i>H4. Consumer co-op boards should have a higher percentage of new directors.</i>		
% of directors who are new	Higher	Lower
<i>H5. Consumer co-op boards should have a lower percentage of long-serving directors.</i>		
% of directors who are long serving	Lower	Higher
<i>H6. Consumer co-op boards should have more frequent board meetings.</i>		
Number of board meetings per year	More	Less
<i>H7. Consumer co-op boards should be more prepared for board meetings.</i>		
Level of director preparation for board meetings	High	Low/Medium
<i>H8. For consumer co-ops, board meeting agendas should be set by the board chair.</i>		
Who sets the agendas for board meetings	Board Chair	CEO
<i>H9. Consumer co-op boards should be more likely to use external advisors.</i>		
Does the board use external advisors	Yes	No
<i>H10. Consumer co-op CEOs should be less involved in director selection.</i>		
Level of CEO involvement in director selection	Low/Medium	High
<i>H11. Consumer co-op boards are more involved in director selection.</i>		
Level of board involvement in director selection	High	Low/Medium
<i>H12. Consumer co-op boards should be more involved in selecting senior management (aside from the CEO).</i>		
Level of board involvement in selecting senior management	High	Low/Medium
<i>H13. Consumer co-op boards should communicate more frequently with senior management (other than the CEO) outside of board meetings.</i>		
Level of board communication with management not the CEO	High	Low/Medium
<i>H14. Consumer co-op boards should exercise greater control over discretionary spending.</i>		
Level of board control over discretionary spending	High	Low/Medium
<i>H15. Consumer co-op boards should be more involved in budgetary planning.</i>		
Level of board involvement in budgeting	High	Low/Medium
<i>H16. Consumer co-op boards should be more involved in strategic planning</i>		
Level of board involvement in strategic planning	High	Low/Medium
<i>H17. Consumer co-op boards should be more likely to use quantifiable measures to assess CEO performance.</i>		
Are quantifiable measures are used to assess CEO performance	Yes	No
<i>H18. CEO compensation for consumer co-ops should be based more on pay-for-performance.</i>		
% of CEO compensation that is performance based	More	Less

### **8.5 Corporate governance differences between consumer and producer co-ops**

Summarizing the results presented in this section, significant differences were found between consumer and producer co-ops regarding some of their corporate governance structures and behaviours. Analyses suggest that, compared to the boards of producer co-ops, consumer co-op boards:

- Are more diverse;
- Are more professionalized;
- Meet more frequently;
- Are better prepared;
- Rely on both the CEO and the board chair to set board meeting agendas;
- Are more likely to engage external advisors;
- Exert greater control over management's discretionary spending;
- Are more involved in budgetary planning; and
- Are more likely to use quantifiable measures to assess CEO performance.

Also compared to producer co-ops, consumer co-op CEOs are less involved in director selection. Table 8.31 lists the variables examined in this section, their values, and their significance levels.

**Table 8.31** Differences in governance structures and behaviours

Variable	Values for Each Co-op Type		p-value <sup>+</sup>	Sig. Level
	Consumer Co-ops	Producer Co-ops		
Average number of directors	9	9	0.95	-
Average % of female directors	28	7	<0.001	***
Average % of non-member directors	3	1	0.01	**
Average % of new directors	26	22	0.06	-
Average % of long-service directors	18	13	0.02	*
Average # of board meetings per year	12	10	<0.001	***
Director preparation for board meetings	High	Low/Medium	0.01	*
Who sets the agenda for board meetings	CEO or Board Chair	CEO	<0.001	***
Does the board use external advisors	Yes	No	0.02	*
Level of CEO involvement in director selection	Low	Medium/High	0.02	*
Level of board involvement in director selection	Low/Medium	High	0.76	-
Level of board involvement in selecting senior management (aside from the CEO)	Low	Medium/High	0.22	-
Level of board communication with management (aside from the CEO) outside of board meetings	Low	Medium/High	0.02	*
Level of control over discretionary spending	Low/High	Medium	0.06	-
Level of board involvement in budgeting	High	Low/Medium	0.04	*
Level of board involvement in strategic planning	Low/High	Medium	0.11	-
Are quantifiable measures used to assess CEO performance	Yes	No	0.003	**
Average % of CEO compensation that is performance based	12	19	0.008	**

\*NOTE: The p-values reported have been adjusted using the Benjamini and Hochberg method

\*\*\* < 0.001 \*\* < 0.01 \* < 0.05

Given the significant differences shown in Table 8.22, determinations can be made about the sub-hypotheses laid out in Section 8.2. These hypotheses, and whether they are supported, are presented in Table 8.32.

**Table 8.32** Specific hypotheses by co-op type

Hypotheses	Supported or Not Supported
<i>H1. Consumer co-op boards should be larger.</i>	Not Supported
<i>H2. Consumer co-op boards have a higher percentage of female directors.</i>	Supported
<i>H3. Consumer co-op boards have a higher percentage of non-member directors.</i>	Supported
<i>H4. Consumer co-op boards have a higher percentage of new directors.</i>	Not Supported
<i>H5. Consumer co-op boards have a lower percentage of long-serving directors.</i>	Not Supported
<i>H6. Consumer co-op boards should have more frequent board meetings.</i>	Supported
<i>H7. Consumer co-op boards should be better prepared for board meetings.</i>	Supported
<i>H8. For consumer co-ops, board meeting agendas should be set by the board chair.</i>	Supported
<i>H9. Consumer boards should be more likely to use external advisors.</i>	Supported
<i>H10. Consumer co-op CEOs should be less involved in director selection.</i>	Supported
<i>H11. Consumer co-op boards should be more involved in director selection.</i>	Not Supported
<i>H12. Consumer co-op boards should be more involved in selecting senior management (aside from the CEO).</i>	Not Supported
<i>H13. Consumer co-op boards should communicate more frequently with senior management (other than the CEO) outside of board meetings.</i>	Not Supported
<i>H14. Consumer co-op boards should exercise greater control over discretionary spending.</i>	Not Supported
<i>H15. Consumer co-op boards should be more engaged in budgetary planning.</i>	Supported
<i>H16. Consumer co-op boards should be more engaged in strategic planning.</i>	Not Supported
<i>H17. Consumer co-op boards should be more likely to use quantifiable measures to assess CEO performance.</i>	Supported
<i>H18. CEO compensation for consumer co-ops should be based more on pay-for-performance.</i>	Not Supported



### 8.5.1 Results for the variables associated with governance structures and behaviours

Starting with the number of directors on the board, there is no significant difference ( $t(473) = 0.07, p = 0.95$ ) between consumer ( $M = 9$  directors,  $SD = 3$ ) and producer co-ops ( $M = 9, SD = 5$ ) in average board size (see Table 8.33 for a breakdown of the differences between consumer and producer co-ops). For either co-op type, the average board size is nine directors.

