

RESEARCH NOTES AND COMMENTARIES

OWNERSHIP, ORGANIZATION, AND PRIVATE FIRMS' EFFICIENT USE OF RESOURCES

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The principal–agent theory asserts that public firms' performance is driven by efficient capital and labor markets but is silent about non-listed private companies, which are less permeable to market forces (both capital and labor) than are public companies. We propose and test a 2 × 2 framework distinguishing owner-controlled vs. agent-led firms from firms with a flat vs. multilayer organization. Our findings provide highly contrasted results and raise important issues for further study of private firms. Copyright © 2003 John Wiley & Sons, Ltd.

INTRODUCTION

Most of what we know about agency problems in business organizations comes from the principal–agent theory, which presumes publicly owned firms and separation of ownership and control (Jensen and Meckling, 1976; Jensen, 1998). Private firms have received relatively little theoretical and empirical attention despite their importance in worldwide wealth creation and business formation. In the United States, according to the Internal Revenue Service report (1996), 95 percent of firms with \$5 million or more in annual revenues are privately held. For countries where stock markets are small, private companies account for more

than two-thirds of the GDP (La Porta, Lopez-de-Salanes, and Shleifer, 1999).

Perhaps private firms have received relatively little scrutiny based on a belief that extant principal–agent theory sufficiently applies to the case of private firms. However, from an agency perspective, private companies exhibit four important distinctive characteristics. First, private firms are effectively isolated from capital market pressures (Gersick *et al.*, 1997; Schulze *et al.*, 2001). Second, their labor market appears to be less efficient than for public companies, due to an oft-observed decoupling between an agent's employment contract and a principal's expected performance (Besanko, Dranove, and Shanley, 1996; Gomez-Mejia, Nunez-Nickel, and Gutierrez, 2001). There can be an inefficient job selection process due to a self-serving attitude by principals called nepotism (Singell and Thornton, 1997). Third, by definition, private ownership

Key words: private firms; productive efficiency; agency theory; data envelopment analysis (DEA)

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does not offer the same palette of internal incentives as does public ownership. Rewards cannot be directly based on stock value increase, for instance, and often their owners do not want to dilute their control of the firm (Pagano and Roell, 1998). Finally, performance itself can have very idiosyncratic definitions, depending on the shareholders' conceptions of their company's goals and missions. Therefore, private ownership deserves separate consideration as far as agency problems and their relationship with performance and efficiency are concerned.

The purpose of this research is to test two agency theory tenets on private firms' performance measured by productive efficiency. We distinguish private firms according to their ownership control and organization. We propose that (1) owner-controlled firms are more efficient than agent-led firms, and that (2) flat firms are more efficient than multilayer firms. We use data from 162 privately held French firms and find contrasting results.

MORAL HAZARD, ADVERSE SELECTION, AND OWNERSHIP CONTROL

In characterizing the first dimension of our 2×2 framework, 'ownership control,' we consider two situations. In the first, the owners and the controllers are one and the same, e.g., friends or family members. This depicts the case of owner-controlled businesses,¹ where the owners participate in the management of their company (Litz, 1995). In the second, the owners neither control nor manage the business. They hire and delegate the management of the firm to professionals. We call these firms agent-led businesses.

Agency theory states that information asymmetries lead to two main types of problems that reduce a firm's efficient use of its assets, namely productive efficiency. Moral hazard is the risk of non-compliance of an action by an employee. In theory, complete contracts, whether explicit or not, present a guarantee in reducing the harmful effects of moral hazard on efficiency (Milgrom and

Roberts, 1992). Adverse selection refers to a situation where *ex ante* opportunism benefits the agent who hides information or gives erroneous information. Internal governance mechanisms (board of directors, decision hierarchies, and incentive structures) help compensate for adverse selection (Fama and Jensen, 1983). However, the possibility of drawing near to complete contracts and of designing efficient internal governance mechanisms depends on the relationship between ownership and control of the firm (Jensen, 1983).

