

Equity Agency Costs Amongst Manufacturing SMEs

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ABSTRACT. The principal objectives in this paper are to assess and to build upon the recently published research of Ang et al. (2000) making a pioneering attempt to estimate equity agency costs in a large cross-sectional sample of smaller, non-publicly traded companies in the United States. The present research employs panel data for 871 manufacturing SMEs legally organised as proprietary companies, taken from the Australian federal government's Business Longitudinal Survey conducted over four financial years from 1994–1995 to 1997–1998. The two proxies for equity agency costs that are trialed – operating expense ratio and asset turnover ratio – both appear lower in more complex agency relationships. It is also found that greater enterprise growth is significantly more evident amongst SMEs with more complex agency relationships. Thus, it is possible that observed differences in values for the two equity agency cost proxies are not the direct consequence of differences in management and ownership structures; but, rather, of differences in the experience of enterprise growth, possibly enabled to some degree by the management and ownership structures adopted. This raises the question of whether, in fact, operating expense ratio and asset turnover ratio can be reliably used as proxies for equity-related agency costs in SME research.

1. Introduction

A theoretical perspective that has contributed significantly to modern financial theory is that of agency theory, which considers a business enterprise from the viewpoint of the various stakeholders it might have, and explores how their *financial* (that is, pecuniary or monetary) interests are furthered and protected in their dealings with each other. The stakeholder rela-

tionships that receive most attention in the small and medium-sized enterprise (SME) literature are those between:

- Managers and owners.
- Owner-managers and other owners.
- Insiders (primarily owners and managers) and outsiders (mainly creditors and lenders).

The central dilemma in agency theory is that day-to-day control of an SME's activities and financial fortunes very often rests in the hands of only some stakeholders who are usually managers or owner-managers. Yet all stakeholders have a legitimate expectation that their interests will be well served. By analogy with legal notions of agent and principal, those who exercise control are seen as being agents for the other stakeholders who are considered to be principals.

The most significant problems that may arise from agency relationships in SMEs are:

- Information asymmetry.
- Moral hazard.
- Adverse selection.

One rational response to the inherent risk posed by self-interest on the part of agents, and other behaviours detrimental to principals in agency relationships, is for each stakeholder to increase the reward expected in return for participation in the business. Other possible responses are of two broad types:

- Monitoring.
- Bonding.

An important point about these responses to agency-related risk is that they are not costless. The out-of-pocket costs of maintaining an agency relationship may therefore include higher costs of

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financing, costs entailed in overcoming information asymmetries to achieve better monitoring of agents' activities, transaction costs incurred in setting up formal contractual arrangements with agents, and costs of incentive payments to agents. There are, in addition, less evident agency costs such as excessive perquisite consumption and shirking by agents, and also the opportunity costs arising from non-optimal financial decisions made by agents. Agency costs in total are the incremental costs explicitly and implicitly incurred over those that would be experienced in a perfect capital market situation, and typically they must ultimately be borne by the owners of the businesses concerned. Against these costs the owners must weigh the perceived benefits of agency relationships such as access to finance and management expertise they do not themselves possess.

Reflecting on developments in the agency perspective on business finance over a quarter of a century, Ang et al. (2000, p. 81) observe in a recent article in *The Journal of Finance* that:

Great strides have been made in demonstrating empirically the role of agency costs in financial decisions, such as in explaining the choices of capital structure, maturity structure, dividend policy, and executive compensation. However, the actual measurement of the principal variable of interest, agency costs, in both absolute and relative terms, has lagged behind.

The reasons for this lag in relation to equity agency costs are explained as follows. In order to be able to estimate equity agency costs in particular management and ownership circumstances, it must be possible to identify zero equity agency cost businesses – defined by Jensen and Meckling (1976) as those owned wholly by a single owner-manager. Such concerns provide a benchmark or base case against which to assess the equity agency costs of businesses with other management and ownership structures. Because of their very nature, it is not possible to identify zero equity agency cost businesses amongst public companies for which information is usually readily available to researchers. In fact, in order to access zero equity agency cost businesses, researchers need data on non-publicly traded concerns that are typically considerably smaller than their publicly traded counterparts – that is, businesses that might be referred to as SMEs. The problem, of

course, is that until recently comprehensive and reliable data on SMEs – especially data of a financial nature – have not been available to researchers worldwide. Thus, equity agency costs have tended to be “inferred but not measured in the empirical finance literature” (Ang et al., 2000, p. 81).

The principal objectives in this paper are to assess and to build upon the recently published research of Ang et al. (2000) making a pioneering attempt to estimate equity agency costs in a large cross-sectional sample of smaller, non-publicly traded companies in the United States. This is made possible by the recent availability of data from the Australian federal government's Business Longitudinal Survey (BLS). The paper proceeds as follows. After reviewing prior research on agency theory as it applies to SMEs, and examining recent research on estimating equity agency costs in such concerns, the current research method is outlined. Thereafter, the findings of the research are presented, followed by conclusions arising from this investigation.

2. Prior research

2.1. Agency theory and SMEs

The seminal work in the literature of agency theory is that of Jensen and Meckling (1976) who place a great deal of their emphasis on an agency perspective of owner-managed business enterprises. Fama (1980), Fama and Jensen (1983), Demsetz (1983), and Demsetz and Lehn (1985) are also recognised as having made important contributions to the development of agency theory. These works focus on the economic issue of separation of ownership and control in business concerns, and they contrast the agency relationships and problems that might be encountered in smaller owner-managed businesses, in which ownership and control are typically merged, with those experienced in larger corporate entities in which the separation of ownership and control is usually greatest.

The relevance and application of agency theory to the particular circumstances encountered in SMEs have subsequently been considered most notably by Hand et al. (1982), Pettit and Singer (1985), Easterwood and Singer (1991),

Hutchinson (1991), and Ang (1991, 1992). In their paper, Hand et al. (1982, p. 26) express the opinion that “although agency relationships exist in all businesses, their effect is likely to be most significant if the businesses are small”. Among the points made by Hand et al. (1982, p. 30) which have a bearing on agency theory as it applies to SMEs are:

- The primary agency contest is not between owners and managers, but between insiders and outside suppliers of funds.
- The many opportunities owner-managers have to divert resources to themselves make monitoring costs high. Thus, outside suppliers of funds tend to be restricted to those who are particularly adept at monitoring the SMEs to which they lend, such as trade creditors and banks.
- Because of the imperfect market for ownership stakes, owner-managers may not bear all agency costs and therefore have limited motivation for reducing them through monitoring or bonding.
- Conflicts amongst stakeholders are not easily resolved by a disgruntled party selling out at a fair market price. Hence, the only viable alternative is to remain and contest, which might divert financial and managerial resources from more productive uses, inhibit decision-making, and put the SME’s solvency at risk.
- The most important means of averting agency conflicts between insiders and outside interests is an appropriately drawn-up agreement covering such matters as managerial compensation and other employment terms, profit distribution policy, reorganisations, sale of ownership stakes to others, and relations with associated businesses.