**Table 8.33** Number of directors

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	209	9	3	3	9	23
Producer	273	9	5	3	7	42

$t(473) = 0.07, p = 0.95$

In terms of board composition, statistically significant differences were found for the percent of female directors ( $t(311) = 9.4, p < 0.001$ ), non-member directors ( $t(463) = 2.8, p = 0.01$ ) and long-serving directors ( $t(397) = 2.5, p = 0.02$ ) on the board. On average, consumer co-ops have a higher proportion of female directors (consumer co-ops,  $M = 28\%$ ,  $SD = 28$ ; producer co-ops,  $M = 7\%$ ,  $SD = 16$ ) and non-member directors (consumer co-ops,  $M = 3\%$ ,  $SD = 7$ ; producer co-ops,  $M = 1$ ,  $SD = 8$ ).

Consumer co-ops were also found to have a higher percent of long-serving directors (consumer co-ops,  $M = 18\%$ ,  $SD = 22$ ; producer co-ops,  $M = 13\%$ ,  $SD = 18$ ). This runs opposite to the expected result. Research on long-serving directors is equivocal, however. The hypothesis that consumer co-ops should have a lower percent of long-serving directors is

based on the argument that directors with more than twenty years of board service adversely impact board performance.

There is an opposing argument that long-serving directors improve board performance, however, because they have extensive firm-specific knowledge and strong organizational memory (see Chapter 4 for an overview of director tenure). From this perspective, consumer co-ops should have a higher percentage of long-serving directors, because consumer co-ops place greater demands on their boards.

No significant difference was found between co-op type and the percent of new directors ( $t(410) = 2, p = 0.06$ ). Tables 8.34, 8.35, 8.36 and 8.37 provide the breakdowns for female directors, non-member directors, new directors, and long-serving directors, respectively.

**Table 8.34** Percent of female directors

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	209	28	28	0	19	100
Producer	271	7	16	0	0	90

$t(311) = 9.4, p < 0.001$

**Table 8.35** Percent of non-member directors

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	207	3	7	0	0	33
Producer	271	1	8	0	0	100

$t(463) = 2.8, p = 0.01$

**Table 8.36** Percent of new directors

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	203	26	26	0	20	100
Producer	271	22	24	0	14	100

$t(410) = 2, p = 0.06$

**Table 8.37** Percent of long-serving directors

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	206	18	22	0	11	86
Producer	268	13	18	0	0	100

$t(397) = 2.5, p = 0.02$

Looking at the frequency of board meetings, as well as directors' level of preparation, significant differences between consumer and producer co-ops were found in the number of board meetings per year ( $t(434) = 4.4, p < 0.001$ ), and in how prepared directors are for board meetings ( $\chi^2(2, N = 461) = 11, p = 0.01, V = 0.16$ ). Consumer co-ops averaged twelve board meetings per year ( $SD = 4$ ), whereas producer co-ops averaged ten ( $SD = 4$ ). In terms of meeting preparedness, more than half (55%) of consumer co-op had boards with directors who exhibited high levels of preparation for board meetings. Only 44 percent of producer co-op boards showed the same level of preparedness.

Table 8.38 shows the breakdown for the number of board meetings per year. Table 8.39 shows the distribution of board meeting preparedness.

**Table 8.38** Number of board meetings per year

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	209	12	4	0	12	48
Producer	273	10	4	1	12	25

$t(434) = 4.4, p < 0.001$

**Table 8.39** Level of director preparation for board meetings

	Low	Medium	High
Consumer	29	63	113
(% of Con. Co-ops)	14%	31%	55%
Producer	64	85	107
(% of Prod. Co-ops)	25%	33%	42%

$\chi^2(2, N = 461) = 11.1, p = 0.01, V = 0.12$

A significant and strong association was found between co-op type and who sets the agenda for board meetings ( $\chi^2(4, N = 480) = 52.2, p < 0.001, V = 0.33$ ). For half of producer co-ops, agendas were set by the CEO alone. For another quarter of producer co-ops, the CEO still set the agenda, but also required board chair approval.

Similar results are found for consumer co-ops in that most of the time the CEO sets the agenda, either alone (23%) or with board chair approval (25%). Still, for one fifth of consumer co-ops (21%), the board chair sets agendas alone. For producer co-ops, that proportion drops to less than one tenth (7%). Table 8.40 shows the distribution of who sets the agenda for board meetings.

**Table 8.40** Who Sets the agenda for board meetings

	CEO only	CEO w/ Chair	Chair only	Chair w/ CEO	Other
Consumer	48	51	44	14	51
(% of Con. Co-ops)	23%	25%	21%	7%	25%
Producer	137	69	18	3	41
(% of Prod. Co-ops)	50%	25%	7%	3%	15%

$$\chi^2(4, N = 480) = 52.2, p < 0.001, V = 0.33$$

A significant and moderate association was found between co-op type and whether a board uses external advisors ( $\chi^2(1, N = 477) = 6.74, p = 0.02, V = 0.12$ ). Compared to consumer co-ops, producer co-ops less were likely to engage external advisors. Still, most producer co-ops (67%) did so (see Table 8.41 for the distribution).

