

1992

## Leveraged Buyouts

Kurt J. Smith  
*Edith Cowan University*

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**LEVERAGED BUYOUTS**

**BY**

**Kurt J. Smith B.Bus., ASCPA.**

**A Thesis Submitted in Partial Fulfilment of the  
Requirements for the Award of**

**Bachelor of Business with Honours**

**at the School of Business, Edith Cowan University**

**Date of Submission: 13.11.92**

### Abstract

This study comprehensively reviews theoretical and empirical literature pertaining to leveraged buyouts. An agency theory framework best describes the source of LBO value creation. Agency conflicts are mitigated through extensive utilisation of debt capital and concentrated equity ownership, which are functions of asset and organisation structures. The evidence generally supports the hypothesis that economic wealth is created by leveraged buyouts, rather than merely redistributed among stakeholders.

This thesis uses a multiple case design to examine leveraged buyouts in Australia. It compiles data from a broad range of public and private sources, and conducts qualitative and quantitative analysis on six (6) leveraged buyouts.

Case results indicate that industry and business attributes synonymous with US and UK buyouts are important determinants of Australian leveraged buyouts. Business attributes are the primary motivating forces. Ownership structures comply with foreign expectations, and capital structures are more closely aligned with those reported in UK research.

Industry adjusted performance was analysed for a subset of three (3) leveraged buyouts with post-buyout periods of sufficient duration. Profit margins and capital utilisation exceeded industry medians in each post-buyout year, for each

leveraged buyout. Cost control, rather than increased sales, accounted for most gains. Australian buyouts did not manage working capital effectively, a result which contrasts markedly with US and UK leveraged buyouts.

The evidence from the Australian leveraged buyouts analysed in this thesis is consistent with an agency theory framework.

**Declaration**

I certify that this thesis does not incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Date...13-11-92.....

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## CHAPTER 1

### Introduction

Leveraged buyouts are transactions where private investors use predominantly debt financing to purchase a corporation or a division thereof (Palepu, 1990). The investor group usually comprises incumbent management and a leveraged buyout specialist (Easterwood, Seth & Singer, 1989).

This introduction outlines the historical development of leveraged buyout markets in the United States, the United Kingdom and Australia; it explains the study's purpose, and enumerates the research questions that constitute this thesis.

#### 1.1 A Historical Perspective on Leveraged Buyouts

##### United States.

The leveraged buyout movement originated with 'bootstrap' acquisitions in the 1960s, where under capitalised buyers used the target's cash flow and assets to fund acquisitions. The buyouts were small by present standards and typically involved distressed private companies. Senior secured funds were advanced on the basis of asset backing, with equity capital forming the balance (Burke & Fite, 1990).

The subsequent development of a subordinated debt market, arranged as private placements, accorded leveraged buyouts more flexibility and increased the transaction size range (Burke & Fite, 1990). Less stringent indenture

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provisions facilitated bid premiums in excess of book value. That is, subordinated debt emphasised cash flow generation rather than asset security.

Large returns from leveraged buyout transactions induced the establishment of dedicated LBO partnerships. Gibbons Green van Amerongen (1969), Thomas H Lee (1974), Kohlberg Kravis Roberts (1976), Clayton & Dubilier (1976) and Butler Capital (1979) were early LBO specialists (Jensen, 1989).

During the late 1970s, the trend toward conglomeration was reversed by inflation and changes in acquisition accounting. Companies divested non-core assets to reduce working capital and overhead costs, and to supplement depressed operating earnings. Divestiture programmes released quality divisions and subsidiaries at the time when leveraged buyouts emerged as a viable alternative to traditional trade buyers (Whitman & Knowles, 1990).

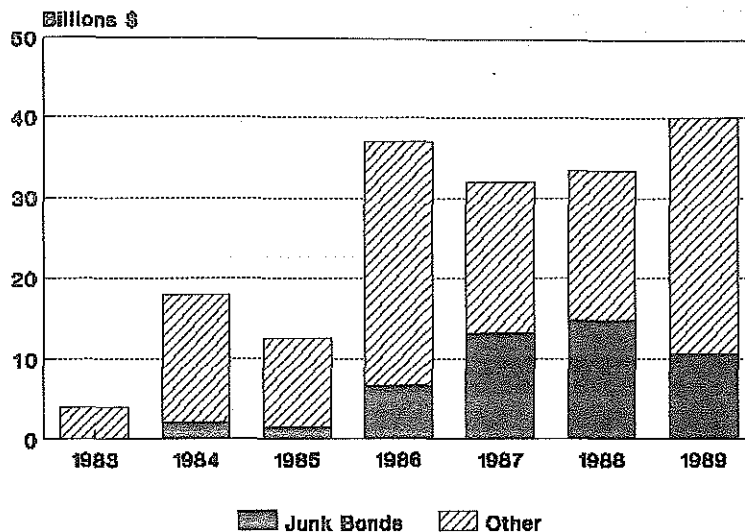
The \$370M leveraged buyout of Houdaille Industries Inc. by Kohlberg Kravis Roberts in 1979, was the first significant public company buyout, heralding a new era in leveraged buyout activity.

In 1984, public high yield (junk) bonds were issued as subordinated debt in leveraged buyouts. Leveraged buyout junk bonds comprised 27% of the new issuance high yield market between 1983 and 1989 (Figure 1.1).

## Introduction

Figure 1.1

## US LBO FINANCING



Source: Paulus & Waite (1990)

Public high yield bonds contributed to the development of the leveraged buyout market by securitising subordinated debt. Securitisation improved marketability and reduced interest costs (Perry & Taggart, 1990). Volatile interest rates shifted investor preferences from private placements to public high yield bonds, because secondary markets grant public investors the right to sell subordinated debt prior to maturation (Loeys, 1990).

Furthermore, the return/risk characteristics of high yield securities attracted new capital into the subordinated debt market. High yield securities have shorter duration than investment grade debt of equivalent maturity, hence junk bonds have less price sensitivity to interest rates (Perry & Taggart, 1990). Yield premiums were believed to



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more than compensate for the additional default risk (Altman, 1990a).

The regulatory and legislative framework enhanced demand for high yield securities. The National Bank Act and the Glass-Steagall Act prevented commercial banks from holding large blocks of corporate stock. The Investment Company Act limited life insurance companies and mutual funds to 2% and 10% of a company's stock, respectively (Berglof, 1991). High yield securities exhibited equity-like returns and had no statutory limits.

Therefore, large amounts of subordinated debt were available at short notice for leveraged buyouts. As purchase multiples increased, new securities contingent on asset sales or cash flow improvements were devised, such as deferred interest securities (payment-in-kind debt, PIK preferred stock, and deep discount zero coupon bonds), and increasing rate notes (Levi & Bencivenga, 1990). The extensive use of subordinated securities afforded senior bank debt more asset protection (Burke & Fite, 1990).

Competition induced investment banks and LBO partnerships to commit their capital to reduce deal completion times. Bridge loans advance funds that are eventually retired with the proceeds of a public high yield issue. Hence, registration delays inherent in public debt offerings occur after the deal has closed (Burke & Fite, 1990).

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In addition, the syndication time required for the equity component in large leveraged buyouts was eliminated by the creation of dedicated LBO funds. By mid-1988, an estimated \$25B had been invested in LBO equity funds, and given debt ratios of 90%, this provided the basis for leveraged buyout financing of approximately \$250B (Kuhn, 1990).

Therefore, liquid subordinated debt and dedicated LBO equity funds reduced the remaining encumbrances on the transaction size range of leveraged buyouts. In 1989, RJR Nabisco became the largest leveraged buyout ever performed, being valued at \$25B.

The US leveraged buyout market experienced a considerable decline in activity during 1990 and 1991. Figure 1.2 reflects the extent to which buyouts have suffered from a financing drought.

The present shortage of LBO debt finance is a function of weakness in the economy, Federal Reserve pressure on commercial bank loan portfolios, and a liquidity crisis in the junk bond market.