Focusing on the risks faced by outside stakeholders in an SME, Pettit and Singer (1985, p. 52) point out that:

Two factors . . . may contribute to a greater level of uncertainty in the estimation of risk for smaller firms. First, the problem of asymmetric information, or differences in the information available to managers and outsiders, is greater for small firms. For example, such firms generally find it expensive to supply audited financial statements, and may find it difficult to overcome this deficiency with other information. Second, the added flexibility that small firms may have . . . makes it easier to substitute one asset for

another, potentially leading to a change in the risk of the firm.

A more recent paper by Easterwood and Singer (1991) indicates that because of these circumstances, conflicts between owner-managers and outsiders may have more serious consequences in the SME. It is also argued that the coincidence of ownership and management in SMEs should reduce incentives to consume excessive perquisites, shirk or make inefficient investments.

Hutchinson’s (1991, p. 1) perception of the importance of agency theory to understanding the financial dimensions of SMEs is evident in his assertion that it “provides a new perspective which . . . helps to explain what might otherwise appear to be anomalous phenomena in the area of small business finance”. Hutchinson (1991, p. 1) expands on the broader significance of agency theory to the field as follows:

Agency theory helps to explain why small firms exist at all. Given the existence of economies of size, it could be expected that all business activities would be conducted by large organisations. Agency theory provides counterbalancing arguments in favour of smallness. In some cases the benefits of small size are not sufficient to outweigh the benefits of economies of size and in these cases large firms will predominate. In other cases, where economies of size are not great or where agency costs are very great, small size may be the optimum.

Hutchinson (1991) then goes on to suggest that agency theory specifically aids understanding of such diverse aspects of SME finance as financial structure, the small firm effect, the valuation of initial public offerings, franchising, management buyouts, differential financial disclosure, and the relationship between venture capitalists and SMEs.

Ang (1991) believes that the unique characteristics of SMEs extend agency theory in a number of significant ways:

- In many SMEs the agency relationship between owners and managers may be absent because the owners are also managers. Nevertheless, the various legal structures which SMEs could adopt create a wider range of agency relationships, with their attendant problems, than might typically be found in large concerns that are almost exclusively companies.
- Because of their predominantly fixed nature, the usual solutions to agency problems such as

monitoring and bonding are likely to be more costly in relative terms in SMEs. This will inevitably increase the cost of transactions between the various stakeholders unless alternative solutions are found.

- There is likely to be both the opportunity and the need for finding new solutions to agency problems in SMEs. For example, reputation and good faith emerge as particularly important ways of securing commonality of interests in SMEs.

In a subsequent paper, Ang (1992) reflects on agency problems in SMEs in the following terms:

Take agency problems among equity holders. It ranges from none in the case of a proprietorship to potentially very serious in a partnership organization without limited liability. Costs of bonding and monitoring vary among different types of small businesses as well. Some lenders have intimate personal knowledge of the small businesses, and others have to depend on more costly on-site auditing. The seriousness of asymmetric information varies quite a bit too. It ranges from the very low, such as among those small businesses whose fortune depends largely on the local economic conditions in which the local bank would have superior knowledge, to very high information asymmetry, such as in the case of a research-oriented high tech startup where the owners are among the few experts in their narrow field.

2.2. Estimating agency costs

The opportunity for Ang et al. (2000) to estimate equity agency costs amongst SMEs has been provided through release by the United States Federal Reserve Board in 1997 of data from its National Survey of Small Business Finances (NSSBF). The NSSBF is a cross-sectional survey of a nationally representative sample of 4,637 smaller non-farm, non-financial businesses operating as at year-end 1992. Ang et al. (2000) chose to limit their analysis to 1,708 small C-corporations (broadly corresponding to proprietary companies in the Australian context). The following proxy measures for equity agency costs are employed:

- Ratio of annual operating expenses to annual sales – comparisons on this financial ratio between zero equity agency cost businesses and concerns with other ownership and manage-

ment structures capture excessive expenses, including those arising from unjustified perquisite consumption and other direct agency costs. Annual operating expenses are defined to exclude cost of goods sold, interest expense and managerial compensation.

- Ratio of annual sales to year-end total assets – comparisons on this financial ratio between zero equity agency cost businesses and concerns with other ownership and management structures capture the loss of revenues attributable to inefficient asset utilisation which can arise through poor investment decisions, shirking by management, or unjustified perquisite consumption.

Control variables employed in a series of parametric and non-parametric statistical tests using these equity agency cost proxies as dependent variables include industry, enterprises size and enterprise age. The main independent variables used are those reflecting various management and ownership structures and those reflecting the external monitoring role of bank lenders.

The key findings of the research conducted by Ang et al. (2000) can be summarised as follows:

- Equity agency costs are significantly higher when a non-owner manages the business.
- Equity agency costs vary inversely with the ownership share of managers.
- Equity agency costs increase with the number of non-managing owners.
- External monitoring by lenders produces a limited positive externality in the form of somewhat lower equity agency costs.

Overall, Ang et al. (2000) conclude that their research provides substantial support for predictions on equity agency costs made by Jensen and Meckling (1976) and other early writers on agency theory.

Notwithstanding their plausibility at face value, there are several reasons to be concerned about the Ang et al. (2000) findings. Chief amongst these concerns are the following:

- Ang et al. (2000, p. 85) acknowledge as follows the possibility of measurement errors in the SME data employed by them:

Sources of measurement error include differences in accounting methods chosen with respect to the recognition and timing of revenues and costs, poor record-keeping typical of small businesses, and the tendency of small-business owners to exercise flexibility with respect to certain cost items. For example, owners may raise/lower expenses, including their own pay, when profits are high/low. Fortunately, these items are sources of random measurement errors that may be reduced with a larger sample across firms in different industries and age.

Notwithstanding the last sentence of this quotation, the possibility of considerable “noise” in the data – making conclusions more difficult to reach and the ultimate findings less certain – must be recognised. Thus, the hazards of basing a study of equity-related agency costs on a single cross-sectional sample should have received more acknowledgement than is evident in the Ang et al. (2000) paper. At the very least, a more tempered presentation of findings might have been expected.

- By excluding managerial compensation from their definition of operating expenses, Ang et al. (2000) have disregarded a possible nexus between the pecuniary rewards paid to agents and the likelihood of equity agency costs being incurred, explained by Godfrey et al. (1997, pp. 288–289) as follows:

... the principal protects against ultimately bearing the costs by adjusting the remuneration paid to the agent so that the agent bears the costs. For example, a manager (agent) with a good reputation would be expected to behave in the interests of shareholders (principals). As such, shareholders would probably monitor the manager's performance very little and remunerate the manager well. If the manager had a poor or uncertain reputation, shareholders would probably monitor his or her performance much more. Also, shareholders would not be prepared to pay the manager as much as if he or she had a good reputation and was expected to act in shareholders' interests. That is, shareholders (principals) pay managers (agents) less as the cost of monitoring increases. The way that the principal protects against bearing agency costs by paying according to the level of costs expected is known as price protection.