**Table 8.41** Use of external advisors

	Yes	No
Consumer	160	46
(% of Con. Co-ops)	78%	22%
Producer	181	90
(% of Prod. Co-ops)	67%	33%

$$\chi^2(1, N = 477) = 6.74, p = 0.02, V = 0.12$$

Looking at levels of influence exerted in director selection, only CEO involvement was significant ( $\chi^2(2, N = 457) = 8.96, p = 0.02, V = 0.14$ ). There is a moderate association between co-op type and involvement, with producer co-op CEOs showing greater involvement in the selection process. No difference was apparent between consumer and producer co-ops in terms the board's role or influence in director selection ( $\chi^2(2, N = 459)$

= 0.69,  $p = 0.76$ ,  $V = 0.04$ ). Tables 8.42 and 8.43 show the distributions of CEO involvement and board involvement, respectively.

**Table 8.42** Level of CEO involvement in director selection

	Low	Medium	High
Consumer	148	30	23
(% of Con. Co-ops)	74%	15%	11%
Producer	155	52	49
(% of Prod. Co-ops)	61%	20%	19%

$$\chi^2(2, N = 457) = 8.96, p = 0.02, V = 0.14$$

**Table 8.43** Level of board involvement in director selection

	Low	Medium	High
Consumer	93	48	61
(% of Con. Co-ops)	46%	24%	30%
Producer	64	85	107
(% of Prod. Co-ops)	44%	23%	34%

$$\chi^2(2, N = 459) = 0.69, p = 0.76, V = 0.04$$

No significant difference was found between consumer and producer co-ops regarding board involvement in selecting senior management excluding the CEO ( $\chi^2(2, N = 437) = 3.17, p = 0.22, V = 0.09$ ). For both co-op types, board involvement was generally low. Over four fifths of consumer co-ops (81%) and almost three quarter of producer co-ops (74%) reported that their boards had no role in selecting the CEO's senior management team (see Table 8.44 for the distribution).

**Table 8.44** Level of board influence in selecting senior management

	Low	Medium	High
Consumer	156	17	20
(% of Con. Co-ops)	81%	9%	10%
Producer	180	32	32
(% of Prod. Co-ops)	74%	13%	13%

$\chi^2(2, N = 437) = 3.17, p = 0.22, V = 0.09$

A significant and moderate association was found between co-op type and how much the board communicates with senior management (aside from the CEO) outside of board meetings ( $\chi^2(2, N = 421) = 9.10, p = 0.02, V = 0.15$ ). Compared to consumer co-ops, producer co-op boards appear more likely to communicate with senior management. Almost half of producer co-ops (42%) had boards that met with senior management (other than the CEO) outside of board meetings at least one or two times per month. Less than a third of consumer co-ops (29%) reported the same level of communication (see Table 8.45 for the distribution).

**Table 8.45** Level of board communication with senior management

	Low	Medium	High
Consumer	135	28	27
(% of Con. Co-ops)	71%	15%	14%
Producer	133	58	40
(% of Prod. Co-ops)	58%	25%	17%

$\chi^2(2, N = 421) = 9.10, p = 0.02, V = 0.15$

No significant relationship was also found between co-op type and the level of board control over discretionary spending ( $\chi^2(2, N = 455) = 6.23, p = 0.06, V = 0.12$ ). Table 8.46 shows the levels of control by co-op type.

**Table 8.46** Level of board control over discretionary spending

	Low	Medium	High
Consumer	54	46	97
(% of Con. Co-ops)	27%	23%	49%
Producer	60	88	110
(% of Prod. Co-ops)	23%	34%	43%

$\chi^2(2, N = 455) = 6.23, p = 0.06, V = 0.12$

A significant and moderate relationship was found between co-op type and board involvement in budgetary planning ( $\chi^2(2, N = 467) = 7.49, p = 0.04, V = 0.13$ ). Compared to producer co-ops, consumer co-op boards were more likely to be highly involved in budgeting. Almost one third of consumer co-ops (32%) had boards that participated in the budgeting process and actively managed financials. Less than one quarter of producer co-ops (22%) reported similar levels of involvement.

No significant difference was found between consumer and producer co-ops regarding board participation in strategic planning ( $\chi^2(2, N = 470) = 4.82, p = 0.11, V = 0.10$ ). The distributions of board involvement in budgetary planning and strategic planning are shown in Tables 8.47 and 8.48, respectively.



**Table 8.47** Level of board involvement in budgeting

	Low	Medium	High
Consumer	39	99	63
(% of Con. Co-ops)	19%	49%	32%
Producer	73	531	59
(% of Prod. Co-ops)	28%	50%	22%

$\chi^2(2, N = 497) = 7.49, p = 0.04, V = 0.13$

**Table 8.48** Level of board involvement in strategic planning

	Low	Medium	High
Consumer	52	83	72
(% of Con. Co-ops)	25%	40%	35%
Producer	82	113	68
(% of Prod. Co-ops)	31%	43%	26%

$\chi^2(2, N = 470) = 4.82, p = 0.11, V = 0.10$

Finally, for the CEO-contract-related variables, a significant and strong association was found between co-op type and whether the board uses quantifiable measures to assess CEO performance ( $\chi^2(1, N = 471) = 10.77, p = 0.003, V = 0.16$ ). Consumer co-ops were more likely to use the quantifiable measures than producer co-ops. Slightly more than one third of producer co-ops (34%) reported using quantifiable measures compared to fifty percent of consumer co-ops (see Table 8.49 more details).

**Table 8.49** Use of quantifiable measures to assess CEO performance

	Yes	No
Consumer	103	101
(% of Con. Co-ops)	50%	50%
Producer	91	176
(% of Prod. Co-ops)	34%	66%

$\chi^2(1, N = 471) = 10.77, p = 0.003, V = 0.16$

A significant difference was also found in the percent of CEO compensation that is performance based ( $t(428) = -3, p = 0.008$ ), with producer co-ops ( $M = 19\%$ ,  $SD = 25$ ) using a higher percentage than consumer co-ops ( $M = 14\%$ ,  $SD = 22$ ). This runs contrary to the prediction that consumer co-ops would rely more heavily on performance-based compensation than producer co-ops. However, on balance, there is more support for the general hypothesis than for the alternative — that consumer co-op boards are less involved in overseeing management than producer co-op boards.

