Understanding the effects of ownership upon organizational performance is a well-established theme in organization theory, but comparison across ownership forms has been neglected. We develop hypotheses comparing public corporations, private corporations and partnerships and test them in a sample of large management consultancies. We find that private corporations and partnerships outperform public corporations. We attribute this difference to increased monitoring by owners and greater motivation by professional workers seeking ownership stakes. Contrary to Durand and Vargas (2003), we find that organizational complexity has neither a direct nor a moderating effect.

**Keywords:** organizational performance, ownership, professional service firms

An established research theme within organization theory seeks to understand how ownership arrangements affect organizational behaviours. Ever since publication of Berle and Means’ *The Modern Corporation and Private Property* (1932), researchers have addressed the effects of ownership but have focused upon one ownership form: the public corporation (Mascarenhas, 1989). Elaboration of how public corporations are governed is important because they are pivotal instruments within the modern economy. Recently, however, the need to compare alternative ownership forms has been raised. Schulze et al. (2001) address ownership in family businesses. Durand and Vargas (2003) found evidence from French manufacturing firms that owner-manager private firms are more efficient than private firms where owners do not manage. Greenwood and Empson (2003) analyze why partnership forms of ownership might be particularly effective for the delivery of professional services. Peng et al. (2004) show that state-owned enterprises were surprisingly successful when exposed to competition. Taken together, these studies underline Kang and Sorensen’s criticism (1999: 12) that, although ownership is ‘a critical organizational variable in determining firm outcomes’, it has received insufficient empirical attention.

This paper explores the effects of ownership upon professional service firms. Specifically, we compare the effects of three forms of ownership used in the largest management consulting firms. The paper is particularly motivated by two recent studies: Greenwood and Empson (2003), who theorize that internally owned professional service firms (i.e. partnerships and private corporations) will outperform publicly traded firms, under specific circumstances; and
Durand and Vargas (2003), who specify what those circumstances might be. Although we focus upon management consulting firms, the discussion has wider significance because such firms are examples of knowledge-intensive firms (e.g. Scott, 1998; Lowendahl, 2000; Robertson et al., 2003; Werr and Stjernberg, 2003).

We make two contributions to understanding the relationship between ownership and performance. First, we separate and examine the effects of two dimensions of ownership: locus of ownership and scope of ownership liability. We show that locus of ownership affects performance: specifically, private firms and partnerships outperform public corporations. However, scope of ownership liability does not affect performance: partnerships (characterized by high liability) do not outperform private corporations. Second, we examine the Durand and Vargas (2003) thesis that ownership effects may be moderated by organizational complexity. We find no support for the moderating effects of complexity. These results support the predictive power of agency theory and the need for a contingency theory of ownership and governance.

The paper is arranged into three sections. The next section reviews the literature and develops hypotheses associating ownership with performance. A subsequent section outlines the methods and results of a multi-year analysis of the largest firms in the management consulting industry. The final section reflects on the implication of these findings for theory and research.

Theory

There is a long-established research theme in organization theory that seeks to understand how ownership and governance arrangements work. The separation of research into ‘public administration’ and ‘business studies’ reflects an early and continuing assumption that the basic distinction between public and for-profit ownership affects how organizations function (e.g. Rainey et al., 1976; Perry and Rainey, 1988). Similarly, in the 1960s and 1970s the ‘Aston studies’, one of the major programmes of research within organization theory, explicitly included ownership as a possible determinant of organizational structures and processes and thus of performance (Pugh et al., 1968). In these and other studies of the period there was clear recognition that alternative forms of ownership exist that might be significant for how organizations perform. In a few sectors, the tradition continues. For example, there is sustained interest in differences between for- and not-for-profit enterprises (e.g. Goodrick and Salancik, 1996; Greve, 1996; D’Aunno et al., 2000; Peng et al. 2004). But in the broader field of organization theory, ownership has largely converged on the more visible limited liability public corporation (Mascarenhas, 1989). Moreover, the central question is narrowly drawn, especially in North American studies: how to align the interests of shareholders and managers so as to advance the property rights of the former (e.g. see Daily et al., 2003).

Elaboration of how investor-owned public corporations are governed and function is important. Jensen and Meckling (1976: 357) refer to this organizational form as ‘an awesome social invention’. Micklethwait and Wooldridge
applaud it as ‘the basis of the prosperity of the West and the best hope for the future of the rest of the world’. Even those critical of the corporation (e.g. Perrow, 2002) respect its significance. Nevertheless, other forms of ownership deserve attention because of their potential relevance for particular sectors of the economy.