Thus, while operating expenses as defined by Ang et al. (2000) may be higher in some SME management and ownership structures with more complex agency relationships, this could be offset by lower managerial salaries established as price protection. Ang et al. (2000, p. 84) acknowledge this issue in a footnote as follows:

Theoretical support for the null hypothesis [that agency costs are independent of the ownership and control structure] is due to Demsetz (1983), who suggests that the sum of amenities for on-the-job consumption and take-home pay for similar quality managers is the same for both high-cost and low-cost monitoring organizations. The proportion paid to the managers, however, differs according to the cost of monitoring. Here, it would seem that total operating expense, which includes direct pay to the managers as well as perks and firm level monitoring cost, is the appropriate measure to test the hypothesis.

Having made this acknowledgement, Ang et al. (2000, p. 86) go on to indicate that in their study “Operating expenses are defined as total expenses less cost of goods sold, interest expense, and managerial compensation”.

- Ang et al. (2000) have established that the ratio of annual operating expenses to annual sales, as defined by them, is likely to be higher in various SME management and ownership structures involving agency relationships when compared with the zero equity agency cost situation of a concern with a single owner-manager holding 100 per cent of the equity. Other things being equal, this implies that, ignoring price protection, net margin on sales is likely to be lower where agency relationships exist. If price protection is acknowledged, then net margin on sales may well be independent of management and ownership structure. Ang et al. (2000) have also established that the ratio of annual sales to total assets is likely to be lower in various SME management and ownership structures involving agency relationships when compared with the zero equity agency cost situation. Note that the Ang et al. (2000) findings identified hold irrespective of any control for the impact of economies of scale. Now, the following relationship is known to hold:

Return on total assets =

Net margin on sales × Asset turnover ratio

Thus, whether or not price protection is acknowledged, the Ang et al. (2000) findings imply that return on total assets must necessarily be lower where agency relationships exist unless, of course, economies of scale are substantial – which would only be the case in larger SMEs. The question then is: why would a rational decision-maker enter into agency

relationships if a reduction in return on investment is a possible consequence of doing so? No consideration of this issue is evident in the Ang et al. (2000) paper.

- In the relevant research literature, there is substantial, if sometimes contradictory, evidence that amongst SMEs enterprise size and/or the experience of enterprise growth can significantly influence observed values for certain financial ratios (Walker and Petty, 1978; Boardman et al., 1981; Hutchinson, 1987, 1989; Davidson and Dutia, 1991; Osteryoung et al., 1992; McMahon, 2001a). Clearly, Ang et al. (2000) have incorporated the influence of enterprise size into their research by including total assets and/or annual sales as terms in the financial ratios they have studied; and by examining the influence of control for the impact of economies of scale upon their findings. However, possibly because they were working with a single cross-sectional dataset, Ang et al. (2000) do not explicitly consider the potential effect of enterprise growth upon agency relationships and costs in the SMEs under investigation. Experience would suggest that, given their inevitably limited resources, SMEs seeking to grow are more likely to seek external debt and/or equity financing for this purpose – necessarily creating more agency relationships of greater complexity that could, in turn, influence the values of financial ratios being examined (McMahon et al., 1993). In this light, the omission of enterprise growth as an explanatory variable in the Ang et al. (2000) research appears to be an important limitation.

The research described in the present paper aims to extend the published findings of Ang et al. (2000) in the following main respects:

- Employ SME data gathered in a different country, namely Australia.
- Employ a longitudinal sample that will permit study of the behaviour of SME equity agency costs over time.
- Provide new evidence on the prevalence of financial monitoring activities in SMEs with alternative management and ownership structures.
- Incorporate consideration of price protection into assessment of SME equity agency costs

measured using the operating expenses on sales ratio.

- Test the Ang et al. (2000) findings regarding SME equity agency costs measured using the asset turnover ratio.
- Address the apparent paradox in the Ang et al. (2000) findings in that they imply entering into agency relationships may lead to a fall in return on investment.
- Explore the possible impact that enterprise growth might have upon agency relationships and costs.

Stemming from the discussion so far, with further justification to be provided in the Research Findings section of the paper, the specific research hypotheses to be tested are as follows:

- H1: Leverage ratio is not significantly influenced by the management and ownership structure of SMEs.
- H2: Financial monitoring of agents is significantly more prevalent amongst SMEs with more complex agency relationships.
- H3: Operating expense ratio (including managerial compensation) is not significantly influenced by the management and ownership structure of SMEs.
- H4: Asset turnover ratio is significantly lower amongst SMEs with more complex agency relationships.
- H5: Return on total assets is not significantly influenced by the management and ownership structure of SMEs.
- H6: Greater enterprise growth is significantly more evident amongst SMEs with more complex agency relationships.

3. Research method

The panel data employed in this research are drawn from the Business Longitudinal Survey (BLS) conducted by the Australian Bureau of Statistics (ABS) on behalf of the federal government over the four financial years 1994–1995 to 1997–1998. Costing in excess of \$4 million, the BLS was designed to provide information on the growth and performance of Australian employing businesses, and to identify selected economic and structural characteristics of these businesses.

The ABS Business Register was used as the

population frame for the survey, with approximately 13,000 business units being selected for inclusion in the 1994–1995 mailing of questionnaires. For the 1995–1996 survey, a sub-sample of the original selections for 1994–1995 was chosen, and this was supplemented with a sample of new business units added to the Business Register during 1995–1996. The sample for the 1996–1997 survey was again in two parts. The first formed the longitudinal or continuing part of the sample, comprising all those remaining live businesses from the 1995–1996 survey. The second part comprised a sample of new business units added to the Business Register during 1996–1997. A similar procedure was followed for the 1997–1998 survey. Approximately 6,400 business units were surveyed in each of 1995–1996, 1996–1997 and 1997–1998. The BLS did not employ completely random samples. The original population (for 1994–1995) was stratified by industry and business size, with equal probability sampling methods being employed within strata. Further stratification by innovation status, exporting status and growth status took place for the 1995–1996 survey.

Data collection in the BLS was achieved through self-administered, structured questionnaires containing essentially closed questions. Copies of the questionnaires used in each of the four annual collections can be obtained from the ABS. The questionnaires were piloted prior to their first use, and were then progressively refined after each collection in the light of experience. Various imputation techniques, including matching with other data files available to the ABS, were employed to deal with any missing data. Because information collected in the BLS was sought under the authority of the *Census and Statistics Act 1905*, and thus provision of appropriate responses to the mailed questionnaires could be legally enforced by the Australian Statistician, response rates were very high by conventional research standards – typically exceeding 90 per cent.

The specific BLS data used in this study are included in a Confidentialised Unit Record File (CURF) released by the ABS on CD-ROM in December, 1999. This CURF contains data on 9,731 business units employing fewer than 200 persons – broadly representing SMEs in the Australian context. Restricted industrial classification detail, no geographical indicators, presen-

tation of enterprise age in ranges, and omission of certain data items obtained in the BLS all help to maintain the confidentiality of unit records. Furthermore, all financial variables have been subject to perturbation – a process in which values are slightly varied to provide further confidentiality protection.

This research is concerned only with the manufacturing sector of the BLS CURF. The main reason for this is that it is highly probable that cross-industry differences in the nature of business activities, typical employment per business, capital intensity, etc. could confound findings. Over 99 per cent of all businesses in the Australian manufacturing sector are SMEs according to generally accepted definitions (Australian Bureau of Statistics, 1996). There are 3,411 manufacturing SMEs in the BLS CURF, representing approximately 35 per cent of businesses in the file.