In an owner-controlled firm, *ex post* uncertainty and contract incompleteness are reduced to a minimum (Alchian and Woodward, 1988). These firms' members share a common destiny, and they are likely to curb their opportunistic behavior in order to increase their firm's productive efficiency and their own wealth (Jensen, 1983). In effect, union between ownership and control reduces a self-utility maximizing attitude by agents and an inefficient use of resources (Fama and Jensen, 1983). Notably, the 'completeness' of the contract comes from a joint history, a common property, and a shared destiny in owner-controlled firms (Williams, 1992). As shareholders control the firm, the internal governance mechanisms are less costly than for agent-led firms. Common objectives in terms of securing common wealth and integrity reduce the likelihood of both *ex post* and *ex ante* opportunistic behaviors. Hence, the union of ownership and control reduces moral hazard and adverse selection. Therefore:

Hypothesis 1: On average, owner-controlled private firms are more efficient than agent-led private firms.

Moral hazard, adverse selection, and organization

The second dimension of our 2×2 framework relates to an organization's characteristic of the firm: simple vs. multiple levels of principal-agent relationships. Previous studies have shown that organization structure influences performance where moral hazard and adverse selection are problematic (Geeraerts, 1984). Williamson (1975: 150) postulated differences in 'goal pursuit and least-cost behavior' depending on the form of organization. Ouchi (1980) differentiated among markets, hierarchies, and clans using two

¹ While there exist several types of joint-ownership-and-control companies, e.g., 'friendship' companies—i.e., created and developed by a small group of friends as typified by Microsoft and Apple when formed—family firms represent the preponderance of joint ownership and control firms (see, for instance, La Porta *et al.*, 1999; Simon, 1996).

dimensions related to organizational functioning: goal incongruence and performance ambiguity. Burton and Obel (1988) have shown that organizational design influences how opportunism expresses itself in organizations.

We characterize organization according to the nature of the principal–agent relationship: namely, whether the principal–agent relationship is direct or indirect. In the first case there exists a direct hierarchical contact between the owner and the manager; i.e., the business has a flat organization. In the second case the relationship is indirect. Here the level of delegation of the owner is multiple; i.e., the agent leading the business reports to an organizational member (e.g., a member of the board or a vice-president) who is herself an agent dependent upon the owners. In this case, the firm has a multilayer organization.

As far as moral hazard is concerned, the more bureaucratized a firm, the higher the chances are that agents will exploit complexity and engage in logrolling (Williamson, 1985: 148–152). In firms with a direct principal–agent relationship, intrafirm contracts are less likely to suffer from *ex ante* and *ex post* incompleteness than those of multilayer organizations because of a relatively lower likelihood of strategic discrepancies both between owners and managers, and among managers and their subordinates (Tirole, 1986). In the case where there is a direct principal–agent relationship, the causal ambiguity in linking agents' actions to a firm's productive efficiency is reduced, as both goal incongruence and performance ambiguity are lowered (Ouchi, 1980). Adding intermediate levels of decision-making increases the risk of misleading interpretations and hidden actions.

With respect to adverse selection, due to relational contracting and peculiar risk–performance associations (Gomez-Mejia *et al.*, 2001: 81), the labor market is less efficient for private firms than for public companies in attributing performance-based wages, compensation (Heck and Walker, 1993), and internal promotion (Williamson, Wachter, and Harris, 1975: 272). As a consequence, individual attribution of performance is subject to interpretation (Ouchi, 1980: 135). This attribution problem is reinforced in private companies exhibiting multiple principal–agent relationships due to the higher odds of agents' opportunism than for simpler organizations. According to agency theory, control is more difficult when information asymmetry

increases between the principal and agents and when successive delegation increases managerial discretion (Fama and Jensen, 1995). For instance, in an international context, O'Donnell (2000) shows that increased information asymmetry and subordinates' discretion account for the higher likelihood of adverse selection in firms with multi-level principal–agent relationships. In this respect, multilevel principal–agent relationships in private firms hamper the efficient use of resources. Therefore:

Hypothesis 2: On average, flat private firms are more efficient than multilayer private firms.

The following question concerns the interaction between the control and organization dimensions of our framework. First, it follows from Hypotheses 1 and 2 that firms which are both owner-controlled and flat are the most efficient. It is also likely that multilayer agent-led firms present the least efficiency. It is less obvious to compare a multilayer owner-controlled firm with a flat agent-led firm. The former has the advantage of being owner-controlled, while the latter has the advantage of being flat. Opposite arguments for the superiority of one dimension over the other cancel each other out and make it difficult to predict the rank of order of these two midrange forms.

Hypothesis 3: The interaction of control and organization types influences the performance of private firms. Flat owner-controlled private firms are the most efficient, multilayer agent-led private firms are the least efficient, and the other two combinations are moderately efficient.