**United Kingdom.**

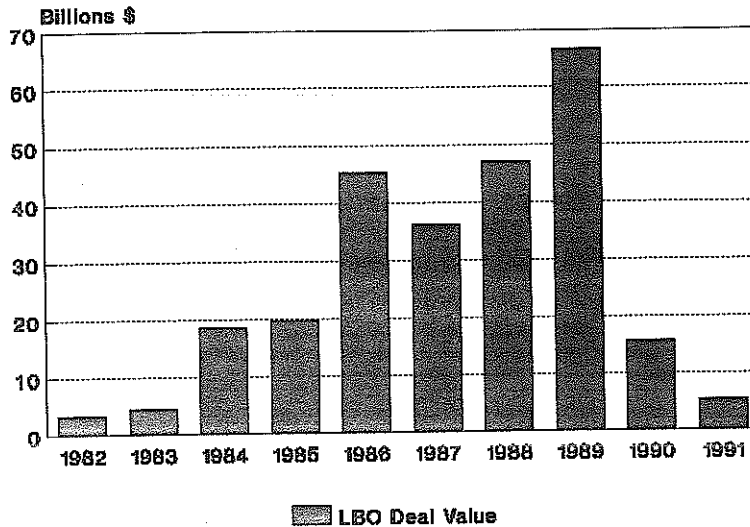
Although the leveraged buyout market commenced in the late 1970s, the economic recession of 1981 and 1982 provided the impetus for LBO market development. Difficult operating conditions resulted in numerous receiverships and motivated corporate divestiture programmes, which supplied the buyout

## Introduction

market with a range of potential targets (Wright, Thompson, Chiplin, & Robbie, 1991).

Figure 1.2

## US LBO MARKET



Source: M&A Almanac, 26(1), 1992.

The flat stockmarket deterred private companies and public (government) trading enterprises from transferring ownership through initial public offerings, hence, leveraged buyouts became a viable medium for maximising sale proceeds (Wright et al., 1991b).

Modifications to the Companies Act allowed firms to extend financial assistance to purchasers of their stock, and grant creditors recourse to target company assets in the event of default (Wright, Thompson & Robbie, 1992; Wright et al., 1991b). These factors are significant to leveraged buyouts with management or employee equity ownership, and when shell companies are used to complete the transaction.

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The rapid growth in venture capital markets during the 1980s promoted concomitant growth in leveraged buyouts. Venture capitalists allocated, on average, over 50% of their loan portfolio to leveraged buyouts (1988, 1989), more than double the ratio advanced in the United States (Wright et al., 1991a).

The mezzanine market mainly comprises subordinated debt in loan form, with attached common stock warrants or other equity kickers (Levi & Bencivenga, 1990). Pension funds, insurance companies and commercial banks are not large investors in the mezzanine market, which restricts the availability of subordinated debt and the flexibility of leveraged buyouts.

LBO specialist firms were established, partly in response to the presence of US investment banks in London. LBO mezzanine and equity capital funds emerged in 1986, and when combined with improved senior debt syndication, this increased the total value of leveraged buyout transactions (Figure 1.3). Furthermore, several commercial banks created development capital subsidiaries to improve their buyout capabilities.

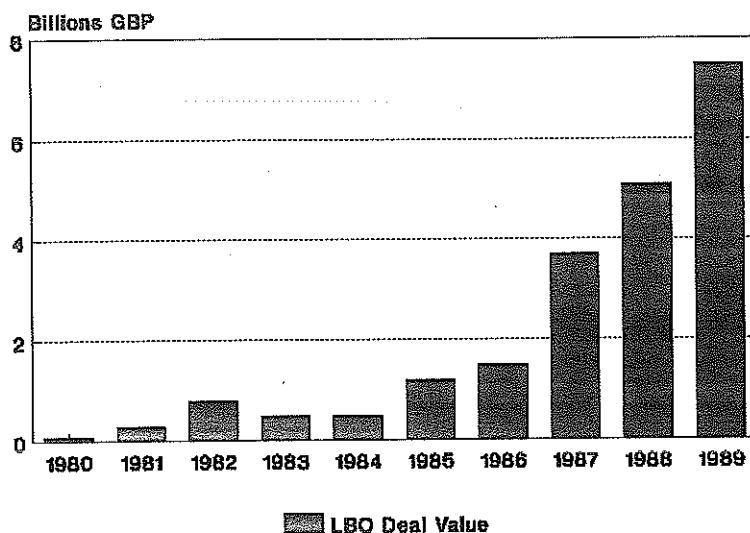
The British government's privatisation programme has been a strong source of leveraged buyouts. Since National Freight, in 1982, there has been over one hundred and twenty public sector leveraged buyouts (Wright et al., 1991b). Employee led buyouts have occurred in Local Authority

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privatisations as employees and trade unions seek to guarantee long term employment.

Figure 1.3

## UK LBO MARKET



Source: Wright et al., 1991b

The GBP 60M Haden deal in 1985, was the first public company leveraged buyout in the United Kingdom. "Going private" buyouts form a minority of total transactions (1%), however, they account for a more substantial proportion of total value (17%). The largest UK buyout is the GBP 2.2B Gateway acquisition completed in 1989 (Levi & Bencivenga, 1991; Wright et al., 1991b).

Divestitures and private (family) company leveraged buyouts represent the major proportion of total activity, at 68% and 21% respectively (Wright et al., 1991b). The former reflects the reversal of diversification policies instituted

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in the 1970s, and the latter, the need to deal with succession problems (Wright et al., 1992).

**Australia.**

The Australian leveraged buyout market originated in the early 1980s. The paucity of domestic research prevents a comprehensive review of the market's development, however, the following factors had some influence over the growth in leveraged buyout utilisation in Australia.

Australia had a comparatively high inflation rate for most of the 1980s, creating a bias toward debt capital, since asset accretion exceeded debt servicing cost increases. In addition, a relatively high corporate tax rate mitigated the after tax cost of debt.

The success of foreign leveraged buyouts educated financial professionals and managers in the potential applications of the concept in Australia. Several LBO specialist firm's were established in the mid-1980s, including DBSM (SBC Dominguez Barry), Byvest, AIDC and BLE Capital.

The leveraged buyout market received a tremendous boost when Australian banking licences were granted to sixteen foreign banks in February 1985. The improved availability of senior debt capital at competitive rates, from banking institutions familiar with buyouts, advanced the LBO market in Australia.

Dedicated LBO funds were created to procure mezzanine and equity capital. Known examples are DBSM mezzanine and

## Introduction

equity funds, and Fulcrum (a fund established by Western Capital). However, the mezzanine market in Australia comprises private loans from institutions and therefore, suffers from illiquidity and size limitations.

The Australian corporate bond market may overcome the above restrictions. The market grew from \$0-\$5B in 18 months, with various issues and maturities, and at attractive premiums to semi-government securities. Although the market is only available for blue chips at present, low grade credits may follow. DBSM commit trading and distribution resources to the corporate bond market, which is somewhat analogous to Dréxel Burnham Lambert's promotion of junk bonds in the United States (Bruck, 1989).

Brooks (1992) notes that there has been approximately 75 leveraged buyouts in Australia between 1983 and 1990. Figure 1.4 exhibits the growth in the value of Australian buyouts exceeding \$10M.

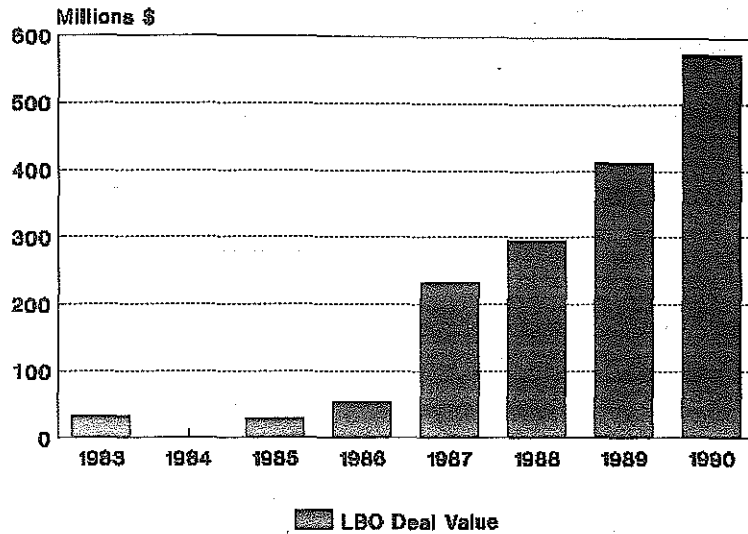
The two largest leveraged buyouts in Australia are Leigh-Mardon Pty Ltd and McEwans Limited, which are examined in detail in Chapters Eight and Nine, respectively.