Additional focus is provided to this research by considering only manufacturing SMEs legally organised as proprietary companies. The main reason for this further narrowing of the unit of analysis is that this research necessarily involves comparing manufacturing SMEs in terms of certain financial performance measures. This becomes problematic if the study sample contains both incorporated and unincorporated businesses because of the customary procedural difference in accounting for owners' wages, which are not separately reported in the BLS data. There are 2,413 manufacturing SMEs legally organised as proprietary companies in the BLS CURF, representing approximately 71 per cent of manufacturing SMEs in the file.

Finally, because a key question requesting information on the proportion of an SME's equity that is held by owner-managers was not asked in the 1994–1995 survey, the analysis presented in this paper is confined to data for the 1995–1996, 1996–1997 and 1997–1998 financial years only.

Variables used in this research are either categorical in nature or, if metric, have irregular distributional properties (that is, they are non-normally distributed). Transformation of metric variables to produce normal distributions is avoided because of difficulties of interpretation often created by such procedures. Thus, non-parametric/distribution free techniques of statistical analysis are employed exclusively.

4. Research findings

4.1. Debt provider monitoring

The focus in the Ang et al. (2000) research, and in this paper, is equity-related agency costs. However, if an SME supplements its funding with borrowings, additional debt-related agency costs may be incurred – especially those arising from the financial monitoring activities of debt providers. Ang et al. (2000, p. 88) observe as follows on a possible interaction between equity-related and debt-related agency costs:

Because [lenders] generally require a firm's managers to report results honestly and to run the business efficiently with profit, [lender] monitoring complements shareholder monitoring of managers, indirectly reducing owner-manager agency costs. That is, by incurring monitoring costs to safeguard their loans, [lenders] lead firms to operate more efficiently by better utilising assets and moderating perquisite consumption in order to improve the firm's reported financial performance to the [lender]. Thus, lower priority claimants, such as outside shareholders, should realise a positive externality from [lender] monitoring, in the form of lower agency costs.

Subsequently, Ang et al. (2000) were able to demonstrate empirically that external monitoring by lenders does produce a limited positive externality in the form of somewhat lower equity agency costs.

Unfortunately, the variables used by Ang et al. (2000) to reach this finding (the number of lenders used by an SME and the length of an SME's longest lender relationship) are not available to the present study. However, this research does have access to data on financial leverage (ratio of year-end total liabilities to year-end total assets) for SMEs in the BLS panel. Ang et al. (2000) indicate that this measure proxies for debt providers' incentive to financially monitor those concerns to which they lend. Now, the findings of this study on any differences in equity-related agency costs between various management and ownership structures would clearly be confounded if differential incentives for lender monitoring exist between the management and ownership structures examined. This possibility is examined in Table I.

Note that, following the lead of Ang et al. (2000), all comparisons in Table I are between financial leverage for various management and

ownership structures and the base case of financial leverage for zero equity agency cost SMEs (single working owner with 100% equity). Examination of Table I reveals there are no statistically significant differences in financial leverage that are consistent over time between management and ownership structures. In other words, the first hypothesis presented earlier is supported:

H1: Leverage ratio is not significantly influenced by the management and ownership structure of SMEs.

Thus, the equity-related agency cost comparisons to be made are unlikely to be confounded by differential incentives for lender monitoring and their differential free rider consequences for equity agency costs.

Before proceeding, attention should be drawn to the substantial differences in Table I in the magnitude and/or sign of financial leverage differences for virtually all management and ownership structures over the three years of this study. A similar pattern will be observed in the remaining findings of the research. While the point will not be laboured, this is clear vindication for earlier creating awareness of the hazards of basing a study of equity-related agency costs on a single cross-sectional sample.

4.2. Financial monitoring

It is clear from the discussion so far that financial monitoring costs are a major element of agency-related costs in SMEs. Furthermore, the point has been made that price protection in agency relationships sees managerial compensation reduced by the amount of financial monitoring costs necessarily incurred by principals given the perceived quality of the managers employed. Therefore, it is important in empirically evaluating agency theory as it applies to SMEs to be able to establish that, in fact, financial monitoring costs are higher amongst concerns with more complex agency relationships. Using the BLS panel data, this becomes possible by comparing financial monitoring activities between concerns with various management and ownership structures. For this purpose, best practice in financial monitoring involving the preparation of budget forecasts and

TABLE I
Comparisons of leverage ratios (per cent debt)

Equity agency cost comparisons	1995–1996		1996–1997		1997–1998	
	Number	Median	Number	Median	Number	Median
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
All other management and ownership structures	791	65.56	772	63.11	770	62.32
Difference		3.84		–7.60		–3.57
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
No working owners	122	55.18	142	53.75	154	56.02
Difference		–6.54		–16.96*		–9.87
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
All other owner-managed structures	669	66.55	630	64.05	616	63.23
Difference		4.83		–6.66		–2.66
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Single working owner with > 50% and < 100% equity	17	58.98	16	46.96	18	56.98
Difference		–2.74		–23.75		–8.91
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Single working owner with ≤ 50% equity	95	62.05	97	67.08	96	59.55
Difference		0.33		–3.63		–6.34
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Two working owners with 100% equity	281	73.21	229	64.03	243	66.67
Difference		11.49		–6.68		0.78
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Two working owners with > 50% and < 100% equity	23	60.26	28	63.05	16	59.58
Difference		–1.46		–7.66		–6.31
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Two working owners with ≤ 50% equity	82	60.05	95	64.64	94	61.89
Difference		–1.67		–6.07		–4.00
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Three or more working owners with 100% equity	108	65.30	95	68.98	86	62.86
Difference		3.58		–1.73		–3.03
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Three or more working owners with > 50% and < 100% equity	26	74.97	29	57.97	23	62.27
Difference		13.25		–12.74		–3.62
Single working owner with 100% equity	80	61.72	99	70.71	101	65.89
Three or more working owners with ≤ 50% equity	37	61.29	41	63.75	40	59.26
Difference		–0.43		–6.96		–6.63

*, ** indicate statistical significance in a two-tailed Mann-Whitney test at the 5 and 1 per cent levels.

the regular reporting of income and expenditure against budgets is taken as a benchmark (Australian Manufacturing Council, 1996). In Table II, the prevalence of financial monitoring activities (as defined) for management and ownership structures of varying complexity is compared.

The findings presented in Table II suggest there are statistically significant differences in the prevalence of financial monitoring activities that are consistent over time between management and ownership structures. Moreover, careful examination of Table II indicates that, over the three years of the study, the prevalence of the benchmark level of financial monitoring is greater amongst more complex agency relationships. Generally, "No working owners", the most complex agency circumstance, has the highest level of financial monitoring and "Single working owner with 100% equity", the least complex agency circumstance, has the lowest level of financial monitoring. In

other words, the second hypothesis presented earlier is supported:

H2: Financial monitoring of agents is significantly more prevalent amongst SMEs with more complex agency relationships.