Data source and sample

Evaluating a private firm's performance raises two concerns. First, access to information is difficult. Using public information may be misleading because private firms are not subject to the same reporting requirements as public firms and are often known to withhold certain data. Second, published results may be contaminated due to tax considerations. For example, a firm may wish to smooth growth figures in order to reduce current tax liability. In addition, it is problematic to collect primary data since recognizing *a priori* a private

non-listed firm's governance form is very difficult (Daily and Dollinger, 1993).

The data used in this research are an extract from the 1997 survey completed by the Bank of France (the French central bank). These data are free from the above-mentioned perils owing to the purpose for which it was collected and the strict guarantees of confidentiality given by the bank. Each year, econometricians from the Bank of France formulate a representative sample of firms operating in manufacturing industries. The interviews are conducted by Bank of France agents specially trained on survey techniques in face-to-face interviews with CEOs, using a computer-aided questionnaire. For this kind of survey, the top manager is considered the person with the most comprehensive knowledge about the firm and its strategy. The businesses are classified according to the French equivalent of the SIC classification (the NAF). Some criticisms may be leveled at such data sources owing to their cross-sectional nature, the risks of misunderstandings, or problems with the measurement of variables, yet at the same time the importance of PIMS for research in strategy and management is widely recognized among academics and practitioners (Scherer and Ross, 1990). Despite its limitations, the Bank of France data source is representative of the industries concerned and has been used in refereed, academic research (Cool and Henderson, 1998).

The Bank of France allowed us to choose the three industries with the greatest number of cases at the 4-digit NAF code. After elimination of firms with missing information, our final sample comprises 162 private firms: 83 in the printing industry (NAF 222C), 27 in the automotive part industry (NAF 343Z), and 52 in the chemical industry (NAF 244C). The sample is representative of the French industries considered.

Dependent variable: productive efficiency

The study of private firms' performance poses several challenges, particularly with respect to the use of internal accounting measures. Private firms are not inclined to reveal accurate economic performance or, more exactly, they have incentives to minimize their success. Barney (2002: 61–62) notes difficulty in using accounting ratios (like ROA) for intergroup comparisons. Demsetz (1997: 92–109) denounces 'the use and abuse of accounting profit data' and Schulze *et al.* (2001) urge

caution in the use of such measures in the study of privately held companies. In order to surmount these difficulties, the dependent variable for performance used in this study is productive efficiency, which we assess using Data Envelopment Analysis (DEA).

DEA has been used to address a range of issues and research questions in the study of management and related disciplines, including performance benchmarking within a network of retail service outlets, international comparison of manufacturing performance and practices, best practice identification, and the assessment of the impact of technology adoption on firm performance, among others. In the strategy field, DEA has been applied only recently (see, for instance, Majumdar, 1998; Majumdar and Venkataraman, 1998).

The DEA measure of productive efficiency is an estimate of the percentage of theoretically possible outputs obtained from a given level of inputs. The DEA technique uses linear programming to estimate the maximum potential efficiency for various levels of inputs based on each firm's actual inputs and outputs. It then assigns each firm an efficiency score (conventionally termed θ) ranging from 0 to 1 (for the best use of the available inputs). Technical details may be found in Majumdar (1998), Charnes *et al.* (1994), and Seiford (1996).

From the data available in our study, we use four inputs in the estimation of productive efficiency: the total fixed assets, and the expenditures in R&D, marketing, and education. All four variables are 2-year averages (1996–97) expressed in local currency (French francs). The first input is a proxy for the tangible resources available for the firm. The last three deal with more intangible resources (technology, reputation, and knowledge). We use two outputs: gross profits and sales. These outputs are raw variables that have not yet been 'modified' by private firms' management. Gross profits and sales are among the most used indicators of private firms' raw performance (Schulze *et al.*, 2001). Gross profits and sales are 2-year averages (1997–98) and expressed in French francs.

There are two important considerations in applying the DEA technique. First, because productive efficiency is judged relative to other firms in the dataset, DEA is sensitive to sizeable data errors and outliers. We closely checked the data for outliers and found none. Second, in order that the comparison of the data on inputs and outputs among observations be valid, the firms in the

dataset must be reasonably similar. We tested the firms' differences and found no significant differences in terms of age or size. Then we separated the dataset into three according to industry, determining the efficiency scores for firms relative to firms in the same industry.

