

**GOVERNANCE STRUCTURE, PRODUCT DIVERSIFICATION, AND
PERFORMANCE**

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Abstract	Product diversification and its financial outcomes have been studied exhaustively. However, previous literature has focused on corporations, ignoring other important legal organizations or governance structures. In this paper, we study the diversification strategies of cooperatives and compare them with corporations. We develop hypotheses that predict that cooperatives differ from corporations with respect to the extent, type, and performance of product diversification. Data obtained from a sample of 118 cooperatives and corporations are used to test the hypotheses. We find significant differences between cooperatives and corporations. Therefore, our main conclusion is that governance structure does matter for product diversification and its performance. Other governance structures, besides corporations and cooperatives, and their influence in other areas, besides product diversification, could be promising directions for future research.	
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ABSTRACT

Product diversification and its financial outcomes have been studied exhaustively. However, previous literature has focused on corporations, ignoring other important legal organizations or governance structures. In this paper, we study the diversification strategies of cooperatives and compare them with corporations. We develop hypotheses that predict that cooperatives differ from corporations with respect to the extent, type, and performance of product diversification. Data obtained from a sample of 118 cooperatives and corporations are used to test the hypotheses. We find significant differences between cooperatives and corporations. Therefore, our main conclusion is that governance structure does matter for product diversification and its performance. Other governance structures, besides corporations and cooperatives, and their influence in other areas, besides product diversification, could be promising directions for future research.

INTRODUCTION

Product diversification is a central topic of research in business (Ramanujam and Varadarajan, 1989). Many empirical studies have been devoted to the performance outcomes of product diversification, but the findings are mixed (Palich, Cardinal, and Miller, 2000). One of the reasons for these mixed findings may be differences in legal organization or governance structure of the companies (Bethel and Liebeskind, 1998).¹ However, the influence of the governance structure on product diversification and its financial outcomes has been rather neglected.

The vast majority of studies are based on (public) corporations. No studies are available about the diversification strategies of cooperatives. This is remarkable, since cooperatives still play an important role in many national economies and sometimes an even crucial one in specific sectors, like food and agriculture. Therefore, more insight into potentially value-creating or -destroying strategies of these companies seems important.

In this paper, we try to answer two questions. First, do the diversification strategies of corporations and cooperatives differ? Second, do the diversification strategies of corporations and cooperatives have different implications for financial performance? After sketching the theoretical background, we develop three hypotheses, which link governance structure, product diversification, and financial performance. Following a description of the methods, we present the results of an empirical test of the hypotheses, which is based on a sample of 118 cooperatives and corporations. The results indicate that governance structure does matter for product diversification and its financial outcomes. The final section of this paper contains a short discussion and conclusion.

THEORETICAL BACKGROUND

Before going into the theories that explain product diversification and its relationship with performance, we first provide a brief description of the differences between corporations and cooperatives (see, e.g., Hendrikse and Veerman, 2001).

Corporations have shareholders. The shares give them rights to the assets, including the rents, of the corporation. The shares can be traded with relative ease. The managers of corporations can but do not necessarily have to own shares of the firm. Cooperatives have members, who have rights to the assets, including the rents of the cooperative. The rights are difficult to transfer from one member to another. In addition, the members are suppliers or customers of the cooperative (or both). For example, in agriculture, farmers have formed cooperatives that buy, process, and market their produce and cooperatives that sell them supplies like animal feed and seeds (or cooperatives that do both). In retail, shopkeepers have formed cooperatives that supply them with products and services. Cooperatives are managed by managers who are usually not a member of the cooperative.

Literature that directly links cooperatives to product diversification is not available. However, clues might be found in existing perspectives that explain the choice of product diversification (Hoskisson and Hitt, 1990; Montgomery, 1994; Ramanujam and Varadarajan, 1989). These perspectives are rooted in different theories or paradigms, notably agency theory (Jensen, 1986), transaction cost economics (Williamson, 1975), the resource-based view of the firm (Penrose, 1959), industrial organization (Palepu, 1985) and strategic contingency theory (Venkatraman, 1989). Of these five perspectives, agency theory, transaction cost economics and the resource-based view of the firm are the most promising, because they include factors that may discriminate between corporations and cooperatives.