Table 8.50 shows the breakdown of performance-based compensation.

**Table 8.50** Percent of CEO compensation that is performance-based

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	192	12	22	0	0	100
Producer	243	19	25	0	10	100

$t(428) = -3, p = 0.008$

### 8.5.2 Summary of results

Significant differences were found between consumer and producer co-ops in terms of their governance structures and behaviours. As predicted, consumer co-op boards are, for

the most part, more involved in corporate governance, although not all the sub-hypotheses presented in Section 8.4 were supported.

Generally, consumer co-op boards appear to be more diversified, more professionalized, better prepared, and more involved in budgetary planning. Consumer co-op boards also meet more frequently; and are more likely to rely on only the board chair for agenda setting, use external advisors, and use quantifiable measures to assess CEO performance.

### **8.6 Issues and limitations with the analyses**

As with any research, there are issues and limitations with this thesis. First, there is measurement error. The variables analyzed from the CBS were never intended to assess control costs. As such, they may not capture monitoring costs, the cost of managerial opportunism or the cost of collective decision-making.

Likely there is also a degree of simultaneity. As depicted in Figure 8.1, the relationship between control costs and the oversight of management is a dynamic feedback loop. At any point, something outside of the loop may affect both a firm's control costs and its corporate governance. An economic downturn, for instance, could shrink a co-op's geographic region as operations are reduced to save costs, as well as shift members' attention away from overseeing management.

Second, it may be that the theoretical model used does not accurately account for the reported differences between consumer and producer co-ops. This thesis is based on Hansmann's theory of ownership. But if control costs are not actually driving the

differences in corporate governance structures and behaviours, then using Hansmann's theory may cause the wrong conclusions to be drawn.

Third, the qualitative measures analyzed in this thesis, such as directors' preparedness for board meetings, were taken from the CEO's perspective. As discussed in Chapter 6, the CEOs for every co-op but two were interviewed for the CBS. Only 60 percent of board chairs were interviewed. Consequently, just CEO data were used in this thesis, even though the CEO and the board chair may have had very different opinions on certain topics. For instance, half of the CEOs surveyed thought that directors were well prepared for board meetings. From the board chair's perspective, this may be an underestimation. It is not hard to imagine board chairs believing that more than 50 percent of their board were well prepared.

Despite these issues, results from this thesis support the belief that corporate governance is endogenous. As shown in Sections 8.2, 8.3 and 8.5, significant differences were found between consumer and producer co-ops in terms of the variables associated with control costs, and the variables associated with governance structures and behaviours.

## **8.7 Conclusion**

This chapter tested both the presumption that consumer co-ops have higher control costs, and the main hypothesis that consumer co-op boards are more involved in overseeing management than producer co-op boards. Results from the PCA described in Section 8.2 suggest that consumer co-ops do have higher control costs, and their boards are more

involved in overseeing management. These results are further supported by the analyses described in Sections 8.3 and 8.5.

Factors related to monitoring costs, the cost of managerial opportunism, and the cost of collective decision-making were examined in Section 8.3. Results indicate that the characteristics of consumer co-ops are the characteristics associated with an increased cost of controlling the firm. The results presented in Section 8.5 support the main hypothesis. There are significant differences between consumer and producer co-ops in terms of several governance structures and behaviours.

With the presumption of control cost differences and the associated prediction of different governance structures and behaviours between consumer and producer co-ops both holding, this chapter adds to the existing literature that maintains corporate governance is endogenously determined. What this means from a public policy perspective is explored next in Chapter 9.

## **Chapter 9. Policy Implications and Future Research**

### **9.1 Summary and alternative interpretations of results**

This thesis tested the premise that corporate governance is endogenous. Two distinct organizational types were examined — consumer co-ops and producer co-ops. Overall, the results reported in Chapter 8 support the existing research that suggests corporate governance is endogenously determined.

Differences were found between consumer and producer co-ops in terms of their control costs, and their governance structures and behaviours. In general, consumer co-ops had higher control costs, and their boards were more involved in overseeing management. These findings align with Hansmann's (1996) theory of ownership which suggests that as the cost of controlling the firm rises, owners will be less likely to oversee management themselves. Instead, the oversight role will increasingly fall on the board.

Support in this thesis for Hansmann's theory is not overly strong, however. This leaves room for competing theories to explain the endogenous nature of corporate governance. As Adams et al. (2010) state, "governance structures arise endogenously because economic actors choose them in response to the governance issues they face" (p. 59). Both Adams et al. and Hansmann (1996) see the choice of governance structure as a matter of optimization — i.e., what is best for the firm and its owners. In other words, firms differ in terms of their corporate governance because the governance structures that produce the best outcome for one firm and its owners may produce suboptimal results for another firm with different owners.

What is best for owners is not the only factor that determine which governance structures a firm adopts, however. Research suggests that depending on their influence and power, managers may be able to opportunistically influence the choice of governance structures, pushing a board to adopt measures that benefit managers rather than owners.

Bebchuk and Fried (2003) assert that executive compensation schemes are routinely influenced by powerful managers seeking greater compensation than they would receive if only owners were considered (i.e., compensation that is higher than managers would otherwise get if compensation schemes were designed solely to maximize shareholder value). Therefore, differences between firms in terms of managerial compensation are often the result of differences in managerial power. More powerful managers have larger compensation packages.<sup>35</sup>

Hermalin and Weisbach (1998) also consider managerial power, although they look at how it can influence board composition. As discussed in Chapter 2, the authors theorize that powerful CEOs can influence director selection. Managerial power, according to Hermalin and Weisbach, is a function of a firm's past performance; better performing firms are assumed to have more talented CEOs, and with that talent comes power. To keep them happy, powerful CEOs are allowed to influence director nominations; consequently, they select inside directors who are less willing to monitor management. For firms with less powerful CEOs, the board can select outside directors who will, according to popular theory, monitor management more closely.