Independent and control variables

We classify the firms in our study according to responses on two questions from the Bank of France questionnaire: (1) Is the firm owner-controlled? and (2) Do the agents report directly to the owners? The variable *Ownership Control* equals 1 for owner-controlled firms and 0 otherwise. The variable *Organization* equals 1 if there is a flat organization and 0 otherwise.

We included available control variables measuring factors thought to influence productive efficiency: company size, supervision activity, business growth, and risk.² Company size is an indicator of a certain level of productive efficiency, accumulated over a long time. Company size is measured as the logarithm of the average total headcount over the previous 3 years (*Lnsiz*). Supervision presumably has a positive effect on productive efficiency. *Supervision* is measured as the ratio of the total number of managers to the total number of employees. Business growth controls for business effects on a firm's internal processes. Business growth (*growth*) is measured by the 2 previous years average of the sales growth in the business. Efficiency in the use of resources has to be controlled for risk. *Risk* is measured as the standard deviation of returns on assets over 3 years (1996–98).

² We thank the reviewers for their inputs on this section. As θ is an industry adjusted measure of efficiency, there is no need for industry controls.

RESULTS

Out of the 162 companies of the sample, 83 are owner-controlled vs. 79 agent-led firms, while 82 are flat vs. 80 multilayer firms. Combining the two dimensions leads to four subgroups: owner-controlled flat (55 cases), owner-controlled multilayer (28), agent-led flat (27), and agent-led multilayer firms (52). No cell is over-represented and on average no significant differences exist across cells in terms of age or size of the firms.

Table 1 shows the descriptive statistics and the matrix correlation for the sample. In general, correlation coefficients are moderate and do not violate the assumption of independence between explanatory variables. Table 2 presents the results of three analysis of variance models. Models 1 and 2 (ANCOVA models) test the main effects only, ownership control (Model 1) and organization (Model 2). Model 3 (MANCOVA model) tests main effects simultaneously. After adjustment for the covariate effects in the models, the means for θ are: 0.57 for flat owner-controlled firms, 0.79 for multilayer owner-controlled firms, 0.70 for flat agent-led firms, and 0.58 for multilayer agent-led firms.

Results from Model 1 show that owner-controlled firms have a greater productive efficiency than agent-led firms. The *F*-statistic for *Ownership Control* (4.18) is significant ($p < 0.05$), and the means difference between owner-controlled and agent-led firms is positive and significant ($p < 0.05$), giving a preliminary support for Hypothesis 1. Upon analysis of the 2×2 group means differences in Model 3 it appears that the main driver of this relationship is the superiority of multilayer owner-controlled firms relative to multilayer agent-led firms (the between-group difference is positive and significant, $p < 0.001$). However, the

Table 1. Descriptive statistics and Pearson correlations

	<i>N</i> = 162	Mean	S.D.	1	2	3	4	5	6
1	θ (productive efficiency)	0.552	0.253						
2	Ownership Control	0.512	0.501	0.028					
3	Organization	0.494	0.502	0.011	-0.321				
4	Lnsiz	4.722	0.883	0.130	-0.477	-0.083			
5	Supervision	0.132	0.099	0.043	-0.018	-0.140	-0.089		
6	Growth	0.019	0.084	-0.091	-0.150	0.031	0.172	-0.150	
7	Risk	0.233	0.506	0.168	0.237	-0.190	0.385	-0.157	0.161

In bold, significant at 1%.

Table 2. Analysis of variance: productive efficiency of private firms

<i>N</i> = 162	Model 1	Model 2	Model 3
Main effect (univariate <i>F</i>)			
<i>Ownership Control</i>	4.18*		
<i>Organization</i>		0.05	
<i>Ownership Control</i> × <i>Organization</i>			7.49***
Covariate model (standardized estimates)			
<i>Intercept</i>	0.294†	0.280†	0.231†
<i>Lnsiz</i>	0.182†	0.175†	0.195*
<i>Supervision</i>	0.228**	0.215*	0.247**
<i>Growth</i>	-0.173*	-0.177*	-0.163*
<i>Risk</i>	0.342***	0.375***	0.278**
<i>Multivariate F</i>	7.86***	8.21***	6.83***
<i>R</i> ²	20.1%	20.8%	23.6%
Means comparisons (pairwise <i>t</i> -test)			
<i>Ownership control</i>			
Owner-controlled vs. agent-led firms	0.08*		
Flat owner-controlled vs. flat agent-led firms			-0.13†
Multilayer owner-controlled vs. multilayer agent-led firms			0.21***
<i>Organization</i>			
Flat vs. multilayer firms		0.01	
Owner-controlled flat vs. owner-controlled multilayer firms			-0.22***
Agent-led flat vs. agent-led multilayer firms			0.12**
<i>Interaction effects</i>			
Owner-controlled flat vs. agent-led multilayer firms			-0.01
Owner-controlled multilayer vs. agent-led flat firms			0.09†

†*p* < 0.10; **p* < 0.05; ***p* < 0.01; ****p* < 0.001

difference in productive efficiency between owner-controlled flat firms and agent-led flat firms is negative and significant (although weakly, *p* < 0.10), contradicting Hypothesis 1.