Alternatives to the public corporation

The limited liability, joint-stock corporation (the public corporation) is not the oldest form of enterprise (Roy, 1997) nor the most widely used (Pringle and Harris, 1987; Schulze et al., 2003). It is, however, the ‘dominant form of organization in large-scale enterprise’ in market economies (Hansmann, 1996: 53). Yet, even large enterprises use a variety of ownership formats. Privately held corporations constitute a significant proportion of the Fortune 1000 (Miller and Le Breton-Miller, 2003). Partnerships (employee-owned firms) are widely used for the delivery of professional and financial services (Wilhelm and Downing, 2001; Pinnington and Morris, 2002; Greenwood and Empson, 2003). Cooperatives, though less common, are not unknown (Simons and Ingram, 1997). Hybrid public–private arrangements are commonly found in emerging economies (Tan, 2002; Peng et al., 2004). These studies highlight that alternatives to the public corporation exist, often in the same industry.

Our interest is with the effect of alternative forms of ownership upon the delivery of professional services. Professional service firms (such as law, accounting, architectural and consulting firms) are becoming ‘ever more prominent in economies the world over’ (Delong and Nanda, 2003: ix). Large law firms broker complex commercial activities and help establish and then interpret the rules of the game of the capital market system. Consulting firms are carriers of ideas about management and influence how corporations are managed. Accounting firms underpin the integrity of the financial markets. Not surprisingly, Sharma (1997: 758) concludes that without professional service firms ‘business as we know it would come to a grinding halt’.

Professional service firms are often proposed as models or ‘exemplars’ for the knowledge-intensive firms of the ‘new’ economy (Lowendahl, 2000). Alvesson (2000: 1101) defines knowledge-intensive firms as organizations where ‘most work can be said to be of an intellectual nature and where well-educated, qualified employees form the major part of the workforce’. Alvesson (2000) distinguishes ‘high technology firms’, which encode knowledge in products and technology, from ‘pure’ knowledge firms, i.e. professional service firms, that deliver intangible services customized for each client. The same distinction is found in Lowendahl (2000), Scott (1998) and Lorsch and Tierney (2002). Professional service firms, in short, are distinguished by their customization of knowledge to meet client circumstances and their highly educated workforce.

Greenwood and Empson (2003) propose that a critical variable in the success of professional service firms derives from their choice of ownership structure. They outline why partnership forms of ownership are more appropriate than public corporations. This paper tests this basic proposition. We compare three types of ownership: the limited-liability joint stock corporation (the public corporation)
where shares are widely held by external owners; the limited-liability private
corporation, where equity shares are not traded but held by owners actively partic-
ipating in management of the firm; and partnerships, in which ‘Two or more per-
sons . . . share risks and profits . . . [and are] . . . liable for the debts and business
actions of the others, to the full extent of their own resources’ (Bannock and
Manser, 1989: 158). These ownership formats are differentiated by their locus of
ownership (whether internal or external) and by the scope of ownership liability
(whether broad or narrow).

Ownership and performance

The proposition that locus of ownership matters can be traced to Adam Smith
who asserted that firms characterized by the separation of ownership and con-
trol will underperform firms with no such separation because owners are more
motivated than managers to avoid inefficiencies in the use of resources and to
optimize their productive use. Agency theory refers to this problem as ‘shir-
k ing’. Agency theory adds to this risk of shirking the possibility of opportunistic
behaviour, whereby managers (agents) deliberately serve their own interests
rather than those of owners (principals) unless constrained from doing so (e.g.
Fama and Jensen, 1983). Attempts by shareholders to prevent agents acting
opportunistically incur ‘external’ agency costs (Greenwood and Empson, 2003:
913). These costs apply to the public corporation but not to owner-managed
private corporations or partnerships. Therefore, other things being equal, the
public corporation will underperform other forms of ownership. Even where
shareholder ownership is relatively concentrated, as in Germany and Japan, the

Greenwood and Empson (2003) offer other reasons for expecting internally
owned professional service firms to outperform those that are publicly traded.
First, ownership can affect the motivation of a professional workforce. Specifi-
cally, professional service firms organized as partnerships frequently use
an ‘up-or-out’ career structure in which junior professionals compete for admi-
sion to partnership (Gilson and Mnookin, 1989; Galanter and Palay, 1991;
Morris and Pinnington, 1998). Although we are here referring to ‘partners’ and
‘partnership’, private corporations operate in a similar fashion, in that there is a
broad category of internal owners to which junior consultants aspire. Indeed,
consultancies organized as private corporations frequently retain use of the
terms partner and partnership, even though, legally, it is inappropriate to do so
(e.g. Vault, 2002). Partnership is highly valued by professionals because it
provides three benefits: significantly higher compensation, the right to partici-
pate in decision-making and high status (Greenwood and Empson, 2003)\(^2\).
However, only a minority of junior professionals are admitted to the rank of
partner with the remainder typically leaving the firm (e.g. see Morris and
Pinnington, 1998). Consequently, the ‘up-or-out’ career system has the charac-
teristic features of the ‘tournament’ system of motivation (Becker and Huselid,
1992; Lambert et al., 1993; Main et al., 1993), which is associated with supe-
rior effort and productivity in professional service firms (Gilson and Mnookin,
1989; Galanter and Palay, 1991; Wallace, 1997; Stracher, 1998). Only the
partnership and the private corporation can use the ‘up-or-out’ progression to ownership and harness the superior productivity that it generates. Hence, these ownership formats have a ‘motivational advantage’ over the public corporation in the professional service sector (Greenwood and Empson, 2003: 918).