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<sup>35</sup> There are limits to how much a manager can demand. The markets and a firm's board of directors will only tolerate so much. Still, these constraints do not prevent managers from being paid much more than they would be if compensation levels were set strictly based on shareholders' best interests (Bebchuk & Fried, 2003).

What Hermalin and Weisbach (1998) and Bebchuk and Fried (2003) show is that the economic actors choosing a firm's governance structures are not necessarily owners or board members (in their role as owners' representatives). Instead, it may be influential managers who ultimately make governance decisions. Thus, if corporate governance is looked at using what Bebchuk and Fried (2003) call the "managerial power approach" and not the optimization approach emphasized by Hansmann's (Hansmann, 1996) theory of ownership, then the results presented in Chapter 8 need to be reinterpreted.

Under the optimization approach, the differences reported between consumer and producer co-ops are attributed to producer co-ops having lower monitoring costs. Those lower monitoring costs make it optimal for producer co-op members to be involved in overseeing management. For consumer co-op members, their higher monitoring costs make the optimal choice one of shifting oversight duties to the board. If, however, a managerial power approach is taken, it could be that the differences between consumer and producer co-ops in terms of their corporate governance are due to consumer co-ops having more powerful and influential managers.

For instance, the largest principal component associated with governance structures and measures is Component 2. Described in Chapter 8, increased levels of Component 2 represent greater board diversity — i.e., higher percentages of female directors and new directors. Under an optimization approach, that increased diversity is believed to be associated with increased managerial oversight by the board, especially if female directors are brought onto the board to improve its performance. Given that consumer co-ops have higher levels of Component 2 on average, the conclusion is that consumer co-op boards are



more involved in overseeing management. This is because monitoring costs are too high for consumer co-op members to do the monitoring themselves.

If, however, decisions regarding corporate governance are not based on what is best for the co-op and its members but on managerial power instead, then the interpretation of Component 2 changes. Under the managerial power approach, the increased percentage of new directors on consumer co-op boards stems from influential managers seeking to hamper the board's ability to oversee management. As mentioned in Chapter 4, new directors may lack the expertise possessed by long-serving directors to properly oversee the firm (Wertheim et al., 2016); consequently, powerful managers will stack their boards with new, inexperienced directors to hinder managerial oversight. Now, instead of indicating that consumer co-op boards are more involved in corporate governance, higher levels of Component 2 suggest that consumer co-ops have more powerful managers and less effective boards than producer co-ops.

Differences in managerial power do not, however, explain why consumer co-ops have a higher percentage of female directors. It seems unlikely that influential managers would want more women on the board, if doing so meant that management would be subject to increased oversight. Still, it may be the case that an increased percentage of female directors on consumer co-op boards is not the result of directors and members wanting what is best for the co-op. Instead, more female directors may be the combination of external pressure to diversify co-op boards (Co-operatives UK, 2019) and consumer co-ops having larger, more diverse memberships from which to acquire female directors.<sup>36</sup>

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<sup>36</sup> Producer co-ops in the Co-operative Business Study are primarily from the agricultural sector. Nearly two thirds (64%) of agriculture producers are male, and past research states that producer co-ops have fewer

Although this interpretation does not fit the managerial power approach, it does not fit the optimization approach either. What it does capture is a regulatory, or external pressure, approach — that corporate governance choices are influenced by forces outside of the firm, such as regulatory bodies or advisory organizations.

Regardless of the approach used to interpret the results of this thesis, it is important to recognize that a firm's corporate governance can be chosen by a variety of economic actors. Hansmann only considers a firm's owners when looking for the most efficient outcome; the corporate governance structure chosen will be the one that maximizes the value owners receive. Such a limited view ignores other economic actors, many of which are increasingly getting attention by academics, business groups, investors, and governments.

In 2019, the Business Roundtable redefined the purpose of a corporation, recognizing that firms must consider other stakeholders beyond shareholders. With this revised definition, corporations are accountable to not only their shareholders, but also to their customers, employees, suppliers, communities, and the environment (Business Roundtable, 2019). This expanded set of stakeholders increases the number of economic actors who can potentially influence a firm's corporate governance. The revised definition offered by the Business Roundtable also increases a firm's responsibilities, moving the corporation away from the optimization approach used by Hansmann to an approach that aligns more closely with Environmental, Social, and Governance (ESG) criteria.

Environmental, Social, and Governance criteria are a set of standards used to assess a firm's standing in terms of issues related to the environment (e.g., climate change), social

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members (Birchall, 2017; United States Department of Agriculture, 2019). Consumer co-ops, on the other hand, have larger memberships that are often more than fifty percent female (COPAC, 2015; Birch, 2012).

responsibility (e.g., human rights), and governance (e.g., shareholder protection).

Organizations and governments such as the World Economic Forum (World Economic Forum, 2020) and the European Union (The European Parliament and The Council of The European Union, 2014) have developed non-binding guidelines around the disclosure of ESG information. At their core, ESG criteria provide investors with a way of knowing a firm's nonfinancial performance, as well as the opportunities and risks faced by a firm (Hank, 2011; Limkriangkrai et al., 2017). ESG criteria also expand the board's monitoring and advising responsibilities.

Instead of only having to monitor management so it acts in owners' interests and advise management on how to meet owners' needs boards must consider ESG criteria and "the wider demands of people and planet", (World Economic Forum, 2020, p. 6). Data on a wider set of stakeholders are not captured by the Co-operative Business Study (CBS). As discussed in Chapter 6, the CBS contains information regarding members, managers, and the board. It does not consider employees, the community, or the environment.<sup>37</sup>

Gathering data on additional stakeholders might provide a more well-rounded view of the governance obligations of co-operatives (and is part of the future research recommendations presented at the end of this chapter). However, information on a wider set of stakeholders and expanded board duties, or a different governance approach, would not change the conclusion offered by this thesis that corporate governance is endogenously

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<sup>37</sup> Interestingly, one of the foundational co-operative principles states that a co-op must work for the sustainable development of its community (International Co-operative Alliance, 2005). The seven principles were created in 1995, decades before the concern for ESG criteria and sustainability emerged among investor-owned firms.

determined. Consumer co-ops and producer co-ops have different governance structures and behaviors because of organizational differences between the two co-op types.