Amongst other things, this finding suggests the importance of taking account of price protection in assessing equity-related agency costs by including managerial compensation in the operating expense ratio used in the research.

4.3. Operating expense ratio

It is now appropriate to examine the first of the proxies for equity-related agency costs proposed by Ang et al. (2000) – amended, of course, to take account of price protection. In Table III, the operating expense ratio (including managerial compensation) for management and ownership structures of varying complexity is compared.

TABLE II
Financial monitoring activities and management/ownership structure*

Management and ownership structures	1995–1996		1996–1997		1997–1998	
	Users/ Sample	Per cent**	Users/ Sample	Per cent**	Users/ Sample	Per cent**
No working owners	94/122	77.0	102/142	71.8	104/154	67.5
Single working owner with 100% equity	45/80	56.3	43/99	43.4	44/101	43.6
Single working owner with > 50% and < 100% equity	9/17	52.9	8/16	50.0	12/18	66.7
Single working owner with ≤ 50% equity	67/95	70.5	67/97	69.1	61/96	63.5
Two working owners with 100% equity	137/281	48.8	100/229	43.7	109/243	44.9
Two working owners with > 50% and < 100% equity	20/23	87.0	19/28	67.9	10/16	62.5
Two working owners with ≤ 50% equity	54/82	65.9	57/95	60.0	54/94	57.4
Three or more working owners with 100% equity	70/108	64.8	61/95	64.2	42/86	48.8
Three or more working owners with > 50% and < 100% equity	16/26	61.5	22/29	75.9	15/23	65.2
Three or more working owners with ≤ 50% equity	27/37	73.0	30/41	73.2	24/40	60.0
All management and ownership structures	539/871	61.9	509/871	58.4	475/871	54.5

* Use of both budget forecasting and regular income and expenditure reports.

** For each year, differences across management and ownership structures are statistically significant at the 1 per cent level using a one-tailed Chi-Square test.

TABLE III
Equity agency cost comparisons using operating expense ratio (per cent)

Equity agency cost comparisons	1995–1996		1996–1997		1997–1998	
	Number	Median	Number	Median	Number	Median
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
All other management and ownership structures	791	50.09	772	50.86	770	50.36
Difference		0.77		–5.21		–3.50
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
No working owners	122	42.89	142	43.93	154	44.20
Difference		–6.43*		–12.14**		–9.66**
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
All other owner-managed structures	669	51.76	630	52.44	616	52.30
Difference		2.44		–3.63		–1.56
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Single working owner with > 50% and < 100% equity	17	55.18	16	54.95	18	57.13
Difference		5.86		–1.12		3.27
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Single working owner with ≤ 50% equity	95	47.79	97	49.72	96	46.67
Difference		–1.53		–6.35		–7.19
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Two working owners with 100% equity	281	54.34	229	53.64	243	53.85
Difference		5.02		–2.43		–0.01
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Two working owners with > 50% and < 100% equity	23	47.82	28	47.21	16	43.94
Difference		–1.50		–8.86*		–9.92
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Two working owners with ≤ 50% equity	82	50.19	95	56.19	94	55.28
Difference		0.87		0.12		1.42
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Three or more working owners with 100% equity	108	50.12	95	52.37	86	52.26
Difference		0.80		–3.70		–1.60
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Three or more working owners with > 50% and < 100% equity	26	48.72	29	46.61	23	45.86
Difference		–0.60		–9.46		–8.00*
Single working owner with 100% equity	80	49.32	99	56.07	101	53.86
Three or more working owners with ≤ 50% equity	37	47.18	41	46.71	40	49.13
Difference		–2.14		–9.36		–4.73

*, ** indicate statistical significance in a two-tailed Mann-Whitney test at the 5 and 1 per cent levels.

With one exception, the findings presented in Table III suggest there are no statistically significant differences in operating expense ratio (including managerial compensation) that are consistent over time between management and ownership structures. In other words, for all but one management and ownership structure, the third hypothesis presented earlier is supported:

H3: Operating expense ratio (including managerial compensation) is not significantly influenced by the management and ownership structure of SMEs.

Thus, in general, the findings of this research uphold the early Demsetz (1983) proposition that, after considering the impact of price protection, equity agency costs are independent of management and ownership structure. It should be observed, however, that while not statistically significant, the majority of the differences in operating expense ratio (including managerial compensation) in Table III are negative in sign – suggesting some influence of economies of scale reinforcing the impact of price protection.

The single exception to the findings summarised in the previous paragraph arises in comparing operating expense ratio (including managerial compensation) for SMEs with no working owners with the base case of zero equity agency cost concerns (single working owner with 100% equity). Here, there is a statistically significant difference that is consistent over time suggesting that operating expense ratio (including managerial compensation) is lower for SMEs with no working owners. Presuming, with some reason, that price protection would at least equate operating expense ratio (including managerial compensation) for the two management and ownership structures in question, the explanation for a lower ratio for SMEs with no working owners must be associated with economies of scale. Evidence supporting this proposition is presented later in the paper.

4.4. *Asset turnover ratio*

The second of the proxies for equity-related agency costs proposed by Ang et al. (2000) is asset turnover ratio. In Table IV, the asset turnover ratio

for management and ownership structures of varying complexity is compared.

Examination of Table IV indicates that, generally, asset turnover ratio is lower amongst more complex agency relationships. “No working owners”, “Single working owner with 50% equity or less”, “Two working owners with 50% equity or less” and “Three working owners with 50% equity or less” are the only management and ownership structures for which there are statistically significant differences in asset turnover ratio and for which there is any consistency over time. In other words, for the most complex management and ownership structures, the fourth hypothesis presented earlier is broadly supported:

H4: Asset turnover ratio is significantly lower amongst SMEs with more complex agency relationships.

Note that the common feature of the management and ownership structures identified above is that there are no working owners with a controlling interest in these SMEs. For these concerns, the findings of this research are consistent with those of Ang et al. (2000).

4.5. *Return on total assets*

Earlier, the concern was expressed that a possible implication of the Ang et al. (2000) findings is that rational decision-makers enter into agency relationships even though a reduction in return on investment is a possible consequence of doing so. In Table V, the return on total assets ratio for management and ownership structures of varying complexity is compared.

Examination of Table V reveals there are no statistically significant differences in return on total assets that are consistent over time between management and ownership structures. In other words, the fifth hypothesis presented earlier is supported:

H5: Return on total assets is not significantly influenced by the management and ownership structure of SMEs.

Thus, the findings of this research support the proposition that a reduction in return on investment does not appear to be a consequence of entering into more complex agency relationships.