The advantages of the internally owned and controlled firm may be partly offset by the discipline of market accountability (Tan, 2002). Externally owned firms are sensitive to public scrutiny and are more likely to evolve formal systems of goals and accountability that contribute to clarity of strategic direction and goal attainment. Moreover, internally owned firms have disadvantages. Durand and Vargas (2003: 673) note that privately owned companies may suffer internal conflict and thus be difficult to manage. They also point out that private firms may exhibit more nepotism and thus have a lower standard of managerial competence. Hansmann (1996: 40) points to the ‘costs of collective decision making’ incurred by private firms with large numbers of owners. Greenwood and Empson (2003) acknowledge that larger partnerships and private corporations delegate responsibility for management to a small group of owners/partners whose interests might not fully coincide with the full partnership. Partnerships and private firms thus bear internal agency costs of aligning the actions of those managing the firm with the ownership group as a whole.

Table 1 summarizes the effects of locus of ownership.

On balance, Greenwood and Empson propose that internal agency costs ‘are unlikely to be as severe as the external agency costs incurred by the public corporation’ (2003: 916). They point out that partners are usually more knowledgeable about their firm than are shareholders of corporations (see also Hansmann, 1996) and have more opportunities to exercise influence. Thus, and following Greenwood and Empson (2003):

\textbf{Hypothesis 1}: Professional service firms organized as public corporations will have lower performance than those organized as either private corporations or professional partnerships because they incur higher agency costs and have motivational disadvantages.

Locus of ownership (i.e. the separation of ownership and control) distinguishes the public corporation from both the private corporation and the partnership. Scope of owners’ liability differentiates the private corporation from the partnership. The history of the public corporation is a narrowing of shareholder liability (Roy, 1997; Perrow, 2002; Micklethwait and Wooldridge, 2003). Until the 19th century, investors were extensively liable for losses incurred by corporations. Later, legislation restricted an owner’s liabilities to

<table>
<thead>
<tr>
<th>Costs</th>
<th>Public Corporation</th>
<th>Private Corporation/Partnership</th>
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<tbody>
<tr>
<td>• external agency costs</td>
<td>• internal agency costs</td>
<td></td>
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<tr>
<td>Benefits</td>
<td>• market discipline</td>
<td>• collective decision costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• internal conflict</td>
</tr>
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<td></td>
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<td>• motivated workforce</td>
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<td></td>
<td></td>
<td>• knowledgeable owner with</td>
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<td></td>
<td></td>
<td>opportunities for influence</td>
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Table 1: Comparison of Effects of Locus of Ownership in Professional Services
the sum total of his/her investments in the company, protecting all other assets from the claims of debtors. This restriction of the scope of an owner’s liability still applies equally to the public and the private corporation. In contrast, partnership forms of ownership have a wider liability. Specifically, the personal assets of partners (as owners) are not excluded from liability. That is, their personal assets are at risk in addition to their investments in the firm. Further, improprieties or acts of incompetence that lead to legal redress affect all partners, not simply those acting improperly or incompetently. In Hansmann and Kraakman’s terms (2000), there is no ‘asset partitioning’ between personal and corporate assets. Limited liability partnerships (LLPs) narrow the scope of liability somewhat, in that a partner’s personal assets are exposed only if s/he is directly involved in a claim against the firm, but even here the scope of liability is wider than that applied to private or public corporations where personal assets are fully protected.

The private corporation and partnership thus differ in the scope to which owners are liable for claims against the firm. This difference, we propose, will affect performance, for two reasons. First, a wider scope of liability will make partners especially vigilant in the use of resources. That is, our proposition is that a wider scope of liability amplifies the motivation for partners to husband resources efficiently, leading to higher performance. Greenwood and Empson (2003) offer a second reason why partnerships might outperform private corporations. They suggest that a distinctive feature of professional service firms is the asymmetry of knowledge between client and professional (Sharma, 1997). Clients find it difficult to assess the comparative merits of professional service firms and resort to using social signals, such as reputation or status, as means of assessing competence and trustworthiness. Greenwood and Empson (2003: 920–1) make the case that the partnership format itself is a signal of quality because clients believe them to be less driven by commercial motives and more committed to serving clients’ interests. Partnerships generally, therefore, enjoy high reputations that provide three benefits: marketing costs are lower, because clients gravitate to firms with high reputations (Deephouse, 2000); hiring costs are lower, because recruits are attracted to the firm (Podolny, 1993); and competitive barriers are higher (thus allowing firms to charge premium prices) because clients select only from reputable firms in order to signal their own legitimacy and status (Galaskiewicz, 1985).

These arguments lead to the following hypothesis:

**Hypothesis 2**: Professional service firms organized as partnerships will have higher performance than private corporations because the wider scope of their owners’ liability encourages greater vigilance and provides reputational advantages.