Because corporate governance is endogenously determined, there is no best way of designing a corporate governance system. Context must be considered, which includes paying attention to industry and environment of the firm, ownership type and dispersion, firm size, and firm complexity (Huse, 2005a; Huse, 2005b). Consider the push for board gender-equality. Countries — including Belgium, France, Iceland, Italy, India, and Norway — all have gender quotas for publicly listed companies (Smith, 2018; Aguilera et al., 2021). Quotas range from requiring 20 percent of directors be female in France to 40 percent in Iceland. India requires boards to have at least one female director.

Although improving board diversity is laudable, mandating gender quotas for co-operatives could be problematic — especially for agriculture co-ops. According to the United States Department of Agriculture (2019), almost two thirds (64%) of agriculture producers are male, suggesting agriculture co-ops have a limited number of female members to draw from. Requiring a minimum number of female directors could place undue emphasis on recruiting or endorsing female candidates. It could also mean that a board seat sits vacant if there is no one to fill it. Belgium law, for instance, stipulates that any board nomination that does not fulfill, or maintain, that one-third gender quota is nullified (Calkoen, 2019).

The question is to what degree are the benefits of having more female directors realized if other aspects of governance suffer. Reducing a board's size until it meets a gender quota could compromise its ability to advise management. It could also tax already-serving

directors who must bear the burden of a diminished board, making them overwhelmed and ineffective.

None of this is to say that producer co-ops should not diversify their boards, or that gender-quotas for co-operatives are imminent. Co-op boards, regardless of type, should diversify. Homogenous boards are associated with weaker managerial oversight, compared to boards that are more diversified (Adams & Ferreira, 2009). Greater diversity has also been associated with more effective problem solving, increased creativity and innovation, and better corporate leadership (Carter et al., 2003).

The point being made is that effective governance needs to consider context. Any policy that is insensitive to organizational particulars may be less effective or have unintended consequences. Given that corporate governance is endogenous, policymakers should be wary of “one-size-fits-all” governance measures.

## **9.2 Policy ramifications**

Policymakers by their nature are drawn to “one-size-fits-all” governance solutions. Blanket policies that can be widely applied have the greatest reach, and usually require less energy to develop and enforce. But “one-size-fits-all” solutions may backfire given that corporate governance is endogenous. Standardized governance measures may produce sub-optimal results because they do not account for firm-specific differences.

In response to the limited effectiveness of “one-size-fits-all” measures, it may be tempting to recommend policymakers craft targeted governance policies. This, however, is unrealistic. The knowledge to custom-design corporate governance measures does not exist; policymakers would never be able to consider enough firm-specific differences.

Moreover, attempting to impose specific governance measures on individual firms would involve an incursion into their rights that would not be allowed.

Policymakers may have to recognize that good corporate governance is something that individual firms need to develop for themselves. As Sonnenfeld (2002) notes, well-functioning and poorly functioning boards are often structured the same. So instead of developing measures that dictate a specific governance structure, policymakers should emphasize what Forbes and Milliken (1999) call “task” and “maintenance” criteria.

Task criteria relate to the board’s ability to oversee and advise management. This includes making sure directors have the necessary skills to govern the firm, as well as ensuring those skills are properly used. Maintenance criteria encompass the board’s ability to work together. Of particular concern to Forbes and Milliken is how directors engage in and resolve cognitive conflict.<sup>38</sup>

Finkelstein and Mooney (1994) also emphasize directors’ ability to get along with each other. They maintain that for boards to be successful, directors must be able to work together and engage in constructive criticism. This means listening to diverse views and engaging in productive debate without lapsing into destructive conflict. Destructive conflict personalizes a disagreement, making it less about solving a problem and more about individuals attacking each other (Finkelstein & D’Aveni, 1994).

Together, both sets of authors stress the importance of soft skills while downplaying standard governance measures such as requiring director independence. For policymakers, this means instead of prescribing broadly applied governance measures, effort should be

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<sup>38</sup> Cognitive conflict refers to task-oriented differences in judgment between group members (Forbes & Milliken, 1999).

spent on developing policies that enhance board cohesiveness and improve directors' ability to function as a team. By focusing on directors' soft skills, policymakers can try to improve corporate governance while still allowing a firm to determine its own governance structures.

Still, if improving soft skills is not enough, policymaker can develop rules, regulations or recommendations that use a comply-or-explain approach. The approach allows policymakers to set governance regulations, while still giving companies the flexibility to deviate if necessary.

#### *9.2.1 Comply-or-explain corporate governance measures*

The comply-or-explain approach to corporate governance originated in the United Kingdom with the Cadbury Report in 1992 (Sturm, 2016). Comply-or-explain measures are prominent in the European Union and, with the passing of Bill C-25, have started to appear in Canada.<sup>39</sup> By contrast, corporate governance legislation in the United States is predominantly mandatory in nature; firms must comply without deviation.

Comply-or-explain policies offer a degree of flexibility that is not found with one-size-fits-all governance measures. Companies can avoid having to adopt sub-optimal governance measures that do not account for firm-specific differences. In effect, the comply-or-explain approach keeps corporate governance a choice variable.

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<sup>39</sup> Bill C-25 is an amendment to the Canadian Business Corporations Act, the Canada Cooperatives Act, the Canada Not-for-Profit Corporations Act, and the Competition Act (Government of Canada, 2018). The amendment requires federally incorporated companies to share diversity targets for the board and senior management. Companies are also required to disclose policies relating to the identification, nomination, and selection of women, Indigenous people, people with disabilities, and members of visible minorities. If a company does not have diversity targets, or lacks appropriate policies, it must explain why (Government of Canada, 2021).