The privatisation of government owned enterprises offers a source of growth for the leveraged buyout industry in the 1990s. Labor and Liberal governments at Federal and State levels have indicated their interest in public sector asset sales.

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Figure 1.4

## AUSTRALIAN LBO MARKET



Source: Brooks, 1992.

## 1.2 The Purpose and Significance of the Study

The purpose of this thesis is to gain an insight into the Australian leveraged buyout phenomenon. The thesis seeks to establish whether leveraged buyout theories reported in foreign empirical research apply to the Australian market.

Australian leveraged buyout research of this type is both timely and significant. The preceding section outlined the exponential growth in LBO transaction value in Australia during the 1980s, and with the lowest interest rates in a decade, a perception that the worst of the recession is over, and the potential for public sector privatisations, the 1990s could generate a resurgence in domestic buyout demand.



## Introduction

Leveraged buyouts are a contemporary financial innovation that challenge preconceived notions of how business should be conducted. They have had a significant impact on the US and UK manufacturing sectors (Waite & Fridson, 1989; Wright et al., 1991b). Between 1979/90, America's manufacturing output per worker-hour grew at 3.6% p.a., tripling the 1970s rate. Manufacturing contribution to GNP increased from 20% (1982) to 23% (1990), matching the halcyon days of the 1960s (They will return, 1991). Similarly, the annual average productivity increase in British manufacturing grew from 2% in 1972/79, to 4% in 1979/89 (To the victor these spoils, 1990). Accordingly, leveraged buyouts may have a role in restructuring the Australian manufacturing sector, making information discovery via empirical research important.

Research on Australian leveraged buyouts may indicate the extent to which foreign experiences have been replicated here. This thesis undertakes a comprehensive review of the literature pertaining to US and UK leveraged buyouts, and empirically tests Australian cases for evidence that supports or refutes theory. Establishing the theoretical framework which applies to the Australian LBO market is a logical first step that should facilitate the development of further buyout research.

## Introduction

### 1.3 The Research Problem

This research is believed to be the first of its kind in Australia. The research problem this thesis seeks to resolve is:

"Do Australian leveraged buyouts comply with expectations derived from foreign (US & UK) leveraged buyout markets"?

The following research questions provide a systematic means for analysing actual Australian leveraged buyouts in a real-life (as distinct from a laboratory) context:

- (i) Are industry characteristics of Australian leveraged buyouts consistent with those reported in the US and UK?
- (ii) Are business attributes of LBO target companies conducive to leveraged buyouts?
- (iii) Do leveraged buyouts concentrate equity ownership among directors, managers, employees and LBO specialists?
- (iv) Are Australian leveraged buyouts as extensively geared as those reported in the US and UK?
- (v) How have leveraged buyout companies performed in the post-buyout period?

### 1.4 Outline

Chapter Two critically reviews theoretical and empirical research on leveraged buyouts. Chapter Three outlines the scope of the thesis and identifies variables; which provide the terms of reference for methodology developed in Chapter Four. Chapters Five through to Ten comprise case studies on Australian leveraged buyouts; and Chapter Eleven summarises and concludes the paper. Chapter

## Introduction

Twelve suggests topics for future research on Australian leveraged buyouts. Appendix A defines the ratios used in the case studies.

## CHAPTER 2

### Literature Review

#### 2.1 Theory

Theoretical research on leveraged buyouts purports to explain the source of value created in the buyout process. This has important consequences for managers, LBO specialists and financial institutions intending to capitalise on the selection and restructuring of buyout targets; and for academics and policy-makers concerned with the distribution of wealth.

The theoretical review outlines how changes to capital and ownership structures reduce agency costs and increase entrepreneurial incentives for managers. Subsequent revisions to asset and organisation structures reinforce comparative advantage and operating efficiency.

Research cited in this chapter is the foundation from which the theoretical framework is derived (Chapter Three) and empirical results are referenced. The degree of homogeneity between domestic and foreign (US & UK) buyouts may then be inferred.

##### 2.1.1 Capital Structure and Corporate Control

Leveraged buyouts are characterised by simultaneous changes to the capital and ownership structures of the entity. The capital structure is reconstituted to maximise debt utilisation, and financial claims on the firm's assets are concentrated in incumbent managerial and institutional

portfolios. How do these revisions propose to increase firm value?

A traditional Modigliani-Miller corporate tax approach implies leveraged buyouts exploit the tax deductibility of interest payments to reduce the firm's cost of capital. The increased cost of equity capital attributable to leverage induced financial risk does not perfectly offset the use of 'cheaper' debt (Copeland & Weston, 1988). Therefore, the optimal capital structure consists entirely of debt.

Modigliani and Miller implicitly assumed personal taxes on debt and equity were identical (Brealey & Myers, 1988). Differential personal taxes levied on debt and equity, and other sources of taxation deductions moderate the extreme all debt solution.

The tax timing option granted to stockholders, and tax credits on dividends paid by taxable corporations, disadvantage debt holders. To overcome the relative tax penalty corporations offer higher pre-tax returns on debt instruments. The equilibrium market return is determined by grossing-up a tax-free institution's return by the corporate tax rate. Therefore, most of the interest tax subsidy is lost (Miller, cited in Copeland & Weston, 1988).

Depreciation and other deductions also dilute the taxation benefits of debt. That is, demand for interest tax shields is inversely related to the availability of substitutes, given earnings must be generated to benefit

from tax shelters (DeAngelo & Masulis, cited in Copeland et al., 1988).

Miller concludes that the taxation advantage of debt is neutralised such that firm value remains independent of capital structure. This thesis prefers the more realistic DeAngelo-Masulis (Copeland et al., 1988) extension which accounts for differential effective corporate tax rates. Companies with high effective tax rates may reduce their cost of capital through judicious leveraging.

The preceding theorems are important to this research because they demonstrate that superficial inspection of capital structure will not explain how leveraged buyouts increase firm value. High effective tax rates may be one of numerous explanatory factors.

Subsequent research relaxed Modigliani-Miller assumptions pertaining to bankruptcy costs, cash flow distributions and management wealth incentives.

Jensen and Meckling (1976) argue that the combination of bankruptcy costs and the corporate tax subsidy on interest payments affects the probability distribution of future cash flows. The Modigliani-Miller assumption that the probability distribution of future cash flows is independent of capital structure is invalid where the probability of bankruptcy is positively correlated with relative debt levels. Agency theory provides a rationale for value creation in leveraged buyouts by evaluating the impact of

capital and ownership structures on the firm's future cash flow distribution.

An agency relationship exists when principals (stockholders) engage an agent (managers) to perform a service on their behalf (Jensen & Meckling, 1976). Decision-making discretion is granted to agents as part of the fiduciary agreement. Centralised management teams facilitate specialisation and reduce negotiating and bargaining costs (Anderson, 1978). However, the separation of ownership and control results in divergent wealth maximisation incentives.

Leveraged buyouts capitalise on disparity between the cost of concentrating diffuse ownership and potential for agency cost savings (Jensen & Meckling, 1976). The proportion of debt financing in the capital structure is the key element in a leveraged buyout's ability to reduce agency costs. Debt enables entrepreneurial managers with limited personal resources to acquire significant equity in the company; and guards against an over-retentive dividend policy. Ownership of debt claims accord financial institutions greater control over their investments whilst complying with the regulatory framework.