Underlying Hypotheses 1 and 2 is that owners are motivated to exercise control in order to promote their interests. But, as Durand and Vargas (2003) point out, the ability to exercise control is also important:

The more bureaucratized a firm, the higher the chances are that agents will exploit complexity and engage in logrolling. . . . 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. (2003: 669, emphasis added)
In other words, Durand and Vargas are proposing that organizational complexity renders personal supervision more difficult, increasing the risks of opportunistic behaviour by employees. Durand and Vargas define complexity as the existence of intermediate levels in the firm’s hierarchy. Levels in the hierarchy separate owners from lower-level agents. Durand and Vargas propose that personal proximity between owners and agents enables effective supervision and lowers the likelihood of shirking and opportunistic behaviour. We suggest that the same logic applies to other features of organizational structure, such as geographical dispersion or differentiation (Lawrence and Lorsch, 1967). In situations where an organization is geographically dispersed, as in professional service firms operating through multiple local offices, it is more difficult for owners to directly supervise agents’ actions. Agents might work less intensively, free from the scrutiny of distant owners. Locally situated agents may also appeal to local circumstances to justify decisions that owners might otherwise not countenance. That is, geographical dispersion contributes to organizational complexity in the same way as do increases in numbers of hierarchical levels (Pugh et al., 1968). Thus, and following Durand and Vargas (2003):

**Hypothesis 3**: Professional service firms with geographically complex organizational structures will have lower performance than those with geographically non-complex structures, irrespective of ownership, because of the higher risk of opportunistic behaviour or shirking by non-partners.

Durand and Vargas (2003) also examined whether organizational complexity interacts with ownership. Specifically, Durand and Vargas (2003) combined locus of ownership (i.e. owner-controlled versus publicly traded) with organizational complexity (flat v. multi-layer) to yield four possibilities: ‘owner-controlled, flat’ organizations; ‘owner-controlled, multi-layer’ organizations; ‘agent-led, flat’ organizations; and ‘agent-led, multi-layer’ organizations. They proposed that owner-controlled flat (i.e. non-complex) organizations would be the higher performers because owners would have the motivation and the capability to direct agents’ behaviours to serve their interests. Durand and Vargas further specified that agent-led, multi-layer (i.e. complex) organizations would be the lowest performers. They saw no distinction between owner-controlled, multi-layer (complex) firms and agent-led, flat (non-complex) firms: ‘Opposite arguments for the superiority of one dimension over the other cancel each other out’ (2003: 669).

In fact, Durand and Vargas found no empirical support for their formulation. Analysis of 162 private corporations in the French printing, automotive and chemical industries indicated no differences between owner-controlled flat firms and agent-led multi-layer firms. Moreover, there were unanticipated differences between the two intermediate positions: owner-controlled multi-layer (complex) firms performed better than agent-led flat firms. Despite these results, we are reluctant to reject the Durand and Vargas thesis, for three reasons. First, it is theoretically compelling and thus warrants further empirical examination. Indeed, Durand and Vargas (2003: 673) explicitly call for further empirical work in different settings. Second, our setting is human-asset intensive and the importance of owners’ monitoring capability may thus be enhanced.
Relatedly, capital-intensive firms, such as those examined by Durand and Vargas, may be less affected in the short term whereas weak motivation or inappropriate effort in professional service firms can quickly trigger adverse consequences (e.g. loss of clients). Third, we intend to use a statistical procedure more sensitive to the interaction effects of ownership and complexity (see below, under methods). Thus, following Durand and Vargas (2003):

**Hypothesis 4:** The interaction of locus of ownership and organizational design affects performance. Professional service firms that are privately owned and have geographically non-complex structures will have the highest performance; publicly traded professional service firms that have geographically complex structures will have the lowest performance; other forms will have intermediate levels of performance.

**Methods**

**Sample and Data Sources**

Kang and Sorensen (1999) suggest that the effectiveness of ownership structures likely varies by industry characteristics. Therefore, we chose a single industry, management consulting, in order to remove any industry effects (Dess et al., 1990). We selected the management consulting industry because two primary types of ownership are widely used: ‘investor-owned’ and ‘employee-owned’ (Hansmann, 1996). The industry contains two variants of employee-owned organizations: private corporations and partnerships. The size of the global industry has been estimated at approximately $114 billion in 2000 (Kennedy Information, 2001). Statistics on the number of consulting firms are difficult to obtain because of the large number of sole practitioners, but it is widely accepted that the industry is bifurcated between a small number of very large firms and a large number of very small firms. Our analysis is restricted to the largest firms in each year from 1995 to 2001. These firms hold approximately 47% of total global industry revenues.