TABLE IV
Equity agency cost comparisons using asset turnover ratio (times per annum)

Equity agency cost comparisons	1995–1996		1996–1997		1997–1998	
	Number	Median	Number	Median	Number	Median
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
All other management and ownership structures	791	1.93	772	1.88	770	1.96
Difference		–0.36**		–0.27*		–0.22**
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
No working owners	122	1.44	142	1.62	154	1.64
Difference		–0.85**		–0.53**		–0.54**
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
All other owner-managed structures	669	2.00	630	1.99	616	2.03
Difference		–0.29*		–0.16		–0.15*
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Single working owner with > 50% and < 100% equity	17	2.45	16	1.90	18	2.03
Difference		0.16		–0.25		–0.15
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Single working owner with ≤ 50% equity	95	1.87	97	1.67	96	1.76
Difference		–0.42**		–0.48**		–0.42**
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Two working owners with 100% equity	281	2.37	229	2.28	243	2.24
Difference		0.08		0.13		0.06
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Two working owners with > 50% and < 100% equity	23	2.17	28	1.59	16	1.80
Difference		–0.12		–0.56*		–0.38
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Two working owners with ≤ 50% equity	82	1.93	95	1.80	94	1.92
Difference		–0.36*		–0.35*		–0.26
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Three or more working owners with 100% equity	108	2.02	95	2.27	86	2.16
Difference		–0.27		0.12		–0.02
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Three or more working owners with > 50% and < 100% equity	26	1.90	29	1.77	23	1.88
Difference		–0.39		–0.38		–0.30
Single working owner with 100% equity	80	2.29	99	2.15	101	2.18
Three or more working owners with ≤ 50% equity	37	1.40	41	1.88	40	1.41
Difference		–0.89**		–0.27		–0.77**

*, ** indicate statistical significance in a one-tailed Mann-Whitney test at the 5 and 1 per cent levels.

TABLE V
Comparisons of return on total assets ratios (per cent per annum)

Equity agency cost comparisons	1995–1996		1996–1997		1997–1998	
	Number	Median	Number	Median	Number	Median
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
All other management and ownership structures	791	10.15	772	9.04	770	8.71
Difference		–0.01		–0.54		–0.02
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
No working owners	122	9.48	142	7.57	154	6.79
Difference		–0.68		–2.01		–1.94
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
All other owner-managed structures	669	10.12	630	9.19	616	9.01
Difference		–0.04		–0.39		0.28
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Single working owner with > 50% and < 100% equity	17	10.82	16	8.62	18	9.55
Difference		0.66		–0.96		0.82
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Single working owner with ≤ 50% equity	95	8.13	97	7.69	96	7.77
Difference		–2.03		–1.89*		–0.96
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Two working owners with 100% equity	281	10.69	229	9.88	243	9.60
Difference		0.53		0.30		0.87
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Two working owners with > 50% and < 100% equity	23	7.41	28	11.14	16	8.46
Difference		–2.75		1.56		–0.27
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Two working owners with ≤ 50% equity	82	9.16	95	7.10	94	8.42
Difference		–1.00		–2.48		–0.31
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Three or more working owners with 100% equity	108	10.87	95	9.36	86	9.33
Difference		0.71		–0.22		0.60
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Three or more working owners with > 50% and < 100% equity	26	10.93	29	9.21	23	8.88
Difference		0.77		–0.37		0.15
Single working owner with 100% equity	80	10.16	99	9.58	101	8.73
Three or more working owners with ≤ 50% equity	37	9.25	41	11.46	40	10.44
Difference		–0.91		1.88		1.71

*, ** indicate statistical significance in a two-tailed Mann-Whitney test at the 5 and 1 per cent levels.

This would be the case if the demonstrated reduction in asset turnover ratio in more complex agency relationships is offset by higher margins on sales resulting from lower operating expense ratios (including managerial compensation) in more complex agency relationships, also suggested by this study.

4.6. Enterprise growth

In a previous research study, the author used exploratory cluster analysis with key enterprise age, size and growth variables to discover if there appear to be any stable development pathways evident in the BLS panel data (McMahon, 2001b). Each of four annual data collections for the ongoing longitudinal panel of 871 manufacturing SMEs was separately examined using cluster analysis. Comparisons were then made of the cluster analysis outcomes over time. Descriptive statistics for various enterprise characteristics facilitated interpretation of the cluster analysis solutions. Using the clusters as markers or signposts, three relatively stable SME development pathways were discernible in the longitudinal panel results – low, moderate and high growth. The low growth development pathway appears to account for around 70 per cent of SMEs in the panel. The moderate growth pathway seems to be followed by around 25 per cent of the panel. And around 5 per cent of the panel looks to lie on the high growth pathway, which is in accord with the observed rarity of substantial growth amongst SMEs world-wide (McMahon et al., 1993; Storey, 1994).

Differences between the identified SME development pathways in terms of enterprise age, size and growth variables are, as expected, highly significant in a statistical sense. It should be noted, in particular, that the compound employment growth rates (per cent per annum) over the period 1994–1995 to 1997–1998 for the low, moderate and high growth SMEs were –0.2, 2.4 and 6.6 respectively. A Kruskal Wallis one-way analysis of variance test reveals that the differences are statistically significant at the 1 per cent level. Furthermore, the compound sales growth rates (per cent per annum) over the period 1994–1995 to 1997–1998 for the low, moderate and high growth SMEs were 5.3, 9.3 and 10.4 respectively.

A Kruskal Wallis one-way analysis of variance test reveals that the differences are statistically significant at the 1 per cent level.

It would appear that the development pathways and the pace of SME development (over 20 years or so) in the author's previous study match reasonably well with those in earlier research of a similar nature undertaken by Hanks et al. (1993). Both development models seem to lead towards the same range of SME configurations that are widely recognised in the relevant research literature (McMahon et al., 1993):

- Traditional or life-style SMEs – following the low growth development pathway, these concerns generally have few, if any, growth aspirations. They principally exist to provide their owner-managers with a source of employment and income. Furthermore, they are frequently operated in a manner consistent with the life-style aspirations of their owner-managers. The author's previous study suggests that after approximately 15 years such SMEs would have fewer than 20 employees, sales less than \$3 million per annum, total assets below \$2 million, little or no employment growth, and sales growth up to 5 per cent per annum.
- Capped growth SMEs – following the moderate growth development pathway, these concerns generally have modest growth aspirations. Bounds to growth could be externally imposed by the nature of their competitive environment; or may be intrinsic given the nature of their operations. Frequently though, growth is deliberately capped by owner-managers to a rate that limits dependence upon external financing – thus minimising surrender of control and accountability obligations this support would normally bring. The author's previous study suggests that after approximately 15 years such SMEs would have fewer than 100 employees, sales around \$10 million per annum, total assets less than \$10 million, employment growth up to 3 per cent per annum, and sales growth as much as 10 per cent per annum.
- Entrepreneurial SMEs – following the high growth development pathway, these concerns generally have ambitious growth aspirations. They are most often associated with entrepreneurial aptitude, technical and commercial

innovation, international outlook, and other business qualities that could see them eventually become large enterprises. The author's previous study suggests that after approximately 15 years such SMEs would have over 100 employees, sales around \$30 million per annum, total assets more than \$20 million, employment growth exceeding 5 per cent per annum, and sales growth greater than 10 per cent per annum.

Clearly, the fact that these common SME configurations are recognised in the research lends plausibility to the empirically-based development taxonomy derived.

In Table VI, SME development pathways for management and ownership structures of varying complexity are compared.