Leveraged buyouts align managerial wealth incentives with stockholders by concentrating equity ownership. Since equity represents a small proportion of the reconstituted capital structure, managers and LBO specialists may acquire significant equity interests. The balance is held in a

limited number of institutional portfolios as part of a strip financing package.

Concentrating equity ownership has two advantages:

(i) Managerial wealth dependence on residual claims on the firm's assets motivate policies which maximise cash flow. Managers have less incentive to consume perquisites since they bear significant personal losses when firm value declines.

(ii) Corporate governance by LBO specialists ensures cash flow maximisation does not emanate from opportunistic managerial activity, but from enhanced operating capability. The specialist's wealth is negatively affected by short-term managerial decisions that satisfy immediate bonus plan objectives at the expense of future value. In addition, the specialist's success at protecting institutional clients will determine their amenability to future buyout investments.

Therefore, substantial managerial equity ownership aligns personal wealth maximisation incentives with firm value, reducing agency costs. Enhanced corporate governance exerts control over activities not covered by contracts (Berglof, 1991).

The lack of correlation between executive pay and performance (Jensen & Murphy, 1990); and managerial preference for internal financing (Brealey & Myers, 1988) encourages conservative dividend policy. The retention of cash flow beyond that required to fund positive net present



value projects (free cash flow) is a result of managers desire to maximise their utility and secure independence from capital market monitoring (Jensen, 1986).

Leverage reduces agency costs of free cash flow by stipulating distribution of cash otherwise available for discretionary spending (Jensen, 1986). The economic implication is that free cash flow disbursed by corporations is reallocated by investors (according to their risk/return profile) to the highest valued use. The capital market exerts greater control over subsequent capital expenditure due to veto power over company submissions for project funding.

Therefore, leveraged buyouts motivate and discipline managerial behaviour (Easterwood, Seth & Singer, 1989) through direct stock ownership and corporate governance. Onerous principal and interest obligations make cash flow generation the prime objective.

The beneficial effects from increasing leverage may be curtailed by agency costs of debt. This concerns the potential expropriation of wealth from debt holders as a result of managers fiduciary relationship with stockholders. Leveraged buyouts control agency costs of debt through concentrated debt ownership, protective indenture provisions, and innovative financing techniques.

The importance of concentrated debt ownership in leveraged buyouts has not been articulated in the literature. Senior debt syndicated by banks typically

dominate leveraged buyout capital structures (Easterwood et al., 1989; Burke & Fite, 1990; Vernick, 1991). This thesis suggests corporate governance exercised by the senior debt consortium is more effective at binding the specialist to maximise firm, as opposed to equity value, than notions of foregone 'carry' (Easterwood et al., 1989) or 'reputation effects' (Easterwood et al., 1989; Jensen, 1989). Senior debt concentration combined with indenture provisions (Baker & Wruck, 1989) prevent dominant stockholders from transferring value.

Indenture provisions alleviate conflicts of interest between debt and equity holders by limiting default risk to the level priced when the debt was issued. "The . . . effect of . . . [debt] covenants is to restrict . . . the source of funds for scheduled interest and principal repayments and the use of funds in excess of . . . [that] amount" (Baker & Wruck, 1989, p. 170). Standardisation of indenture provisions cost effectively reduces monitoring and bonding costs.

Agency costs of debt are also mitigated by innovative strip and convertible debt financing techniques. Conflicts of interest among security holders are overcome by selling portfolios comprising subordinated securities in mezzanine strips. Strip holders receive rights to intercede in the leveraged buyout as each security defaults, and accordingly, have little incentive to transfer wealth (Jensen, 1986).

Convertible debt relieves cash flow demands on leveraged buyouts and enables participation in prospective shifts in the return distribution. Attempts to expropriate wealth from debt holders may be avoided through conversion.

Agency costs of debt include direct legal costs, foregone warranties and services (Rappaport, 1990; Copeland & Weston, 1988) and labour specificity problems (Libecap, 1988) associated with bankruptcy. Derivative instruments moderate bankruptcy risk, for example: floating rate exposure may be capped by interest rate put options, short hedged with interest rate futures contracts, or swapped for net fixed rate exposure. Therefore, leveraged buyouts support levels of debt previously considered infeasible.

The proportion of debt in leveraged buyouts facilitates the transfer of corporate control in low performance states of nature (Berglof, 1991). This is analogous to Jensen's (1989, p. 73) "Privatisation of Bankruptcy", where control passes to creditors when indenture provisions are breached and/or default occurs. The level of gearing compels senior lenders to reorganise rather than liquidate, because prompt transfer of control ensures going concern value exceeds liquidation value.

Different internal and external valuations of a company result in agency costs of information asymmetry. Managers dissatisfied with a low stock price or cognisant of takeover vulnerability, may initiate a leveraged buyout, eg. Ross Johnson's RJR Nabisco bid (Saporito, 1989). Leveraged

buyouts unambiguously signal the bidding group's confidence in the future performance of the firm, decreasing information asymmetry costs (Arzac, 1992).

According to the aforementioned theory, State-owned enterprises should incur considerable agency costs. Managers do not have ownership interests or performance oriented remuneration, and external governance is weak due to the lack of traded equities and default free debt status (Wright, Thompson, Chiplin, & Robbie, 1991). Provided entry restrictions are not prohibitive agency theory would imply an active leveraged buyout market in Public sector enterprises.

Therefore, agency theory rationalises value creation in leveraged buyouts by evaluating the impact of capital and ownership structures on future cash flow. Recognising that capital and ownership structures are interrelated allowed agency theorists to supplement Modigliani-Miller research.

Fama's (1980) justification of the traditional public corporate structure has important implications for this research. His paper implies the benefits from leveraged buyouts, defined as agency cost savings less costs of concentrating diffuse ownership (Jensen & Meckling, 1976), may be overstated.

Fama (1980) rejected the popular notion that efficiently diversified claim holders are responsible for monitoring management. By dichotomising entrepreneurial activity into management and risk components, Fama (1980)

demonstrated that labour and takeover markets could effectively inhibit aberrant managerial behaviour. Punitive threats of dismissal, external control transfers and attendant downward revisions in future wage expectations mitigate agency costs.

However, decisions taken by managers to entrench their positions, such as selecting compliant directors (Jensen, 1989) and inserting takeover defense clauses, impede Fama's (1980) market mechanisms. Unlike labour and takeover markets, leveraged buyouts provide effective internal monitoring where more immediate sanctions are applied as a result of poor performance.

Transaction costs and managerialism are two further caveats to the efficiency of takeover market controls. Takeovers do not proceed at the margin since acquirers demand adequate compensation for risks and material transaction costs. Hence firm value may decline considerably before acquisition interest develops. Although takeover markets exert control over target managers in the extreme, paradoxically they afford protection to acquirers through firm size increases.

Fama (1980) and Jensen (1989) acknowledge that public stockmarkets reduce the risk of equity ownership, and hence, the cost of capital by facilitating diversification and liquidity. Since leveraged buyouts remove companies from stockmarkets the cost of (unlevered) equity capital may

increase. Therefore, the cost of concentrating diffuse ownership involves more than direct acquisition expense.

The propensity for investing in buyout equity through specialist LBO funds attenuates problems associated with delisted stock. Brownstein (1989) and Newport Jr. (1989) assert pension funds commit between two and five percent of their portfolio to leveraged buyout funds, hence liquidity and diversification issues do not arise.

The extent to which Fama's (1980) theory reduces potential benefits from leveraged buyouts is an empirical issue. This thesis closely examines the constitution of Australian leveraged buyouts for evidence that is consistent with, or repudiates the preceding theory as an explanation of value creation. The opposing ideologies of Fama (1980), Jensen and Meckling (1976) suggest unique firm and industry characteristics affect the validity of leveraged buyouts, a theme developed in the following section.

Finally, agency theory is not predicated on the belief that practitioners calculate agency cost savings when evaluating potential leveraged buyouts. Applying a Friedman and Savage (1948) argument, this thesis contends practitioners need only behave as if they perform the relevant calculations. The distinction is important because elements of agency theory are neither observable nor directly quantifiable. This research derives proxy tests (Chapter Three) which enable the impact of agency theory to be inferred.