Our data are taken from the leading practitioner publications: *Consultants News* and *Management Consulting International*. These publications list the top 50 consulting firms worldwide, as defined by total revenues, from 1997 to 2001, and the top 40 for 1995 and 1996. The reliability of these statistics was enhanced using three procedures. First, published statistics for publicly traded corporations were verified from their annual reports. Second, we carried out a random check of the data for partnerships and private corporations by contacting firms directly. Although firms were reluctant to divulge revenue breakdowns, they did confirm numbers of global professionals and their ownership status at the time of our inquiry. Third, we drew upon interviews with senior partners in nine firms – 3 publicly traded, 3 partnerships and 3 private corporations – to develop our understanding of the industry, the nature and appropriateness of our data sources, and the validity of our measures. These firms were either national or international firms. We interviewed the CEO (or the head of the national subsidiary if it was an international firm), the head of a department or ‘service line’ and a senior consultant in each firm. All respondents were members of the
national (or international) executive committee/management team, had been with the firm for a minimum of ten years and in the management consulting industry for at least 15 years. As such, they were informed and experienced respondents.

We paid special attention to verifying the governance format of firms across years. Following previous research, firms were classified as public if their shares were traded on a stock exchange (Geeraerts, 1984; Mascarenhas, 1989). Publicly traded firms were identified through Moody’s. The status of the majority of private corporations and partnerships was initially obtained from Consultants News and Management Consulting International. We also consulted firms’ websites and printed media (especially The Wall Street Journal). It is worth noting that private corporations in the consulting industry are owned by active not retired consultants, unlike private corporations such as investment banks where all owners are not necessarily active within the firm. Some firms were contacted directly to request relevant information or verification. The distribution of the three ownership formats for the period 1995 to 2001 is given in Table 2. Interestingly, the proportion of consultancies organized as public corporations has steadily increased over the period covered.

### Variables

Private corporations and partnerships are not obliged to publish accounting measures of performance and rarely do so. Instead, we follow past studies of professional service firms and use total revenues per professional, a measure of productivity, as our dependent variable (Nanda, 2004). According to our interviews and industry analysts (Maister, 1993), this measure is a commonly used metric in this industry (e.g. Consultants News, 2004). Because professionals are the key input in PSFs (Nanda, 2004), this measure is also similar to ‘productive efficiency’, the ratio of inputs to outputs, used by Durand and Vargas (2003: 670). In a study of the top 100 law firms over 6 years, Nanda (2004) reported an adjusted $R$ of 0.86 in a single variable regression of logged productivity on logged profitability. Furthermore, we found a correlation of 0.86 between revenues per professional (productivity) and net profitability per professional

<table>
<thead>
<tr>
<th>Year</th>
<th>Partnership</th>
<th></th>
<th>Private</th>
<th></th>
<th>Public</th>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td>no. (%)</td>
<td>---</td>
<td>no. (%)</td>
<td>---</td>
<td>no. (%)</td>
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</tr>
<tr>
<td>1995</td>
<td>14 (36)</td>
<td>---</td>
<td>14 (36)</td>
<td>---</td>
<td>11 (28)</td>
<td>---</td>
</tr>
<tr>
<td>1996</td>
<td>12 (32)</td>
<td>---</td>
<td>15 (41)</td>
<td>---</td>
<td>10 (27)</td>
<td>---</td>
</tr>
<tr>
<td>1997</td>
<td>10 (20)</td>
<td>---</td>
<td>15 (30)</td>
<td>---</td>
<td>25 (50)</td>
<td>---</td>
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<tr>
<td>1998</td>
<td>10 (20)</td>
<td>---</td>
<td>14 (28)</td>
<td>---</td>
<td>26 (52)</td>
<td>---</td>
</tr>
<tr>
<td>1999</td>
<td>10 (20)</td>
<td>---</td>
<td>13 (26)</td>
<td>---</td>
<td>27 (54)</td>
<td>---</td>
</tr>
<tr>
<td>2000</td>
<td>8 (16)</td>
<td>---</td>
<td>13 (26)</td>
<td>---</td>
<td>29 (58)</td>
<td>---</td>
</tr>
<tr>
<td>2001</td>
<td>8 (16)</td>
<td>---</td>
<td>11 (22)</td>
<td>---</td>
<td>31 (62)</td>
<td>---</td>
</tr>
</tbody>
</table>

Table 2: Forms of Ownership in the Management Consulting Industry, 1995–2001
(profitability) as disclosed in public financial statements in the sub-sample of 29 publicly traded consultancies in, 2000. Thus, we conclude that productivity is a reasonable proxy for performance in professional service firms.

We created two dummy variables as independent variables to indicate governance format. The dummy variable, Private Firm (Partnership Firm), is coded as 1 if the firm was governed as a private (partnership) firm and 0 otherwise. We used the total number of global offices to indicate geographical complexity.

**Controls** We used the total global revenues of all the firms in our data set in the current year, as one control variable. This control variable, Total Revenues of Largest Firms, serves two purposes. First, it controls for year-specific heterogeneity because it was a constant for a given year. Second, it indicates resource munificence in the industry. As noted earlier, by choosing a single industry, we control for industry effects. Following Pennings et al., (1998), we also included a firm age indicator, denoted as Birth Year of Firm. We controlled for firm size by using the logarithm of the number of global professionals, denoted as No. of Global Professionals (logged). A dummy variable, denoted as US Firm, was coded as 1 when the given firm’s major business was situated in the USA and 0 otherwise. We replaced this dummy variable by two other dummies, respectively, to indicate: (a) whether a firm’s major business was from the USA and/or the UK; and (b) whether a firm’s major businesses were from one or more of the following English-speaking countries: USA, UK, Canada and Australia. Analysis results were robust when we used these two dummies, respectively.