Comply-or-explain is not a panacea, however. According to Arcot et al. (2010), one in five non-complying firms in the United Kingdom provide no explanation for why they deviated from a governance regulation. If an explanation is given, it is often poor quality, failing to identify the specific circumstances that justified the non-compliance. Similar results were found by Van de Poel and Vanstraten (2011) in their study of Dutch firms.

Companies can give poor explanations for non-compliance because the reasons for their deviations are rarely scrutinized (RiskMetrics Group, 2009). Instead, market-wide monitors, such as stock exchanges, mainly focus on whether a firm makes its corporate governance information available. And although shareholders have a crucial interest in monitoring firms, doing so is often too effortful. Also, shareholders are rarely encouraged to adopt more active monitoring role (RiskMetrics Group, 2009), and they seem willing to excuse poor reasons for non-compliance (or a lack of reason altogether) if a firm is performing well (MacNeil & Li, 2006).<sup>40</sup>

Attempts have been made to improve the effectiveness of comply-or-explain measures, such as requiring companies to provide detailed, transparent rationales for non-compliance, but ultimately, the problem comes down to needing a formal authority monitor and verify explanations (Arcot et al., 2010); other monitors are not effective. This means governments have to invest energy overseeing comply-or-explain measures that they would not have to do with standardized, blanket measures.

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<sup>40</sup> Although research on the comply-or-explain focuses on IOFs, the inferences made about shareholder behaviour seem just as applicable to co-operatives. It is not unreasonable to think that members would overlook poor explanations by management if their co-op was performing well. And, as this thesis points out, if monitoring costs rise, members are less likely to participate in governance, meaning they would be less likely to properly assess non-compliance reasons themselves.



As with any policy, the comply-or-explain approach has costs and benefits. The benefit afforded to firms by being able to choose their governance structures and behaviours must be weighed against 1) the monitoring costs incurred to verify non-compliance explanations, and 2) the risk of firms using the comply-or-explain measures to sidestep unpleasant regulations.

### **9.3 Future research**

To better understand control costs, members from various co-operatives could be interviewed to see how costly they think it is to control their co-op. While this thesis tried to capture control costs using variables such as geographic region or membership size, it did not measure members' perceptions. Whether the cost of controlling a co-op is perceived as high or low may be independent of the variables that were examined.

Learning how members determine whether it is costly to control their co-op may provide a more accurate way of assessing control costs, because control costs are essentially subjective. They are determined individually by each member. If paired with the data already in the CBS, interview data could also be used to ascertain the antecedents of control costs.

A second avenue of future research would be to examine which theoretical framework best captures why firms have the corporate governance that they do. Hansmann's theory of ownership and the theory that corporate governance is endogenously determined both maintain that a firm settles on its governance structures and behaviours because they are most efficient.

Yet in the real world, the most efficient outcomes do not always win out. Instead, corporate governance may be chosen because it benefits someone other than owners. Those individuals or groups with power choose the corporate governance that maintains their power. Shifting the theoretical lens from focusing on efficiency to focusing on power may change any conclusions drawn.

A third avenue of future research would be to interview both the board chair and the CEO about their co-operative and its corporate governance. As discussed in Chapter 8, one limitation of the Co-operative Business Study (CBS) is that for nearly one half of the participating co-ops, only the CEO was interviewed. This left a gap in the data because the CEO's perceptions may be different than the perceptions of the board chair. Understanding if and how the CEO and the board chair see the world differently may provide a way of recognizing when the board and management will come into conflict and when they will work collaboratively.

In a similar vein, it would be interesting to interview directors from IOFs and directors from co-ops to see if they differ in how they view their roles; how they understand the businesses they oversee; and how they view their relationship with owners, other stakeholders, and the community at large. A growing concern among some co-operatives is that the professionalization of their boards will push co-ops away from their guiding principles and diminish democratic member control (Pohler, 2018).

Yet the boards of IOFs are increasingly being tasked to recognize stakeholders other than shareholders, and to consider the firms they oversee in the broader context of the environment and society (Business Roundtable, 2019). In other words, IOFs are being pushed to act more like co-operatives. Consequently, it may be the case that IOF directors

(and by extension, professional directors) are more like co-op directors than originally believed.

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## Appendix A: Removing Credit Unions and Farm Credit Co-ops from Analysis

The primary analysis of this thesis is the Principal Component Analysis (PCA) detailed in Chapter 8. To determine whether credit unions influenced the results of the PCA, credit unions were removed the analyses. This dropped the sample size from 289 co-operatives to 267. As shown below, removing credit unions did not significantly impact results.

The PCA conducted on the reduced model (i.e., the model lacks credit unions) produced five principal components with an eigenvalue higher than one (see Table A.1).

**Table A.1** Principal components, eigenvalues and variance

	Eigenvalue	Variance	Cumulative Variance
<b>Component 1</b>	<b>3.04</b>	<b>20.3</b>	<b>20.3</b>
<b>Component 2</b>	<b>1.83</b>	<b>12.2</b>	<b>32.5</b>
<b>Component 3</b>	<b>1.47</b>	<b>9.8</b>	<b>42.3</b>
<b>Component 4</b>	<b>1.23</b>	<b>8.2</b>	<b>50.6</b>
<b>Component 5</b>	<b>1.06</b>	<b>7.1</b>	<b>57.6</b>
Component 6	0.98	6.6	64.2
Component 7	0.90	6.0	70.2
Component 8	0.86	5.8	75.9
Component 9	0.81	5.4	81.3
Component 10	0.68	4.5	85.8
Component 11	0.60	4.0	89.8
Component 12	0.53	3.5	93.3
Component 13	0.51	3.4	96.7
Component 14	0.38	2.5	99.2
Component 15	0.12	0.8	100.0

Table A.2 shows the contribution of each variable to the five principal components. Like the first component described in Chapter 8, the three largest contributors for the reduced-model Component 1 are how much of a co-op's business is accounted for by its ten largest

members, the percent of members who voted in the last director election, and the percent of members who attended the last AGM.