### 2.1.2 Asset Structure

The previous section acknowledged the inextricable link between capital and ownership structures. Leveraged buyouts reconstitute these structures, inducing operating efficiencies and superior incentives. This section considers how asset structure influences the magnitude and composition of firm capital, and the effect increased debt servicing commitments have on asset management.

Leveraged buyouts do not universally apply to each company or industry sector in the economy. Abundant leverage places onerous demands on companies, such that buyout suitability is contingent on resilient repayment capacity. Repayment capability is deduced from anticipated net operating cash flows generated by the firm's portfolio of assets, and the liquidity of unwanted assets divested from the buyout.

Therefore, asset structure affects the level of gearing the firm can prudently support (Libecap, 1988). Asset structures that produce stable cash flow have low business risk capable of accomodating the financial risk inherent in leveraged buyouts. Asset structures which are relatively immune from business or economic cycles, produce known brand names with strong market share (Kohlberg Kravis Roberts & Co., cited in Rappaport, 1990), and are not capital intensive (Rappaport, 1990), demonstrate low business risk.

The asset structure also dictates the extent to which net operating cash flows can be enhanced by active asset

management. For example, firm's with copious working capital (Baker & Wruck, 1989; Smith, 1990) or underutilised fixed asset capacity (Kuhn, 1990) offer managers opportunities to increase cash flow. In contrast, capital intensive asset structures do not support leveraged buyouts since marginal operating performance improvements require large capital injections.

Substantial growth in the number and value of leveraged buyouts (Chapter One) reflects intense competition among financial institutions soliciting fee income and/or capital returns from buyout involvement. Ambitious acquisition multiples paid by winning bids provided the impetus for aggressive financing predicated on asset disposition(s). This activity culminated in the provision of bridge financing by commercial and investment banks.

Increasing rate notes are frequently used to bridge asset divestitures. Their design penalises late repayment through interest rate ratchets approximating twenty five basis points per quarter. An asset structure characterised by low specificity can support extensive debt levels (Williams, in Libecap, 1988), since readily separable assets may be redeployed to higher valued uses via liquid secondary markets, generating cash flow.

There are two principal advantages from asset sales: (i) Business risk may be reduced by divesting assets with volatile or deferred cash flow distributions. A corollary of downsizing is the renewed focus of managerial and other



resources on those operations which possess comparative advantage (Easterwood et al., 1989; Muscarella & Vetsuypens, 1990).

(ii) Proceeds from asset disposals may be used to discharge a portion of the firm's indebtedness, alleviating financial risk.

While divesting unwanted liquid assets generates cash flow, sale and leaseback agreements written on assets still required by the company similarly enable non-operating resources (eg. land and buildings) to amortise debt. Asset characteristics determine sale and leaseback suitability.

Therefore, lenders evaluate the disposal value of assets collateralising loans and the stability of future cash flows when arranging debt capital for leveraged buyouts. The level of equity capital is limited to prevent dilution of investor returns. Hence, the asset structure influences the magnitude and composition of the capital structure.

Prima facie, acquisition programs in leveraged buyouts indicate the pursuit of asset optimisation rather than merely break-up value (Muscarella et al., 1990; Baker & Wruck, 1989). Control exerted over capital expenditure due to the distribution of free cash flow provides greater assurance that negative net present value investments will be rejected (Jensen, 1986). Accordingly, increased debt servicing commitments are expected to motivate asset management practices which adhere to firm value criteria.

The emphasis on directing cash flow toward debt amortisation could detrimentally affect maintenance, research and development expenditure essential to long-term investment. Palepu (1990) argues leveraged buyouts do not occur in R&D intensive industries, but acknowledges that cash-strapped buyouts may reject positive net present value investments.

### 2.1.3 Organisation Structure

The revised capital, ownership and asset structures in leveraged buyouts induce concomitant organisational reform. Leveraged buyouts implement organisational changes which increase operating autonomy and align executive remuneration with cash flow.

Operating autonomy is granted to managers since equity investors do not possess firm specific operating expertise or the requisite human resources (Jensen, 1989). Therefore, buyouts are characterised by centralised strategic decisions and decentralised operating decisions (Easterwood et al., 1989). Williams (in Libecap, 1988) concurs, arguing leveraged buyouts exhibit high managerial specificity since the specialist's marginal productivity is maximised when its capital and other resources are applied to restructuring, rather than operating activities (Muscarella et al., 1990).

Hence, the strength and cohesiveness of the management team is an important factor in leveraged buyouts (Burke & Fite, 1990). Specialists contribute to the strategic direction of the firm and advise managers on the transition

from profit to cash flow maximisation. Executive incentive remuneration supplements corporate governance by motivating cash flow generation, alleviating negative effects from managerial equity ownership, and reducing buyout risk.

Specialists introduce executive remuneration schemes which incorporate bonus plans with cash flow performance targets. The material rewards offered for achieving cash goals compensate managers for unique risk bearing associated with undiversified portfolios (Baker & Wruck, 1989). Therefore, incentive schemes mitigate managerial bias toward conservatism that undiversified portfolios may provoke.

In addition, the incentive scheme is a variable cost that is positively correlated with the firm's cash flow distribution. Accordingly, increasing the bonus component makes cash outflows more variable, decreasing the asset beta.

Scheduled debt repayments and bonus performance incentives provide the impetus for severe cost cutting, particularly from corporate overheads. The decentralisation of operating decisions requires less bureaucratic support, and buyout executives may respond by eliminating intermediate hierarchical levels (Easterwood et al., 1989; Jensen, 1989). Corporate administrative resources may also be pared if assets are divested.

Baker and Wruck (1989) suggest the shorter lines of authority engender flexible responses to market vagaries since communication and decision making become more

efficient. Similarly, Muscarella and Vetsuypens (1990) conclude that "the buyout process create[s] a new organisational structure which appears . . . more efficient than its public predecessor" (p. 1412). Rappaport (1990) is critical of management's ability to capitalise on this efficiency due to alleged financial inflexibility caused by extensive debt.

Therefore, although leveraged buyouts may achieve marginal cost of capital savings, they do not appear sufficient to explain the magnitude of buyout gains. A more plausible explanation for value creation is provided by agency theory, whereby internal conflicts of interest are mitigated principally through the mechanism of debt utilisation. The theoretical review demonstrates that leveraged buyouts fundamentally reconstitute the interrelated capital, ownership, asset, and organisation structures.

The theoretical review outlines the advantages of having a comprehensive understanding of the theory underpinning leveraged buyouts. Managers, specialists and financial institutions may avoid the pitfalls of ill-conceived buyouts by correctly identifying LBO candidates and restructuring activities likely to yield high returns. They also provide some explanation as to why leveraged buyouts might be preferred over other reorganisation techniques.

Palepu (1990) for example, compares leveraged buyouts with leveraged recapitalisations. The implication that partial corporate restructuring may achieve similar returns to buyouts is not supported by the theory. This thesis contends that leveraged buyout performance is attributable to complete structural emphasis on cash flow generation. In contrast, leveraged recaps lack corporate governance by major investors, such that managers have incentive to approve risky projects, increasing the cost of debt capital.

Rappaport (1990, p. 100) believes public corporations may achieve similar benefits to leveraged buyouts through "shareholder value". However, buyouts not only facilitate change but more importantly, offer managers incentive to do so. Managers are unlikely to subject themselves to difficult trading conditions and stringent corporate governance unless they control operating decisions and participate in the firm's success.

The theoretical review facilitates development of the theoretical framework and forms the basis for generalisation of empirical results (Yin, 1984). The degree of congruence with foreign buyout models may then be inferred. The following section examines empirical work conducted overseas for evidence that supports or refutes existing theory.

## 2.2 Evidence

This section reviews empirical evidence on leveraged buyouts conducted in the United States and the United Kingdom. These studies have been classified into three

categories which examine different aspects of the buyout phenomenon.

Researchers have analysed public corporations that were subsequently targeted for leveraged buyouts. Generally, attributes indicative of LBO candidature were consistent with theoretical expectations.