**Analytical model**

Most of the largest consulting firms remain in our data across different years; therefore, the data have a time-series structure with each consulting firm as a panel that maximally spans seven years. This type of data structure raises the complexity of the non-independence of error terms, i.e. the error terms of a given firm will commonly correlate with each other across years. The heteroscedasticity in error terms violates one basic assumption for OLS regression. Therefore, we use the following model to perform panel data analyses:

\[ y_{it} = \alpha + x_{it}\beta + v_i + \epsilon_{it} \]

where \( x_{it} \) is a row vector of explanatory variables, \( v_i \) is the firm-specific residual, and \( \epsilon_{it} \) is a standard residual (mean zero, homoskedastic, uncorrelated with itself, \( v_i \) and the \( x \) matrix).

The above equation could be analyzed by the fixed-effects model or the random-effects model. There is no fixed rule in the econometrics literature on the choice between these two models (cf. Hausman, 1978). We use the random-effects model for two reasons. First, to the best of our knowledge there was no significant transient event during 1995–2001, such as changes in regulative regimes or the bankruptcy of a prominent firm, that disrupted the industry. In other words, during the seven years (1995–2001) of our study firms were not influenced by exogenous shocks such that an average firm in 1995–2001 would differ significantly from the same firm in other time periods. Therefore, it is
plausible to treat this time period as a randomly drawn sample from a population spanning a relatively long period of time (Hsiao, 1996).

Second, Hsiao (1996) suggests that a major consideration in choosing between the fixed-effects and random-effects models is the objective of the study. The fixed-effects procedure is most suitable when the focal interest centres on the outcome of an individual unit. Our theoretical arguments fundamentally centre on between-firm variance, rather than within-firm variation across years. Therefore, and consistent with other scholars who followed Hsiao’s suggestion (e.g. Kraatz and Zajac, 2001), we use the random-effects model to handle our panel data analysis. Because the random-effects model splits the residual of each observation into a firm-specific residual (i.e. $v_i$) and the ‘usual’ residual (i.e. $\varepsilon_{it}$), such a model allows for firm specific variation across years and, as a result, implicitly controls for firm effects. We chose the commonly used GLS estimation routine to perform the random-effects model analyses of panel data (Stata Corporation, 2001).

Although our third and fourth hypotheses and independent variables correspond to those in Durand and Vargas (2003), we use a different analytical technique. Durand and Vargas’ analysis had two independent dummy variables: ownership control and organization. They used two ANCOVA models to test the two main effects of their independent variables: (1) that owner-controlled firms are more profitable than agent-led firms; (2) that flat firms are more profitable than multi-layer firms. However, in each ANCOVA test they entered one independent variable only, without entering them simultaneously. Their procedure is equivalent to the situation in which independent variables are entered one at a time in a multivariate regression analysis, but never together in a single analysis. Therefore, we cannot conclude that the two main effects work simultaneously or whether one offsets the other. In addition, when testing their interaction, Durand and Vargas used MANCOVA on a model that did not include the main effects. We use a technique specifically designed for testing interactions: moderated regression (Baron and Kenny, 1986; Aiken and West, 1991). The use of this technique would give greater confidence in the results and interpretations thereof.

**Results**

Table 3 reports the descriptive statistics and bivariate correlation matrix for all variables used in our analysis. We considered the potential for multicollinearity using Variance Inflation Factors (VIF). There was no evidence of a collinearity problem because the largest VIF was below the critical value of 10 (Neter et al., 1990).

Table 4 reports the results of our GLS analyses. Model 1, which includes all the control variables, presents the first stage of our hierarchical analysis. The coefficient of Total Revenues of Largest Firms is positive and significant ($p < 0.05$). The control variable, No. of Global Professionals (logged), is negatively related to the dependent variable ($p < 0.001$), indicating that firms with more global professionals achieve lower firm productivity. The coefficient for US
Table 3: Summary Statistics and Bivariate Correlations of Variables