On the surface it appears that Hypothesis 2 is not supported. The *F*-statistic from Model 2 (0.05) is not significant. However, Model 3 sheds further light on this result. It appears that owner-controlled flat firms significantly underperform owner-controlled multilayer firms (negative and significant difference with *p* < 0.001 contradicting Hypothesis 2) but that agent-led flat firms perform better than agent-led multilayer firms (with *p* < 0.01 confirming Hypothesis 2). The conjunction of these opposite results explains the nonsignificant coefficient for *Organization* in Model 2.

Hypothesis 3 is not supported. In spite of a significant difference among the types (significant *F*), owner-controlled flat firms and agent-led multilayer firms are not significantly different. Notably, owner-controlled flat firms are not the most efficient. For midrange types, the findings give some support to the relative superiority

of 'control' as against 'organization', since multilayer owner-controlled firms have on average a significantly (*p* < 0.10) higher efficiency than flat agent-led firms.³

Models 1–3 provide information on the covariates contributing to a private firm's productive efficiency. As expected, the size of the company is positively related to its productive efficiency as well as the supervision effort of the firm. Business growth appears to have a negative and statistically significant effect on a firm's productive efficiency. Finally, a higher efficiency is significantly associated with a high variance of returns, i.e., a higher risk.

DISCUSSION

Private owner-controlled firms have been considered to be an extreme case in agency research,

³ For validity check, we tested Model 3 with ROA as a dependent variable and found a similar hierarchy between group means, and similar findings.

where ownership concentration is maximum and for which extant theory applies. In this paper, we argue that private ownership deserves our attention as having potentially a distinct nature, and propose a 2×2 framework for characterizing four broad forms of privately held firms.

On the control dimension, our results support the prediction that the owner-controlled firms are more efficient than agent-led firms, but only where the firm is multilayered. We offer two possible explanations. It may be the case that internal sources of conflict may be more difficult to pacify in owner-controlled flat firms than in agent-led flat firms. In case of conflict, owners have to muddle through the problem among peers without reducing the likelihood of moral hazard due to the capital and labor constraints on private firms. For agent-led firms the chance of resolution might be higher since the agent supposedly has less strong relationships with the owners than in the case of owner-controlled firms. A radical solution is indeed the agent's departure. Second, the negative consequences of altruism at the principal level (i.e., nepotism) may directly diffuse from principal to agents (since these firms have a direct principal-agent relationship). In the case of an indirect relationship, hierarchy might represent a buffer against the diffusion of nepotism—which may to help explain why multilayer owner-controlled firms outperform multilayer agent-led firms.

On the organization dimension, results show that a direct principal-agent relationship significantly improves productivity when comparing agent-led flat firms to agent-led multilayer firms. However, owner-controlled multilayer firms outperform owner-controlled flat firms. We offer two possible explanations of this phenomenon. It may be that owner-controlled flat firms tend to diversify into multidivisional groups so as to preserve the contract completeness at the business level. In a sense, the M-form fragments the sources of uncertainty, and therefore reinforces productivity at the business level (Burton and Obel, 1988). In this case, multilayer firms would correspond to more diversified companies than flat organizations. A second hypothesis would be that owner-controlled multilayer firms are better equipped to deal with incentive problems than simpler, owner-controlled firms. In effect, a more structured organization forces them to develop more elaborate governance

mechanisms.⁴ Unfortunately, due to data limitations, we are unable to offer conclusive evidence for either interpretation.

Finally, concerning the interaction between the two dimensions, multilayer owner-controlled firms appear to be more efficient than flat agent-led firms, indicating a potential predominance of the 'control dimension' over the 'organization dimension' in driving private firms' efficiency. Ownership structure would matter more than organizational structure in explaining a private firm's efficient use of its resources.