The controversy regarding wealth creation or redistribution in leveraged buyouts has attracted considerable research effort. A comprehensive review of these papers reveals statistical support for the economic wealth creation hypothesis.

Finally, case studies investigate particular buyouts to determine whether the phenomena identified in large sample studies are representative of individual transactions.

#### 2.2.1 Industry and Company Characteristics

Bull (1989), Easterwood et al. (1989), Waite and Fridson (1989) categorise leveraged buyouts by industry, spanning 1971-1988. The latter study was more comprehensive since it involved numerous buyouts over a long period, and industry LBO transaction value was normalised by industry share of Gross Domestic Product. Table 2.1 discloses the most intensive leveraged buyout industries.

The LBO intensive industries closely comply with preconceived notions of buyout suitability. All involve the manufacture and/or sale of relatively mundane products resilient to economic cycles. In addition, these industries

reflect mature sectors of the economy with low growth prospects.

Table 2.1

Leveraged Buyout Intensity Ratios

Industry	LBO Intensity
Stone, clay, and glass	13.9
Apparel	8.1
Textiles	7.9
Food	5.1
Paper	4.5
Electrical machinery	3.0

Source: Waite and Fridson, 1989, p. 46.

Waite and Fridson (1989) derive a cash flow volatility regression estimate which measures the standard deviation of industry annual cash flow relative to cash flow implicit in the S&P 400 Industrial Index. Fourteen of the fifteen LBO intensive industries demonstrate low cash flow volatility. In contrast, five of six non-LBO intensive industries had high cash flow volatility. Waite and Fridson (1989, p. 46) conclude that there is "a concentration of leveraged buyouts in . . . industries . . . best equipped to support them".

Maupin, Bidwell and Ortegren (1984) apply discriminant analysis across a paired sample of sixty three buyouts and public companies in 1972-1983. Buyout targets had higher mean cash flow than firms remaining public for both years preceding the event, and in most cases, lower cash flow

variation. Over a similar period, Bull (1989) finds mean cash flow adjusted for sales to be 145% of industry average. Regression models run by Singh (1990) lend credence to the significance (at 5%) of cash flow as a determinant of leveraged buyouts.

Three further variables which influence leveraged buyout predictability are dividend yield, income taxation, and working capital.

Maupin et al. (1984) report mean dividend yields for buyout targets significantly exceed those of non-target companies. Higher debt servicing commitments may be maintained where cash previously allocated to dividends is redirected to debt amortisation. Prima facie, this appears to contradict Jensen's (1986) free cash flow hypothesis. However, Jensen's theory is concerned with retention of cash flow beyond that required to fund positive net present value projects. Given high cash flow and slow growth it is plausible that excessive retentions occur even with higher average dividend yields.

Mean effective tax rates for buyout targets were 112% of industry average (Bull, 1989). Kaplan (1989a), Lehn and Poulsen (1988) disclose significant correlation between buyout premiums and estimated tax benefits. Substantial taxation deductions utilised by leveraged buyouts defer tax liabilities and cash outflows, increasing fixed charge coverage. Lowenstein (1985) asserts tax-free status could prevail for five years.



The level of gearing does not appear to differentiate buyout targets from test samples. Average target firms have more conservative capital structures (Maupin et al., 1984), however regressions performed by Singh (1990) and Maupin et al. (1984) deem the relationship insignificant.

These results are consistent with the DeAngelo-Masulis (Copeland et al., 1988) thesis on optimal debt levels. Leveraged buyouts seem indifferent to a target's capital structure unless high effective tax rates promote cost of capital reductions.

Indifference to the target's capital structure may be partially explained by control group selection. Maupin et al. (1984) and Singh (1990) use industry rivals to control experimental noise within industries. However, research designs of this genre will not account for debt ratio differences between industries. In the USA for example, in 1986, electrical machinery (LBO intensive) and petroleum (non-LBO intensive) industries had average debt ratios of 29% and 49% respectively (Brealey & Myers, 1988).

Empirical research indicates buyout targets have working capital 'slack', the elimination of which creates low-cost finance. Smith (1990) found high industry adjusted accounts receivable and inventory holding periods; and Maupin et al. (1984) note relatively high mean cash intervals (though not statistically significant). Receivables turnover was found to be a determinant of leveraged buyouts at a 10% confidence level (Singh, 1990).

Price to book value discounts and unsolicited takeover offers also appear common to buyout candidates. Maupin et al. (1984) note buyout targets have significantly lower price to book value ratios. On average, buyout targets trade at a discount to book value (DeAngelo et al., 1987). Hence buyouts mitigate agency costs associated with asymmetric information by disclosing 'true' market values.

Prior takeover attempts discriminate between buyouts and non-buyouts at a 1% confidence level (Singh, 1990). Stringent third party corporate governance ensures leveraged buyouts are not principally used to secure management jobs. Competitive bidding reinforces the resolution of asymmetric information, preventing minority freezeouts.

Therefore, industry and company characteristics which invite leveraged buyouts are consistent with preceding theory. Prime candidates reside in industrial sectors relatively immune from economic cycles and produce large amounts of stable cash flow. High dividend yields and high effective tax rates provide additional sources of cash flow, with the latter facilitating cost of capital reductions. Excessive working capital may indicate a potential source of cost effective, short term finance. Book value discounts and prior takeover attempts collectively reduce asymmetric information costs.

Kieschnick Jr. (in Amihud, 1989) counsels caution when interpreting Maupin et al. (1984) results, since joint distributions of independent variables do not form

multivariate normal distributions required by discriminant analysis. Kieschnick Jr. uses a logit framework (as per Singh, 1990) to overcome these errors and finds no support for Maupin et al. (1984) results. Hence, if Kieschnick Jr's criticism is valid, then the dividend yield result may be anomalous. All other Maupin et al. (1984) results reported in this section were substantiated by other research.

### 2.2.2 Corporate Restructuring

The previous section confirmed theoretical propositions regarding industry and company characteristics peculiar to leveraged buyout targets. This section considers changes to corporate structure and performance as a result of the buyout. The conclusions drawn from the empirical review support wealth creation consistent with the agency cost framework.

#### Ownership Structure.

The concentration of equity ownership is evident in several research papers. Kaplan (1989b) found median management team equity holdings increased from 6% to 23% in large (>\$50M) public company buyouts. Directors and managers held 19% of pre-buyout equity, and in conjunction with LBO specialists, 99% of post-buyout equity.

Smith (1990) studied a similar period to Kaplan and presented further refinements of equity ownership. Median outside director equity holdings remained constant, while officers and major investors increased from 11% to 17% and

9% to 49%, respectively. Aggregating the above categories represents an increase in equity ownership from 35% to 95%.

Unlike the above research, Muscarella and Vetsuypens' (1990) sample included divisional leveraged buyouts. The top three divisional executives held no equity in the parent company prior to buyout in 80% of cases, averaging 0.25% equity in the remainder. Officers and directors held 63% of the equity following the (divisional and full) buyout, with top three executives accounting for 26%.

DeAngelo et al. (1987); Wright, Thompson, Chiplin, and Robbie (1991b) confirm that smaller scaled leveraged buyouts have higher average management equity ownership prior to, and after the buyout.

Therefore, there is strong support for the hypothesis that leveraged buyouts align managerial incentives with long term firm maximisation, and improve corporate governance, through intensive management and third party equity ownership.

#### Capital Structure.

Table 2.2 records the transformation in the capital structure framing the event date. The debt ratio essentially doubles in US buyouts with negligible change in the UK. The UK result is unexpected, especially since the debt ratio for all UK companies in 1983 was 29% (Berglof, 1991). Other studies on British buyouts do not disclose pre-buyout debt ratios, hence Kitching's results cannot be verified.

Table 2.2

Mean Debt Ratios Framing LBO (%)

Study	Period	Pre	Post
Muscarella et al. (1990)	1976-1986	41.4	90.6
Smith (1990)	1977-1986	59.0	101.0
Kitching (1989)	1980-1987	US: 45.2	97.6
		UK: 73.2	79.6

Debt ratios are defined as the sum of long term debt and current liabilities divided by total assets; except Smith, whose denominator is total tangible assets.