Careful examination of Table VI reveals there are statistically significant differences in the dominant development pathway of the SMEs studied that are consistent over time between management and ownership structures. Grouping businesses with the more complex agency relationships – “No working owners”, “Single working owner with 50% equity or less”, “Two working owners with 50% equity or less” and “Three working owners with 50% equity or less” – the frequency data in Table VI reveal that:

- In 1995–1996, SMEs with more complex agency relationships represent 31.3 per cent of concerns on the low growth development pathway, 53.7 per cent of concerns on the moderate growth development pathway and 76.9 per cent of concerns on the high growth development pathway.
- In 1996–1997, SMEs with more complex agency relationships represent 36.9 per cent of concerns on the low growth development pathway, 55.2 per cent of concerns on the moderate growth development pathway and 79.5 per cent of concerns on the high growth development pathway.
- In 1997–1998, SMEs with more complex agency relationships represent 39.4 per cent of concerns on the low growth development pathway, 53.7 per cent of concerns on the moderate growth development pathway and 69.2 per cent of concerns on the high growth development pathway.

Thus, over the three years of the study, it would appear that the more complex management and ownership structures in which there are no working owners or in which any working owners do not have a controlling interest in the SMEs they manage account for just one-third of concerns on the low growth development pathway, around one-half of concerns on the moderate growth development pathway, and as high as three-quarters of concerns on the high growth development pathway. In other words, the sixth hypothesis presented earlier is supported:

H6: Greater enterprise growth is significantly more evident amongst SMEs with more complex agency relationships.

This, of course, raises the possibility that observed differences in values for certain financial ratios in this study are not the consequence of differences in management and ownership structures *per se*; but, rather, of differences in the experience of enterprise growth enabled to some degree by the management and ownership structures adopted.

Support for this finding is provided by the following observations on the impact of controlling for dominant development pathway when assessing equity-related agency costs in the manner described in this paper:

- If the analysis presented in Table III is undertaken separately for SMEs on the low, moderate and high growth development pathways, then most of the statistically significant differences in operating expense ratio (including managerial compensation) disappear when comparing SMEs with no working owners and concerns representing the base case of zero equity agency costs (single working owner with 100% equity). Thus, there is now a broadly unchallenged finding that, after considering the impact of price protection, equity agency costs as measured by operating expense ratio are independent of management and ownership structure.
- If the analysis presented in Table IV is undertaken separately for SMEs on the low, moderate and high growth development pathways, then most of the statistically significant differences in asset turnover ratio disappear when com-

TABLE VI
Enterprise growth and management/ownership structure

Management and ownership structures	Development pathways	1995–1996*		1996–1997*		1997–1998*	
		Number	Per cent	Number	Per cent	Number	Per cent
No working owners	Low growth	61	50.0	77	54.2	82	53.3
	Moderate growth	43	35.2	46	32.4	55	35.7
	High growth	18	14.8	19	13.4	17	11.0
	Total	122	100.0	142	100.0	154	100.0
Single working owner with 100% equity	Low growth	67	83.7	80	80.8	79	78.2
	Moderate growth	12	15.0	18	18.2	18	17.8
	High growth	1	1.3	1	1.0	4	4.0
	Total	80	100.0	99	100.0	101	100.0
Single working owner with > 50% and < 100% equity	Low growth	13	76.5	13	81.2	13	72.2
	Moderate growth	4	23.5	3	18.8	5	27.8
	High growth	0	0.0	0	0.0	0	0.0
	Total	17	100.0	16	100.0	18	100.0
Single working owner with ≤ 50% equity	Low growth	63	66.3	70	72.2	72	75.0
	Moderate growth	26	27.4	23	23.7	19	19.8
	High growth	6	6.3	4	4.1	5	5.2
	Total	95	100.0	97	100.0	96	100.0
Two working owners with 100% equity	Low growth	243	86.5	194	84.7	203	83.5
	Moderate growth	35	12.5	31	13.5	37	15.2
	High growth	3	1.1	4	1.7	3	1.2
	Total	281	100.0	229	100.0	243	100.0
Two working owners with > 50% and < 100% equity	Low growth	17	73.9	23	82.1	13	81.2
	Moderate growth	6	26.1	5	17.9	3	18.8
	High growth	0	0.0	0	0.0	0	0.0
	Total	23	100.0	28	100.0	16	100.0
Two working owners with ≤ 50% equity	Low growth	55	67.1	63	66.3	69	73.4
	Moderate growth	25	30.5	29	30.5	22	23.4
	High growth	2	2.4	3	3.2	3	3.2
	Total	82	100.0	95	100.0	94	100.0
Three or more working owners with 100% equity	Low growth	76	70.3	71	74.7	57	66.2
	Moderate growth	29	26.9	22	23.2	25	29.1
	High growth	3	2.8	2	2.1	4	4.7
	Total	108	100.0	95	100.0	86	100.0
Three or more working owners with > 50% and < 100% equity	Low growth	16	61.5	16	55.2	16	69.6
	Moderate growth	8	30.8	12	41.4	6	26.1
	High growth	2	7.7	1	3.4	1	4.3
	Total	26	100.0	29	100.0	23	100.0
Three or more working owners with ≤ 50% equity	Low growth	18	48.7	22	53.7	25	62.5
	Moderate growth	15	40.5	14	34.1	13	32.5
	High growth	4	10.8	5	12.2	2	5.0
	Total	37	100.0	41	100.0	40	100.0
All management and ownership structures	Low growth	629	72.2	629	72.2	629	72.2
	Moderate growth	203	23.3	203	23.3	203	23.3
	High growth	39	4.5	39	4.5	39	4.5
	Total	871	100.0	871	100.0	871	100.0

* For each year, differences across management and ownership structures are statistically significant at the 1 per cent level using a one-tailed Chi-Square test.

paring SMEs with more complex agency relationships and concerns representing the base case of zero equity agency costs (single working owner with 100% equity). Thus, there is now a broadly unchallenged finding that equity agency costs as measured by asset turnover ratio are independent of management and ownership structure.

Both these observations are inconsistent with the findings of Ang et al. (2000), and also with the earlier findings of the present research when ignoring the potential influence of enterprise growth upon equity agency costs.

5. Summary and conclusions

The key findings from this research into equity-related agency costs amongst Australian manufacturing SMEs included in the BLS CURF panel can be summarised as follows:

- Because of various inevitable sources of “noise” in SME financial data and/or fluctuating circumstances from period to period, it would appear hazardous to base a study of equity agency costs on a single cross-sectional sample. Longitudinal data that permit evaluation of the consistency of equity agency costs over time would seem to be essential.
- Financial monitoring of agents is significantly more prevalent amongst SMEs with more complex agency relationships, suggesting the importance of taking account of price protection in assessing equity agency costs by including managerial compensation in the operating expense ratio used.
- With the exception of the most complex agency circumstance in which there are no working owners, operating expense ratio (including managerial compensation) is not significantly influenced by the management and ownership structure of SMEs. Generally speaking though, operating expense ratio (as defined) appears lower in more complex agency relationships. The lower operating expense ratios seem to be the combined effect of price protection in agency relationships and economies of scale.
- Asset turnover ratio is significantly lower amongst SMEs with more complex manage-

ment and ownership structures in which there are no working owners with a controlling interest.