According to the resource-based view, firms can have excess capacity in resources (Penrose, 1959). The resources can be redeployed in new businesses, which implies product diversification. Several types of resources

¹ The governance structure or legal organization comprises those organizational arrangements that determine how the company contracts with important stakeholders, such as buyers, suppliers, lenders, and investors (Bethel and Liebeskind, 1998).

can be used for diversification (Chatterjee and Wernerfelt, 1991). *A priori*, no differences with respect to physical and intangible assets can be expected, but, in general, cooperatives have less financial resources than corporations. Specifically, cooperatives can only generate additional equity by retaining earnings and obtaining extra funds from the limited pool of members. In contrast, corporations can retain earnings and raise extra equity in the stock market from any investor who is willing to take the risk. Consequently, cooperatives may have fewer means to diversify than corporations.

Agency theory suggests that firms diversify because their managers have personal motives to do so. Managers do not return free cash flows to shareholders, but spend them on diversification projects, because of motives like empire building, pay increases, and reduction of employment risk (Jensen, 1986). This is not in the interest of the shareholders, for instance because they can diversify risks themselves by building an efficient stock portfolio. However, in a corporation the interests of shareholders and managers can be aligned, for instance by granting stock options to managers, which could help to eliminate diversification projects that destroy value. This instrument is not available in a cooperative. In addition, risk reduction through product diversification might actually be in the interest of the members of the cooperative, since a large portion of their wealth is tied to the cooperative.

Finally, according to transaction cost economics, firms diversify to realize benefits that are costly to realize through market transactions. The most important benefits of product diversification are economies of scope and economies of internal capital markets (Jones and Hill, 1988). Economies of scope arise when the costs of jointly producing two products are lower than the costs of producing them separately (Teece, 1982). In an internal capital market, the corporate headquarters attracts cash flows, reallocates them to the most attractive investment proposals of the divisions, and monitors their deployment (Williamson, 1975). This is presumed to result in superior allocation and policing, compared with the external capital market. Related-diversified corporations are able to realize economies of scope and economies of internal capital markets, though not simultaneously, because the required administrative mechanisms are conflicting (e.g., Hill, Hitt, and Hoskisson, 1992). Unrelated-diversified corporations can only attain economies of internal capital markets (Jones and Hill, 1988). Depending on their type of diversification, cooperatives may also be able to realize the two types of benefits. However, the benefits of internal capital markets may be more restricted, since, as argued earlier, cooperatives cannot obtain equity from the stock market to allocate to attractive investment proposals.

HYPOTHESES

Departing from the theoretical framework, we formulate three hypotheses, one for the level, one for the type, and one for the performance of product diversification. Each hypothesis compares cooperatives with corporations.

As explained earlier, cooperatives have less financial resources than corporations. Both can get, for example, bank loans, but cooperatives are more restricted when it comes to equity. Therefore, given that cooperatives are not willing to sacrifice solvability and jeopardize the entire enterprise, they have fewer funds to start new activities. In contrast, corporations have better access to new equity. Moreover, they can use their own stock to pay for acquisitions. Consequently, for corporations it is easier to start new activities, including activities in different industries.

An additional argument can be found in the interests the shareholders and members have in the corporation and cooperative. Shareholders are primarily interested in the future profitability of the corporation, which is the basis for dividends and stock value. As a consequence, they are prepared to ratify any activity that is expected to improve profitability, including activities in a new industry. Members also have a stake in the future profitability of the cooperative. In addition, since they are suppliers or buyers of the cooperative (or both), they are interested in obtaining more and cheaper inputs from the cooperative or selling more outputs at a higher price to the cooperative (or both). As a result, if they have to choose between, for example, an investment in an enlargement of an existing plant that processes their output and an investment in a new industry, they might go for the first option.

Both arguments lead to hypothesis 1:

Hypothesis 1: Cooperatives are less diversified than corporations.