Table 2.2 indicates that US buyouts utilise debt to a greater extent than those in the UK. Not shown, is the US preference for funding buyouts predominantly with long term debt (Lehn & Poulsen, 1988; Kitching, 1989), as compared with more balanced UK capital structures.

The extent of the gearing in leveraged buyouts ensures a significant proportion of free cash flow is distributed in accordance with Jensen's (1986) hypothesis.

Although large sample studies have not considered strip financing, case studies document the prevalence of multiple financing layers and convertible securities which usually accompany this technique (eg. CBS Magazine division, O.M. Scott, RJR Nabisco).

Asset Structure.

Kaplan (1991) found 29% of LBO companies and 34% of LBO assets were acquired by other strategic buyers at least 3.67

years after the buyout. Over half of Smith's (1990) sample of 58 buyouts disposed of at least 20% of their property, plant, and equipment.

Muscarella et al. (1990) compute a significant difference (at 1%) between divisional and full leveraged buyout asset sales. Asset sales occurred in 29% of their sample, however the distribution was skewed, with 20% of divisional and 55% of full leveraged buyouts divesting assets.

Kitching (1989) uncovered a substantial role for sale and leaseback transactions, with over 70% of leveraged buyouts employing this technique to raise funds. Muscarella et al. (1990) find 25% of leveraged buyouts acquired assets.

The divestiture and acquisition programmes observed in leveraged buyouts support the contention that managers seek comparative advantage and increased firm value from asset optimisation.

#### Organisation Structure.

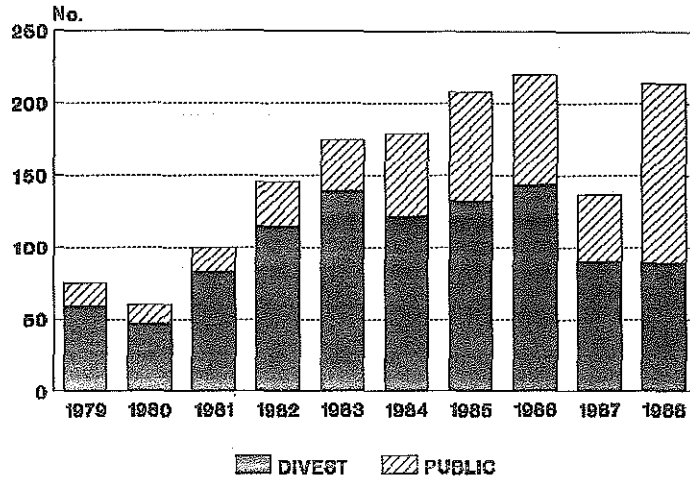
Baker and Wruck (1989) provide direct evidence on the decentralisation of operating decisions within a strategic framework controlled by a majority equity partner.

Figures 2.1 and 2.2 establish the abundance of divestment and privatisation buyouts in the United States and the United Kingdom. This thesis suggests divestment and privatisation buyout targets operate within more elaborate hierarchies by virtue of their accountability to a holding

company or Government owner. Independence promotes decentralised organisational structures.

Figure 2.1

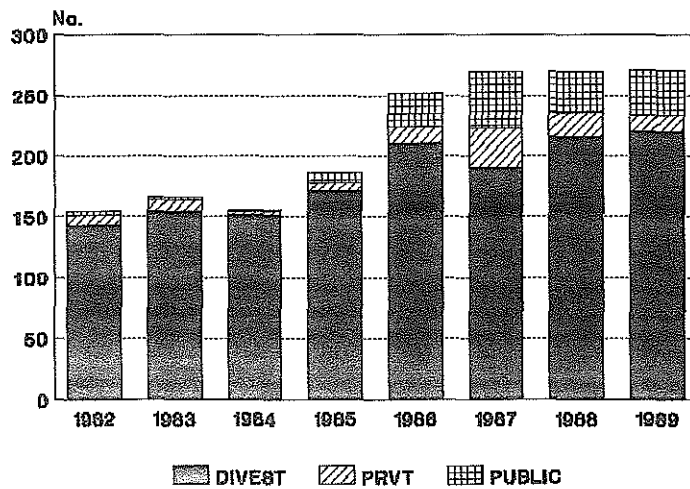
US BUYOUTS



Source: Wright et al. (1991)

Figure 2.2

UK BUYOUTS



Source: Wright et al. (1991)

Muscarella et al. (1990) report 96% of leveraged buyouts implemented managerial incentive compensation plans. Stock options, stock appreciation rights, and other stock incentive schemes featured in 72% of buyouts. Compensation plans typically increase the level and variation of bonus payments (Baker & Wruck, 1989). Therefore, material bonuses contingent on attaining cash flow performance targets motivate firm value maximising behaviour.

Muscarella et al. (1990) also note 22% of buyouts initiate cost reduction programmes, though they do not segregate these changes into their components.

Therefore, leveraged buyout organisation structures are leaner due to increased reliance on internal discipline and entrepreneurialism, and reduced managerial and support staff requirements caused by asset divestitures.

According to theorists, restructuring activities outlined in the empirical review should generate internal efficiencies and performance improvements. Leveraged buyout proponents assert structural metamorphosis promotes value maximising behaviour, whereas detractors allege wealth is transferred among stakeholders. The next section synthesises empirical research on the economic wealth or redistribution conundrum.

### 2.2.3 Economic Wealth Versus Redistribution

Discussions on the economic consequences of leveraged buyouts commence with the stock premium as a reference for financial gains. Stock premiums and performance improvements



must withstand expropriation claims from bondholders, taxpayers, employees, and stockholders; and should not be derived from expedient investment decisions which sacrifice long term prosperity.

#### Stock Premiums.

Public stockholders receive substantial premiums when leveraged buyout offers are consummated. Table 2.3 delineates average LBO stock premiums in the United States. UK bid premiums have not been published, though Wright et al. (1991b, p. 139) note " premia for going-private buyouts are in line with . . . hostile takeover bids".

Table 2.3

#### Average Stock Premiums in LBOs

Study	Premium%	Cf Days < Offer	No. Firms
DeAngelo, DeAngelo & Rice (1984)	56.3	40	72
Lowenstein (1985)	56.0	30	28
Lehn & Poulsen (1988)	40.0	20	89
Easterwood, Hsieh & Singer (1988)	48.6	40	110
Kaplan (1989b)	45.9	60	76
Amihud (1989)	First offer:	20	15
	Final offer:	20	15

Source: Amihud, 1989, p. 9.

Lowenstein (1985) disputes the assertion that LBO stock premiums represent the minimum amount by which bidders expect to increase firm value (Lehn & Poulsen, 1988; Jensen,

1989). He surmises that stock prices are determined by short horizon institutional investors such that (long horizon) bid premiums overstate gains available to public stockholders. Hence, stock premiums would be inappropriate for gauging wealth creation in leveraged buyouts under this hypothesis.

Capital market efficiency literature does not support the market segmentation implied by Lowenstein (1985). Abnormal returns would be eliminated by the competitive actions of risk arbitrageurs. Applying a conservative bid premium of 40%, this thesis calculates the US going-private buyout market yielded over \$60B in stock premiums for 1979-1988 inclusive. Therefore, buyout bid premiums produce significant wealth gains for original public stockholders.

#### Performance Improvements.

Numerous studies analyse leveraged buyout performance using ratios calculated from accounting data. Generally, leveraged buyouts have performed better than industry competitors and the market portfolio, subject to data limitations common to most buyout research.

Kitching (1989) and Singh (1990) found sales revenue and growth increased for the three years following the buyout. Controlling for industry effects, Singh (1990) attributed most of the improvements to divisional buyouts. Muscarella et al. (1990) note the median real rate of change in sales increased by 9.4% prior to public offering, but conclude the results were not exceptional. In contrast to

Singh (1990), most sales revenue increases were ascribed to full leveraged buyouts.