<table>
<thead>
<tr>
<th>Variable Description</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Global Revenue per Professional ($ billion)</td>
<td>208.54</td>
<td>147.50</td>
<td>12.45</td>
<td>2140.80</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2 Total Revenues of Largest Firms ($ billion)</td>
<td>59.47</td>
<td>22.51</td>
<td>20.63</td>
<td>85.31</td>
<td>0.013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 No. of Global Professionals (logged)</td>
<td>8.11</td>
<td>1.25</td>
<td>3.91</td>
<td>11.29</td>
<td>-0.35**</td>
<td>0.17*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 US Firm</td>
<td>0.75</td>
<td>0.43</td>
<td>0</td>
<td>1</td>
<td>0.07</td>
<td>-0.13</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Birth Year of Firm</td>
<td>1962.83</td>
<td>25.41</td>
<td>1886</td>
<td>2001</td>
<td>-0.15*</td>
<td>0.14*</td>
<td>-0.06</td>
<td>-0.02</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Private Firm</td>
<td>0.30</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
<td>0.29**</td>
<td>-0.09</td>
<td>-0.16*</td>
<td>0.03</td>
<td>-0.55**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Partnership Firm</td>
<td>0.15</td>
<td>0.36</td>
<td>0</td>
<td>1</td>
<td>0.00</td>
<td>-0.18**</td>
<td>0.17*</td>
<td>0.12</td>
<td>0.14*</td>
<td>-0.35**</td>
<td></td>
</tr>
<tr>
<td>8 No. of Global Offices</td>
<td>106.46</td>
<td>165.83</td>
<td>3</td>
<td>1100</td>
<td>-0.11</td>
<td>-0.05</td>
<td>0.45**</td>
<td>0.09</td>
<td>0.02</td>
<td>-0.18**</td>
<td>0.44**</td>
</tr>
</tbody>
</table>

**Notes:** † p < 0.10; * p < 0.05; ** p < 0.01; *** p < 0.001. Standard errors in parentheses. Two-tailed test.
firms is not significant in all models. The coefficient of Birth Year of Firm is negative and significant ($p < 0.05$), but it is not significant in the subsequent models. This result shows that older firms have higher productivity, but that this age effect may be attributed to variables not included in Model 1.

Model 2 introduces the independent variables Private Firm, Partnership Firm, and No. of Global Offices. Consistent with Hypothesis 1, the coefficient of the dummy variable, Private Firm, is positive and significant ($p < .001$). Also consistent with Hypothesis 1 is the coefficient of the dummy variable, Partnership Firm, which is positive and significant ($p < .005$). To test Hypothesis 2, which proposes that private corporations are more productive than partnerships, we performed a Wald test. The result of the Wald test is not significant and provides no support for Hypothesis 2. The coefficient of No. of Global Offices is also not significant. This result provides no support for hypothesis 3, which proposes that organizational complexity lowers productivity. Our results thus are consistent with those reported by Durand and Vargas (2003).

In Model 3 we enter two interaction terms, Private Firm $\times$ No. of Global Offices and Partnership Firm $\times$ No. of Global Offices. The results do not support hypothesis 4, which anticipated that organizational complexity would affect the relationship between locus of ownership and performance. Neither interaction coefficient is significant, nor does the fit of the model improve. Again, this is consistent with the core result of Durand and Vargas (2003).
Discussion & Conclusion

The motivation for this paper was to examine the thesis put forward by Greenwood and Empson (2003) and Durand and Vargas (2003) that ownership form affects organizational performance. We tested the thesis by comparing three ownership forms, distinguished by their locus of ownership and scope of owners’ liability, that are found in the management consulting industry. We also examined the Durand and Vargas (2003) thesis that organizational design, notably the extent of complexity, interacts with ownership form to affect performance.

Our results support the argument that locus of ownership affects organizational productivity, thus confirming the findings of Durand and Vargas (2003) and the proposition put forward by Greenwood and Empson (2003). Where owners control organizations, those organizations perform better than where ownership and management are separated. Contrary to Greenwood and Empson (2003), however, we found no support for the influence of owners’ liability. There were no differences in the performances of partnerships and private corporations. Our third finding, contrary to expectations, is that organizational complexity does not affect performance. This result is similar to that reported by Durand and Vargas (2003) who found no support for their hypothesis that owner-controlled, non-complex organizations would perform better than agent-led, complex organizations. Furthermore, given that (a) our setting is more likely to exhibit the effects of organizational complexity and (b) we used an especially sensitive statistical procedure, our results confirm the importance of locus of ownership irrespective of organizational complexity.

Overall, the consistency of our results and those reported by Durand and Vargas (2003) add weight to the predictive power of a more encompassing view of agency theory. Agency theory is recurrently criticized within organization theory for the narrowness of its scope (e.g. Perrow, 1986). Recently, Lane et al. (1999) debated with Amihud and Lev (1999) and Denis et al. (1999) the effect of ownership form upon management attitudes towards horizontal diversification. Although Denis et al. (1999) and Amihud and Lev (1999) claim that the literature supports the predictions of agency theory, Lane and his colleagues (1999) countered that strategic management theory is more interested in the complexities of the relationships between owners and managers. Our results are consistent with the claims of Denis et al. (1999) and Amihud and Lev (1999) that agency theory is a parsimonious yet powerful theory. However, we agree with Lane et al. (1999) that research should probe the processes linking ownership form and organizational performance. Our analysis has shown that locus of ownership matters but we do not test processual details of why. Further, we have treated locus of ownership as a dichotomous variable, whereas many public corporations provide equity to senior managers in an effort to align their respective interests. There is a need, therefore, for further, careful research into the ways by which ownership is translated into organizational structures, human resource processes, norms and cultures, and leadership behaviours. Research of this kind is already beginning (e.g. Empson and Chapman, 2006) and is to be encouraged because it promises...
to throw more nuanced light upon how professionals and knowledge can be effectively organized within alternative ownership formats.