Managers may prefer to diversify, even into activities that reduce the value of the firm, because of personal motives, like reduction of employment risk (Montgomery, 1994). Since the shareholders of a corporation have other means to reduce their risks, they are assumed to oppose this kind of diversification. By granting the managers stock options, the shareholders can bring them into line. The members of a cooperative do not have this instrument at their disposal. Besides, they may actually have a preference for product diversification to reduce their risks. As mentioned in the theoretical background, a substantial portion of their wealth is tied to one cooperative. They cannot reduce their risks through small memberships in many cooperatives. The degree to which product diversification reduces risks depends on the correlation between the separate returns of the activities. The smaller

the coefficient of correlation between the returns, the lower the variability of total profits (Teece, 1982). Because the correlation between the returns of two unrelated activities is usually lower than the correlation between the returns of two related activities, unrelated diversification is more useful for risk reduction than related diversification. In sum, if they diversify, we expect cooperatives to have a larger inclination to pursue unrelated product diversification than corporations.

Again, a second argument can be brought forward. In a corporation, the distribution of rents over the shareholders is straightforward, because it can be based on the number of shares each shareholder possesses. In a cooperative with only one activity, the distribution can also be relatively simple. For example, in a cooperative that processes milk, the financial benefits of a high price for the supplied milk can be distributed according to the number of gallons of milk each member supplies to the cooperative. This becomes more complicated when the cooperative diversifies into a related industry, such as canned foods. In this case, it makes sense to combine specific activities, like logistics and marketing. However, the distribution of the resulting synergy gains over the various categories of members can no longer be based on a simple criterion, because one category of members supplies milk to the cooperative, whereas the other supplies (different kinds of) vegetables. In contrast, diversification into an unrelated activity, such as insurance, causes fewer problems for a cooperative, because of the absence of synergy gains.

Therefore, our second hypothesis is:

Hypothesis 2: Cooperatives diversify relatively more into unrelated activities than corporations do.

We would like to clarify that hypothesis 2 does not suggest that cooperatives diversify more into unrelated activities than they do into related activities. Also, it does not indicate that cooperatives have a higher level of unrelated diversification than corporations. Instead, our expectation is that the ratio of unrelated diversification to total diversification is higher for cooperatives than it is for corporations.

Our final hypothesis concerns the influence of the type of product diversification on the financial performance. For corporations, the type of diversification may not influence the financial performance. As discussed earlier, related-diversified corporations can realize economies of scope or economies of internal capital markets. They may opt for economies of scope, because these are based on the joint use of tangible or intangible resources, which are, in general, more scarce than financial resources and could, thus, generate higher rents (Montgomery and Wernerfelt, 1988). However, the costs involved in the realization of economies of scope are also relatively high. One of the reasons is that economies of scope entail strong interdependencies between activities, which obstruct the accountability of managers and necessitates the creation of a costly control structure (Jones and Hill, 1988). Unrelated-diversified corporations can only create economies of internal capital markets. The rents are relatively low, since economies of internal capital markets are based on beating the external capital market (Williamson, 1975), which is generally assumed to be quite efficient. However, the realization of economies of internal capital markets does not result in high costs, because, for example, interdependencies between activities are almost absent, so accountability is less difficult (Jones and Hill, 1988). For cooperatives, the situation could be slightly different. A priori, no differences might be expected with respect to economies of scope. However, cooperatives may not be in a position to fully realize economies of internal capital markets. Their headquarters can still allocate funds and monitor their use, but, given the restricted access to equity, there are only limited funds available. Consequently, unrelated-diversified cooperatives face extra costs and moderate benefits.

This leads to our final hypothesis:

Hypothesis 3: The influence of unrelated diversification on financial performance is negative for cooperatives, while it is neutral for corporations.

METHODS

Successively, we briefly discuss the sample and data collection, the measures, and the analyses we used to test the hypotheses.