The principal limitations of this study concern the use of a secondary data source and data reliability, although we used objective characteristics rather than perceptual data. More variables on the owners' characteristics would have been of interest for this study. Also, this study is built on a relatively small sample, concerning three industries. Therefore, the results obtained here should be extended with caution to other industries. Finally, the study deals with French data, and national context may influence the application of agency-based models.

From an empirical standpoint, the study provides a definition and an operationalization of a private firm's productive efficiency relative to a firm's comparable competitors. DEA is used as an appropriate technique to calculate the productivity of firms in utilizing the available resources for yielding two outputs: gross profits and sales. This results in a different indicator from previous empirical agency studies that focused on accounting ratios and performance—ill suited for the study of private firms' performance—rather than on internal productive efficiency as a dependent variable. In general, it is noteworthy that in strategic management research there are few cross-company comparisons of intrafirm allocations of resources (Majumdar, 1998). With others, we believe that cross-company comparisons and paired-sample studies should be systematically preferred and undertaken while providing empirical tests of agency research.

⁴ Schulze *et al.* (2001) hypothesized and showed, using a cluster analysis and family firms, that there may be two types of owner-controlled firms: 'one that recognizes the need to adopt the kind of internal governance mechanisms used by successful, widely held firms to compensate for the agency that they face, and another that does not.' The former type might coincide with owner-controlled multilayer firms and the latter with owner-controlled flat firms.

CONCLUSION

Our study bridges a gap between financial and strategic management perspectives on agency and performance. Scholars have argued that the agency model explains firm behaviors and performance (Amihud and Lev, 1981, 1999), while others have demonstrated that in the absence of conflict between owners and managers agency relationships have little influence on firm decisions (Lane *et al.*, 1998, 1999). We used an agency-based theory to predict private firm efficiency, but our results show the weak predictability incumbent to these hypotheses. We emphasized how the nature of private firms differs from public firms. These results induce us to consider the limitations of the agency perspective in predicting private firm efficiency and suggest the need to develop more appropriate theories. Finally, this study is an advance in a promising field of research, the study of private firms' governance conditions and agency problems. Further research is needed to confirm our preliminary results and characterize private firms' particular productivity enhancers and impediments, such as the partial gift phenomenon suggested by Akerlof (1982), relational contracting (Gomez-Mejia *et al.*, 2001), and altruism (Schulze *et al.*, 2001). Agency problems in private firms merit separate consideration by researchers not only because these firms represent more than half of the annual GDP creation in most developed countries but also owing to their unique governance characteristics.

ACKNOWLEDGEMENTS

We would like to deeply acknowledge Michael Lubatkin's patience and consideration in helping us make progress in this research. We also thank the two anonymous reviewers for their comments and empirical suggestions.