Despite our central finding that locus of ownership affects organizational performance, we are not arguing that partnerships and private corporations are superior to the public corporation in all industries. Most professional service firms compete on the basis of their ‘intangible capital’ (Pennings et al., 1998: 438) and have modest needs for investment capital. Indeed, the relatively low need for capital is one reason why partnerships and private corporations survive in the professional services industry (Hansmann, 1996; Teece, 2003). In contrast, the public corporation may be the more successful ownership form where economies of scale can be derived from intensive capital investment (such as mining or car manufacturing) or where success depends upon the ability to undertake large and prolonged investments in research and development (such as pharmaceuticals). Further, the motivational advantages of the private corporation may be outweighed by the disadvantages arising from perceived unfairness if family control is heavy-handed and seen to depress the career prospects of non-family senior employees. In such situations, market discipline could provide the stronger motivational advantage.

Nor are we suggesting that the superiority of the private corporation and partnership over the public corporation will necessarily hold in all countries. There is an emerging literature showing that results obtained from Western markets may not readily transfer to countries transitioning from previously closed economies (e.g. White and Liu, 2001; Peng et al., 2004). Further, different ‘varieties of capitalism’ (Djelic, 1998; Hall and Soskice, 2001), where the respective interests of shareholders and other stakeholders, such as employees, are given different weight, may influence the play of ownership structures and should be given attention in future research (e.g. see Morgan and Quack, 2004).

We thus support Kang and Sorensen’s (1999: 140) call for a ‘contingency theory of corporate governance where the effect of ownership on firm performance is contingent on the “fit” between ownership and the industry context’ but add that the potential role of national institutions also be considered. Such a theory would identify the circumstances under which alternative forms of ownership might prosper. Importantly, a contingency approach should recognize that the benefits of alternative ownership formats are not fixed but may change over time. Wilhelm and Downing (2001), for example, found that the escalating need of investment banks for capital precipitated a shift from the partnership to the public corporation format. A potentially interesting line of research would explore the difficulties involved in such a shift. What does it mean for former ‘partners’ to become employees? And how difficult is it to move from one particular type of ownership to another? Would law firms, for example, easily reject the partnership form and embrace the public format, even if the latter were financially superior?

Further research should consider these issues in smaller PSFs. We have examined large consulting firms and caution that our results may not apply readily to smaller firms. However, the fact that our results are derived from large rather than small consultancies is itself significant. It is easier to imagine
internal ownership affecting organizational performance in smaller organizations because in those contexts owners are more visible, enhancing their ability to influence activities and norms of behaviour. It is in large organizations that the influence of ownership control would be expected to be least evident, because of ‘the costs of collective decision making’ (Hansmann, 1996: 40), yet this was not the case here. In this sense, our sample was a ‘tough test’, underlining that locus of ownership is, indeed, significant.

Finally, the setting examined here exposes another, intriguing theoretical question. Underlying many theories of organizational form is the assumption that, over time, the superior form survives. But that does not appear to be the case in the management consulting industry. On the contrary, although our results indicate that the public corporation is less productive than either the private corporation or the partnership, it is the public corporation that has become the more widely used, at least among the largest firms. The same trend is occurring in other professional service sectors (Greenwood and Empson, 2003). This trend serves to remind us that we know relatively little about the circumstances under which particular ownership forms are preferable and about why alternatives exist and survive in the same industry. Given the importance of the topic, hopefully this paper will provoke further research into these questions.

Notes

1 Not all ‘professional’ services meet the traditional definition of ‘profession’, in that some (including management consulting) have not secured state-sanctioned jurisdictional exclusivity and self-regulation, which are important elements of the professional project (e.g. see Maijoor and van Witteloostuijn, 1996). ‘Professional services’ could more accurately be described as ‘business advisory services’ provided by a highly educated workforce. Moreover, as Ernst and Kieser point out, the abstract knowledge or expertise of consultants may be questioned (Ernst and Kieser, 2002; see also Armbrister and Kipping, 2002). However, we follow the widespread convention of referring to these firms (including management consulting, e.g. Haas and Hansen, 2005) as professional service firms.

2 Our point is that the gap in compensation between partners and non-partners in private corporations and partnerships is higher than in public corporations because partners benefit from salaries plus profits (which, in the public corporation, flow to shareholders). According to Maister (1982), partners typically receive 30–50% of revenues, whereas the much larger group of non-partners receive 30% (the remaining 30% covers overheads, support staff and investment). The gap in compensation can be illustrated using McKinsey & Co. as an example. The reported ratio of directors/senior partners to partners in 1993 was 20:1. Applying Maister’s formula (30% for each category) produces an average compensation for partners 20 times greater than that of the average non-professional.

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