Sample and data collection

Both the sample and the data originate from REACH (Review and Analysis of Companies in Holland). REACH is an electronic database, which contains predominantly financial information about many Dutch companies. We selected all cooperatives that were part of the 1996 and 1997 editions of REACH. We chose these years, because they included the largest number of cooperatives and are still quite recent. For all cooperatives, we established the main activity and accompanying industry code, which is given by REACH. We then selected for each cooperative a corporation with exactly the same code. This helps to control for industry effects. If more corporations

were available, we randomly selected one. The resulting sample contains 118 companies, half of which are cooperatives and half of which are corporations.

Measures

We used a dummy variable for the governance structure or legal organization. The variable has a value of zero for cooperatives and a value of one for corporations.

To measure product diversification, we used an unweighted product-count measure. Unweighted product-count measures are reliable, are easy to compute, and have low information requirements (Lubatkin, Merchant, and Srinivasin, 1993; Montgomery, 1982). Weighted measures are more refined, but the breakdown of sales that is necessary to calculate the weights is not available. Besides, Lubatkin et al. (1993) find a strong correspondence between product-count measures and Rumelt's (1974) categorical measures, which supports the validity of product-count measures. Our measure of (total) product diversification is the number of different four-digit industries a company is active in.

According to Varadarajan and Ramanujam (1987), unrelated diversification can be measured as the number of different two-digit industries a company is active in. We divided this number by (total) product diversification to determine the ratio of unrelated diversification to total diversification.

Our measure of financial performance is accounting-based. No market-based measures are available for cooperatives. Also, accounting-based measures have a close connection to the decision variables controlled by managers. Besides, the majority of diversification studies have used accounting-based measures, ensuring that the results of this study build on and can be compared with a substantial body of work in this area (e.g., Robins and Wiersema, 1995). We chose return on total assets, for both 1996 and 1997. Return on total assets is less dependent on the capital structure of the firm than return on equity (Hill et al., 1992), which is an important consideration, given that cooperatives have limited access to equity.

Our study controls for company size and vertical integration. Control for size effects is very common in the diversification literature (Chatterjee and Wernerfelt, 1991). Size may correlate with product diversification, governance structure, and firm performance. We used total company assets in 1996 and 1997 to measure size. Control for vertical integration is less common. A careful study of the companies in our sample revealed that many were active in industries that appeared to be unrelated, because the first two digits differed, but could in fact be quite related. For example, some of the cooperatives were active in both the production of animal feed and the trade in animal feed. We were afraid that, without controlling for this phenomenon, unrelated diversification would appear to be linked to the governance structure, whereas in fact vertical integration was behind this link, because of correlations with both governance structure and unrelated diversification. Therefore, we included a dummy variable for vertical integration, with a value of zero if there were no obvious vertical links between the activities of a company and a value of one if these links appeared to be present.

Naturally, we applied the usual transformations to the measures whenever this contributed to a better approximation of the normal distribution.

Analysis

We performed analysis of covariance (ANCOVA) to test the first two hypotheses. The dependent variables were total diversification and the ratio of unrelated diversification to total diversification, respectively. In both cases, the factor was the governance structure and the covariates were total company assets and vertical integration. The analyses were performed for both 1996 and 1997. The third hypothesis was tested through multiple regression. Return on total assets was the dependent variable. The independent variables were the ratio of unrelated to total diversification and total company assets. Again, the analyses were performed for 1996 and 1997.

RESULTS

In this section, we briefly present the results of preliminary analyses. The results of the ANCOVA analyses for the first hypothesis (see table 1) indicate that, while controlling for size and vertical integration, corporations and cooperatives significantly differ with respect to (total) product diversification (both in 1996 and 1997). On average, corporations were active in a mean number of 2.39 different (4-digit) industries, whereas this number was 2.01 for cooperatives. Consequently, our first hypothesis is supported.

The results of the ANCOVA analyses for the second hypothesis (see table 1, again) suggest that, while controlling for size and vertical integration, corporations and cooperatives also significantly differ regarding the ratio of unrelated diversification to total diversification (both in 1996 and 1997). On average, for corporations, the mean ratio of different unrelated (2-digit) industries to different 4-digit industries was 0.81, whereas this ratio was 0.86 for cooperatives. As a result, our second hypothesis is also supported.