- Lower asset turnover ratios amongst SMEs with more complex management and ownership structures appear to be offset by higher margins in such concerns, so that the overall return on investment is not lower. The higher margins seem to be due to the combined effect of price protection in agency relationships and economies of scale which, together, lower operating expense ratios.
- Greater enterprise growth is significantly more evident amongst SMEs with more complex agency relationships. Thus, observed differences in values for certain financial ratios in this study may not be the direct consequence of differences in management and ownership structures; but, rather, of differences in the experience of enterprise growth enabled to some degree by the management and ownership structures adopted.

The important question that has arisen in this research is whether operating expense ratio and asset turnover ratio can be reliably used as proxies for equity-related agency costs when the experience of enterprise growth appears to be such a significant influence upon measured values for these ratios. Lower operating expense ratios can be explained in terms of realised economies of scale in SMEs that have become larger through growth. Lower asset turnover ratios can be explained in terms of greater capital intensity in SMEs that have become larger through growth. Taking the two ratios together, it is plausible that growth-oriented SMEs simply opt for the strategic combination of higher margin and lower turnover in order to achieve their financial goals. Non-growth SMEs may, on the other hand, be forced to operate with lower margin and higher turnover – perhaps as a consequence of both intense competition and the limited financial resources available to them. The picture is complicated, of course, by the possibility that greater enterprise growth is facilitated by entering more complex agency relationships in the quest for funding for growth and development purposes. In other words, it might not be possible to disentangle the effects of agency relationships and enterprise growth upon operating expense

ratio and asset turnover ratio in a straightforward manner.

Beyond the inevitable bounds introduced to this research study by the broad data and methodological choices made, an important limitation to the analysis presented is its reliance upon essentially bivariate statistical testing. Following the lead of Ang et al. (2000), some preliminary multivariate analysis was undertaken. Given that the variables used in the research are either categorical in nature or, if metric, have irregular distributional properties, the multivariate analysis was restricted to multinomial logistic regression. In the main, such analysis did not add to the insights provided by bivariate statistical testing; and, in fact, somewhat obscured the key findings due to methodological issues. By and large, the explained variance in the multivariate tests conducted was quite low – as was the case in the Ang et al. (2000) study. This clearly creates an opportunity for further research employing more sophisticated multivariate techniques. In the mean time, the analysis which has been presented does suggest that the findings of the pioneering Ang et al. (2000) study must be considered to be seriously challenged.

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References

- Ang, J. S., 1991, 'Small Business Uniqueness and the Theory of Financial Management', *The Journal of Small Business Finance* **1**(1), 1–13.
- Ang, J. S., 1992, 'On the Theory of Finance for Privately Held Firms', *The Journal of Small Business Finance* **1**(3), 185–203.
- Ang, J. S., R. A. Cole and J. W. Lin, 2000, 'Agency Costs and Ownership Structure', *The Journal of Finance* **55**(1), 81–106.
- Australian Bureau of Statistics, 1996, *Small Business in Australia 1995*, Canberra, Australian Capital Territory: Australian Government Publishing Service.
- Australian Manufacturing Council, 1996, *Practising Balance: Integrating Best Financial Practice Into Your Business*, Melbourne, Victoria: Australian Manufacturing Council.
- Boardman, C. M., J. W. Bartley and R. L. Ratliff, 1981, 'Small Business Growth Characteristics', *American Journal of Small Business* **5**(3), 33–45.
- Davidson, W. N. and D. Dutia, 1991, 'Debt, Liquidity, and Profitability Problems in Small Firms', *Entrepreneurship Theory and Practice* **16**(1), 53–64.
- Demsetz, H., 1983, 'The Structure of Ownership and the Theory of the Firm', *Journal of Law and Economics* **26**(2), 375–390.
- Demsetz, H. and K. Lehn, 1985, 'The Structure of Corporate Ownership: Causes and Consequences', *Journal of Political Economy* **93**(6), 1155–1177.
- Easterwood, J. C. and R. F. Singer, 1991, 'Are the Motivations for Leveraged Buyouts the Same for Large and Small Firms?', in R. Yazdipour (ed.), *Advances in Small Business Finance*, Boston, Massachusetts: Kluwer Academic Publishers, pp. 79–92.
- Fama, E. F., 1980, 'Agency Problems and the Theory of the Firm', *Journal of Political Economy* **88**(2), 288–307.
- Fama, E. F. and M. C. Jensen, 1983, 'Separation of Ownership and Control', *Journal of Law and Economics* **26**(2), 301–325.
- Godfrey, J., A. Hodgson and S. Holmes, 1997, *Accounting Theory*, 3rd edn, Brisbane, Queensland: John Wiley and Sons.
- Hand, J. H., W. P. Lloyd and R. B. Rogow, 1982, 'Agency Relationships in the Close Corporation', *Financial Management* **11**(1), 25–30.
- Hanks, S. H., C. J. Watson, E. Jansen and G. N. Chandler, 1993, 'Tightening the Life-Cycle Construct: A Taxonomic Study of Growth Stage Configurations in High-Technology Organizations', *Entrepreneurship Theory and Practice* **18**(2), 5–29.
- Hutchinson, P. J., 1987, *The Financial Profile of Growth Small Firms: An Analysis of the Accounting Ratios of Australian Companies At and After Flotation, 1964/1965–1983/1984*, Doctor of Philosophy Thesis, University of Bath, Bath, England.
- Hutchinson, P. J., 1989, *The Financial Profile of Small Firms in Australia*, Accounting Research Study No. 10, Department of Accounting and Financial Management, University of New England, Armidale, New South Wales.
- Hutchinson, P. J., 1991, *Issues in Small Business Finance and Accounting*, Working Paper No. 91-6, Department of Accounting and Financial Management, University of New England, Armidale, New South Wales.
- Jensen, M. C. and W. H. Meckling, 1976, 'Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure', *Journal of Financial Economics* **3**(4), 305–360.
- McMahon, R. G. P., 2001a, 'Growth and Financial Profiles Amongst Manufacturing SMEs from Australia's Business Longitudinal Survey', *Entrepreneurship Theory and Practice* **26**(2), 1–11.
- McMahon, R. G. P., 2001b, 'Deriving an Empirical Development Taxonomy for Manufacturing SMEs Using Data from Australia's Business Longitudinal Survey', *Small Business Economics* **17**(3), 197–212.

- McMahon, R. G. P., S. Holmes, P. J. Hutchinson and D. M. Forsaith, 1993, *Small Enterprise Financial Management: Theory and Practice*, Sydney, New South Wales: Harcourt Brace.
- Osteryoung, J. S., R. L. Constand and D. A. Nast, 1992, 'Financial Ratios in Large Public and Small Private Firms', *Journal of Small Business Management* **30**(3), 35–46.
- Pettit, R. R. and R. F. Singer, 1985, 'Small Business Finance: A Research Agenda', *Financial Management* **14**(3), 47–60.
- Storey, D. J., 1994, *Understanding the Small Business Sector*, London, England: Routledge.
- Walker, E. W. and J. W. Petty, 1978, 'Financial Differences Between Large and Small Firms', *Financial Management*, **7**(4), 61–68.

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