REFERENCES

- Akerlof G. 1982. Labor contracts as partial gift exchange. *Quarterly Journal of Economics* **47**(4): 543–569.
- Alchian A, Woodward S. 1988. Reflections on the theory of the firm. *Journal of Institutional and Theoretical Economics* **143**: 110–136.
- Amihud Y, Lev B. 1981. Risk reduction as a managerial motive for conglomerate mergers. *Bell Journal of Economics* **12**: 605–617.
- Amihud Y, Lev B. 1999. Does the corporate ownership structure affect its strategy toward diversification? *Strategic Management Journal* **20**(11): 1063–1069.
- Barney JB. 2002. *Gaining and Sustaining Competitive Advantage*. Prentice-Hall: Englewood Cliffs, NJ.
- Besanko D, Dranove D, Shanley M. 1996. *Economics of Strategy*. Wiley: New York.
- Burton RM, Obel B. 1988. Opportunism, incentives, and the M-Form hypothesis: a laboratory study. *Journal of Economic Behavior and Organization* **10**: 99–119.
- Charnes A, Cooper W, Lewin A, Seiford L. 1994. *Data Envelopment Analysis: Theory, Methodology and Applications*, Kluwer: Boston, MA.
- Cool K, Henderson J. 1998. Power and firm profitability in supply chains: French manufacturing industry in 1993. *Strategic Management Journal* **19**(10): 909–926.
- Daily CM, Dollinger MJ. 1993. Alternative methods for identifying family vs. non-family managed small businesses. *Journal of Small Business Management* **31**(2): 79–90.
- Demsetz H. 1997. *The Economics of the Business Firm*. Cambridge University Press: Cambridge, U.K.
- Fama EF, Jensen MC. 1983. Separation of ownership and control. *Journal of Law and Economics* **26**: 301–325.
- Geeraerts G. 1984. The effects of ownership on the organization structure in small firms. *Administrative Science Quarterly* **29**: 232–237.
- Gersick KE, Davis JA, Hampton MM, Lansberg I. 1997. *Generation to Generation: Life Cycles of the Family Business*. Harvard Business School Press: Boston, MA.
- Gomez-Mejia LR, Nunez-Nickel M, Gutierrez I. 2001. The role of family ties in agency contracts. *Academy of Management Journal* **44**(1): 81–96.
- Heck RKZ, Walker R. 1993. Family-owned home businesses: their employees and unpaid helpers. *Family Business Review* **6**(4): 397–415.
- Jensen MC. 1983. Separation of ownership and control. *Journal of Law and Economics* **26**: 301–325.
- Jensen MC. 1998. Self-interest, altruism, incentives, and agency. In *Foundations of Organizational Strategy*, Jensen MC (ed.). Harvard University Press: Cambridge, MA.
- Jensen MC, Meckling WC. 1976. Theory of the firm: managerial behavior, agency costs, and ownership structure. *Journal of Finance Analysis* **3**: 305–360.
- Jensen MC, Meckling WC. 1995. Specific and general knowledge and organizational structure. *Journal of Applied Corporate Finance* **8**(2): 4–18.
- Lane PJ, Cannella A, Lubatkin M. 1998. Agency problems as antecedents to unrelated diversification: Amihud and Lev reconsidered. *Strategic Management Journal* **19**(6): 555–578.
- Lane PJ, Cannella A, Lubatkin M. 1999. Ownership structure and corporate strategy: one question viewed from two different worlds. *Strategic Management Journal* **20**(11): 1077–1086.
- La Porta R, Lopez-de-Salanes F, Shleifer A. 1999. Corporate ownership around the world. *Journal of Finance* **54**(2): 471–517.

- Litz RA. 1995. The family business: toward definitional clarity. *Proceedings of the Academy of Management* 100–104.
- Majumdar S. 1998. On the utilization of resources: perspectives from the U.S. telecommunication industry. *Strategic Management Journal* 19(9): 809–831.
- Majumdar SK, Venkataraman S. 1998. Network effects and the adoption of new technology: evidence from the U.S. telecommunications industry. *Strategic Management Journal* 19(11): 1045–1062.
- Milgrom P, Roberts J. 1992. *Economics, Organization, and Management*. Prentice-Hall: Englewood Cliffs, NJ.
- O'Donnell SW. 2000. Managing foreign subsidiaries: agents of headquarters, or an interdependent network? *Strategic Management Journal* 21(5): 525–548.
- Ouchi WG. 1980. Markets, bureaucracies, and clans. *Administrative Science Quarterly* 25: 129–141.
- Pagano M, Roell A. 1998. The choice of stock ownership structure: agency costs, monitoring and the decision to go public. *Quarterly Journal of Economics* 113: 187–225.
- Scherer FM, Ross D. 1990. *Industrial Market Structure and Economic Performance*. Houghton Mifflin: Boston, MA.
- Schulze W, Lubatkin M, Dino R, Buchholtz A. 2001. Agency relationships in family firms: theory and evidence. *Organization Science* 12(2): 99–116.
- Seiford LM. 1996. Data envelopment analysis: the evolution of the state of the art (1978–1995). *Journal of Productivity Analysis* 7(2–3): 99–137.
- Simon H. 1996. *The Hidden Champions: Lessons from 500 of the World Best Unknown Companies*. Harvard Business School Press: Boston, MA.
- Singell LD, Thornton J. 1997. Nepotism, discrimination, and the persistence of utility-maximizing, owner-operated firms. *Southern Economic Journal* 63: 904–919.
- Tirole J. 1986. Hierarchies and bureaucracies: on the role of collusion in organizations. *Journal of Law Economics and Organization* 2: 181–214.
- Williams RO. 1992. Successful ownership in business families. *Family Business Review* 5(2): 161–172.
- Williamson O. 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. Free Press: New York.
- Williamson O. 1985. *The Economic Institutions of Capitalism*. Free Press: New York.
- Williamson O, Wachter M, Harris J. 1975. Understanding the employment relation: the analysis of idiosyncratic exchange. *Bell Journal of Economics* 6: 250–280.

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