Table 1. Results ANCOVA

	Total product diversification				Ratio of unrelated to total diversification			
	1996		1997		1996		1997	
	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>	<i>F</i>	<i>p</i>
Factor for governance structure	6.19	0.015	5.34	0.023	4.83	0.031	4.20	0.044
Covariate for total company assets	8.82	0.004	7.44	0.008	6.36	0.014	5.48	0.022
Covariate for vertical integration	24.26	0.000	24.13	0.000	0.38	0.542	0.40	0.528
Average mean (standard deviation):								
Cooperatives		2.01 (1.47)				0.86 (0.23)		
Corporations		2.39 (1.79)				0.81 (0.28)		

Finally, according to the outcomes of the multiple regression analyses for the third hypothesis (see table 2 for some key results), corporations and cooperatives differ with respect to the influence of unrelated product diversification on financial performance. Specifically, the ratio of unrelated to total diversification has no significant influence on the performance of corporations, while this ratio does have a negative influence on the performance of cooperatives, for both 1996 and 1997. Therefore, we also found evidence to support the third hypothesis.

Table 2. Results multiple regression analyses

	1996	1997
	B (standard error)	B (standard error)
Cooperatives:		
Ratio of unrelated to total diversification	-4.21 (1.63) **	-3.42 (1.51) *
Total company assets	-0.30 (0.15) *	-0.25 (0.14) †
Corporations:		
Ratio of unrelated to total diversification	-0.14 (0.74)	-0.61 (0.83)
Total company assets	0.15 (0.08) *	0.11 (0.09)

† $p \geq 0.1$, * $p \geq 0.05$, ** $p \geq 0.01$

DISCUSSION AND CONCLUSION

Although product diversification has been studied exhaustively, our knowledge of this important strategy is still incomplete. One of the gaps concerns the influence of the legal organization or governance structure on product diversification and its financial outcomes (Bethel and Liebeskind, 1998). In this paper, we have tried to fill this gap by analyzing the differences with respect to diversification between two governance structures, corporations and cooperatives. Specifically, we set out to answer two questions: first, do the diversification strategies of corporations and cooperatives differ, and second, do the diversification strategies of corporations and cooperatives have different implications for financial performance?

The results of an empirical study of 118 companies indicate that both questions have affirmative answers. Cooperatives are less diversified than corporations. When they diversify, cooperatives diversify relatively more into unrelated activities than corporations do. Finally, this unrelated diversification has a negative influence on the performance of cooperatives, whereas it has no influence on the performance of corporations. Cooperatives thus seem to follow strategies that may not be good for their financial health.

For the substantial body of research into product diversification, an important implication of our study is that differences in governance structure may account for the mixed findings of the empirical tests of the diversification-performance linkage. More in general, our study suggests that governance structure does matter. Therefore, other governance structures, besides corporations and cooperatives, and their influence in other areas, besides product diversification, could be promising directions for future research.

What could prove to be an obstacle, is that the characteristics of the various governance structures may vary from country to country, depending on the different institutional environments. For example, a cooperative in the Netherlands may differ somewhat from a cooperative in the United States (Hendrikse and Veerman, 2001).

This would limit the external validity of this study and of future studies dealing with governance structures. However, this certainly is not an issue that is unique to this specific area of research.

Additional limitations of our study can be found in the measures we used. For product diversification, we used unweighted measures, which are less refined than weighted measures, like the entropy measure (Jacquemin and Berry, 1979; Palepu, 1985), and quite unsophisticated compared with measures inspired by the resource-based view (e.g., Farjoun, 1998; Markides and Williamson, 1994; Robins and Wiersema, 1995). For financial performance, we used return on total assets, which is acceptable for corporations. However, in case of cooperatives, return on total assets may be less appropriate, since the members also have an interest in outcomes other than profits, such as low prices for the inputs they obtain from the cooperative or high prices for the outputs they supply to the cooperative. The issue is perhaps alleviated by the fact that we have not made any predictions about the absolute financial performance of corporations versus that of cooperatives. Instead, our expectations concerned the direction of the influence of product diversification on financial performance.

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