**Table A.2** Contribution by the variables to Components 1 to 5

	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5
Capital Commitment	4	0.18	1	0.06	1
% of Business from Largest Member	10	2	10	4	0.01
% of Business from Largest 10 Members	<b>16</b>	5	5	1	1
Number of Members	0	0.04	<b>21</b>	1	<b>25</b>
Years in Business	3	11	0.02	4	8
% of Members with Voting Rights	1	0.41	0.12	<b>45</b>	1
% of Members who voted in the last election	<b>25</b>	0.03	2	0	0.21
% of members who attended the last AGM	<b>25</b>	0.10	1	0.07	1
Average number of directors	1	0.05	<b>29</b>	3	4
Average % of female directors	0.06	<b>30</b>	0.33	2	1
Average % of non-member directors	0.26	1	7	12	<b>30</b>
Average % of new directors	1	<b>29</b>	1	0.34	9
Average % of long-service directors	2	<b>17</b>	0.16	13	6
Average # of board meetings per year	11	0	4	6	8
Average % of CEO compensation that is performance based	0.13	2	<b>19</b>	9	4
Total (100%)	100	100	100	100	100

Components 2 through 4 of the reduced model also resemble the original principal components. The largest contributors to Component 2 are the percent of female directors on a board, the percent of new directors, and the percent of long-serving directors. For Component 3, membership size, board size, and the percent of CEO compensation that is performance based are the most important variables. And for Component 4, the largest contributor is the percent of members with voting rights. Component 5 of the reduced

model appears to be a blend of Components 5 and 6 from the original PCA, with membership size and the percent of non-member directors on the board as its largest contributors.

Looking at the relationships between the principal components and their contributing variables, most correlations in the reduced model PCA are the same direction as the correlations in the original PCA (see Table A.3 for the reduced model correlations). There are two exceptions. Component 2 is positively correlated with the percent of long-serving directors on the board, whereas the original correlation was negative. And the negative relationship between Component 5 and the percent of non-member directors on the board was positive in the first PCA.

**Table A.3** Correlations between the variables and Components 1 to 5

	Comp. 1	Comp. 2	Comp. 3	Comp. 4	Comp. 5
Capital Commitment	0.13	0.00	0.02	0.00	0.01
% of Business from Largest Member	0.32	0.04	0.15	0.05	0.00
% of Business from Largest 10 Members	<b>0.47</b>	0.10	0.08	0.01	0.01
Number of Members	0.00	0.00	<b>0.31</b>	0.01	<b>0.27</b>
Years in Business	0.11	0.21	0.00	0.05	0.09
% of Members with Voting Rights	0.02	0.01	0.00	<b>0.56</b>	0.01
% of Members who voted in the last election	<b>0.77</b>	0.00	0.03	0.00	0.00
% of members who attended the last AGM	<b>0.77</b>	0.00	0.01	0.00	0.01
Average number of directors	0.03	0.00	<b>0.42</b>	0.04	0.05
Average % of female directors	0.00	<b>0.56</b>	0.00	0.03	0.01
Average % of non-member directors	0.01	0.03	0.10	0.14	<b>0.32</b>
Average % of new directors	0.02	<b>0.54</b>	0.01	0.00	0.09
Average % of long-service directors	0.06	<b>0.31</b>	0.00	0.16	0.06
Average # of board meetings per year	0.33	0.00	0.06	0.08	0.09
Average % of CEO compensation that is performance based	0.00	0.04	<b>0.28</b>	0.11	0.05

Based on which variables contributed most to a component, the principal components of the reduced model also seem to capture the same concepts as Components 1 through 5 of the original PCA (see Table A.3 for the variables and groups associated with each principal component).

**Table A.3** Principal components, their associated variables, and groups

	Concept	Variable Group	Main Contributing Variable
Component 1	Influential members	Control costs	Business from largest 10 members
Component 2	Board diversity	Governance	% of female directors
Component 3	Board size	Governance	Number of board members
Component 4	Member homogeneity	Control costs	% of members with voting rights
Component 5	Board professionalism	Governance	% of non-member directors

Significant differences were found between consumer and producer co-ops in terms of Component 1 ( $t(237) = -5.7, p < 0.001$ ), Component 2 ( $t(129) = -3.8, p < 0.001$ ), and Component 4 ( $t(234) = -4.1, p < 0.001$ ). Similar results were found for the original PCA. No significant differences were found for Component 3 ( $t(128) = 0.55, p = 0.6$ ) and Component 5 ( $t(143) = -0.78, p = 0.4$ ). Similar results were found for the original PCA, except for the original Component 5, which had significant differences. Tables A.4 to A.8 compare the five components across co-op type.

**Table A.4** Member influence (i.e., Component 1)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	91	-0.74	1.31	-2.39	-0.96	6.59
Producer	176	0.38	1.82	-2.49	-0.21	8.41

$t(237) = -5.7, p < 0.001$

**Table A.5** Board composition (i.e., Component 2)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	91	-0.49	1.68	-4.79	-0.74	2.51
Producer	176	0.25	1.07	-3.03	0.41	3.21

$t(129) = -3.8, p < 0.001$

**Table A.6** Board size (i.e., Component 3)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	91	0.06	1.48	-2.57	-0.24	10.69
Producer	176	-0.3	1.05	-3.62	-0.13	4.43

$t(128) = 0.55, p = 0.6$

**Table A.7** Member heterogeneity (i.e., Component 4)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	91	-0.34	0.87	-2.44	-0.36	3.62
Producer	176	0.18	1.18	-2.79	-0.06	6.31

$t(234) = -4.1, p < 0.001$

**Table A.8** Board professionalism (i.e., Component 5)

	N	Mean	Standard Deviation	Minimum	Median	Maximum
Consumer	91	-0.07	1.23	-2.15	-0.13	7.35
Producer	176	0.04	0.91	-6.4	0.12	1.72

$t(143) = -0.78, p = 0.4$