Bull (1989) found significant increases in mean industry adjusted sales to assets ratios. In contrast, Muscarella et al. (1990) report a decline in median asset turnovers compared with randomly selected control firms, particularly for full leveraged buyouts. Sales to employee ratios improved marginally, implying asset turnovers may be negatively affected by asset step-ups used in buyouts.

Therefore, empirical evidence regarding the impact of leveraged buyouts on sales revenue is inconclusive. Although sales increase, adjustments for industry and asset changes produce conflicting results.

Singh (1990) notes a significant decrease in industry adjusted accounts receivable and inventory holding periods. A survey of 182 UK buyouts reports 43% of respondents cite reduced debtor days following the buyout (Wright et al., 1991). Smith (1990) corroborates these findings, noting the industry adjusted cash operating cycle declines 18% within one year of the buyout, with negligible change in the payments period. Therefore, leveraged buyouts generate operating performance improvements through active working capital management.

Bull (1989) reports significant increases in median industry adjusted cash flow to sales ratios. Kaplan (1989b) notes cash flow increases when prorated by sales (45%, 72%, 28%) and assets (50%, 85%, 64%), for the first three post-

buyout years relative to the final pre-buyout year. Smith (1990) reinforces the cash flow returns, using a superior free cash flow proxy and eliminating non-operating assets from her analysis. Her observations suggest accounting accruals do not confound performance results.

Cash flow performance measures increase after leveraged buyouts, exceeding industry averages even after partially controlling for divestitures. Hence, there is strong evidence of performance improvements following leveraged buyouts.

On average, earnings before interest and tax (EBIT), operating returns and profit margins increase following leveraged buyouts.

EBIT increased over 50% for the five years post-buyout, relative to the buyout year (Kitching, 1989). Muscarella et al. (1990) find median EBIT improvements (40%) exceed 82% of randomly selected control firms. Industry adjusted operating income (EBIT + Depreciation + Amortisation) deflated by sales or assets, also increase after buyouts (Kaplan, 1989b).

Median leveraged buyout gross profit and operating margins significantly exceed their industry rivals (Muscarella et al., 1990). Deflating by sales, median gross profit and operating margins increase by 14% and 23% respectively, with divisional buyouts accounting for most gains. These results outperformed all industry control firms. Similar findings are presented for margins deflated

by assets, with Bull (1989) confirming the significance of these increases. Given inconclusive sales revenue results, margin spreads indicate better production cost control.

Lichtenberg and Siegel (1990) established that leveraged buyout plants have material increases in total factor productivity for the three years after the buyout. It is interesting that LBOs were associated with more productive plant than average in the three years preceding buyout.

Lichtenberg and Siegel (1990) note post-buyout productivity is not significant beyond the third year, which is explained by data aggregation across calendar years. The researchers conclude 1983-86 buyouts exhibit productivity improvements, whereas 1981-82 buyouts do not. The results are also consistent with the hypothesis that buyouts extract short-term gains which are not sustained.

Muscarella et al. (1990) examine returns to leveraged buyout equity between the LBO and IPO dates. The median annualised rate of return on equity was 268%, with divisional buyouts outperforming full buyouts. When compared with a similarly geared investment in the S&P500 index, they were unable to conclude that leveraged buyouts earn excess returns. The large return adequately compensated unusually high financial risk and illiquidity present in the investment.

Kaplan (1989b) used similar methodology to investigate the total return to capital (debt and equity), finding

investors earned a combined median market adjusted return of 77%. This gain was equally apportioned between pre-buyout and post-buyout investors. Wright et al. (1991) cite studies of UK buyouts which indicate superior market adjusted performance prior to, and after flotation.

Therefore, large, fair returns realised by leveraged buyout investors are consistent with enhanced economic performance. These returns incorporate aforementioned positive operating results, quantifying buyout effects and contrasting them with passive investment benchmarks. This evidence supports value creation in leveraged buyouts, however, research limitations qualify generalisation of results.

The heterogeneity of leveraged buyouts demands relatively large sample sizes to enable population parameters to be inferred. However, the private nature of the phenomenon impedes data collection, such that sampling units are selected from buyouts with public debt outstanding, or in the process of issuing public securities. Hence, non-representative sampling frames compound sample size concerns, although the direction of any bias is uncertain.

Lowenstein (1985) and Bull's (1989) generalisations are based on samples numbering 28 and 25 buyouts respectively. Muscarella et al. (1990) and Singh (1990) draw inferences on full leveraged buyouts from subsets containing 18 and 22 transactions. In addition, performance results of Kaplan

(1989b) have samples as low as 13 by the third post-buyout year. Therefore, there are external validity concerns associated with some leveraged buyout research.

The performance studies of Kaplan (1989b), Smith (1990), Lichtenberg and Siegel (1990) are conducted over a period of economic growth. For example, Smith's (1990) research spans 1977-1986, however, >80% of her sample is within 1982-1986. Accordingly, these studies do not placate concerns regarding buyout performance during economic downturns.

The relatively recent development of leveraged buyouts limits the longitudinal data available to researchers. Kaplan (1989b), Smith (1990) and Muscarella et al. (1990) have post-buyout periods predominantly between two and three years in length. Whether LBOs sustain short-term performance improvements is an issue for further research, particularly given Lichtenberg and Siegel's (1990) poor t+4 and t+5 productivity results.

#### Wealth Transfers from Bondholders.

The most emotive expropriation claims emanate from corporate investment grade bondholders. Empirical evidence confirms significant bondholder wealth losses result from buyout event risk, however, these losses do not offset stockholder gains. Corporate finance theory and legal concepts rebut bondholder remonstrations.

Lehn and Poulsen (1988) investigate bond price changes over a twenty day window centred on the LBO announcement

date. The average price change for non-convertible and convertible bonds were -2.46% and 0.49% respectively. They conclude the general bond market decline of 7.21% for the same period proves net bond price movements due to leveraged buyouts are insignificant.

Similarly, Marais, Schipper and Smith (1989) calculate a two day announcement abnormal return of -0.03%, and a post-announcement til completion return of -1.0% for 30 corporate bonds. Neither result was significant.

In contrast, for a ten day window centred on the LBO announcement date, Travlos and Millon (cited in Amihud, 1989) find significant cumulative non-convertible bond returns of -3.51%. Warga and Welch (cited in Crabbe, 1991) estimate risk adjusted prices for 43 non-convertible bonds decline 7.7% on average, for the period two months before to one month after the LBO announcement.

Amihud (1989) notes downgradings of corporate investment grade debt in 8 large leveraged buyouts; with Crabbe (1991) estimating bondholder losses from downgradings ranging 7.77%-11.83% for bonds involved in leveraged buyouts, takeover defense restructurings, mergers and acquisitions.

Asquith and Wizman (1990) resolve the conflicting empirical work on bondholder wealth effects by increasing the sample size and differentiating bonds according to their covenant protection. They found significant negative abnormal bond returns for two and four month announcement



windows, and for the entire buyout period. The whole sample abnormal returns of -1.1%, -2.2% and -2.0% exceed other studies, furthermore, the contrast between strong, weak and no protection bond covenants (+2.6%, -0.7%, -5.2%) is striking.

The evidence also suggests practitioners are cognizant of the importance of bond covenants when structuring leveraged buyouts. Bonds with strong covenant protection were called, tendered for, defeased or renegotiated during the buyout, whereas those with no protection remained outstanding.

The magnitude of pre-buyout bondholder wealth losses should be considered in context of the total wealth gains available in leveraged buyouts. Bondholders in Asquith and Wizman's (1990) study incurred abnormal losses of \$678M, a small fraction of the \$21.5B in stockholder gains. This confirms Jensen's (1989) anecdotal RJR Nabisco estimates of \$300M and \$12B. Therefore, bondholder wealth expropriation accounts for approximately 3% of the entire value increase in leverage buyouts.

Pre-buyout bondholders argue wealth expropriation is unfair, occasionally seeking restitution through litigation. Corporate finance theory and legal concepts disparage the alleged injustice to leveraged buyout bondholders.

To the extent that high grade corporate bonds contain covenants restricting mergers and acquisitions, bondholders may have expropriated wealth from stockholders during

conglomeration. For example, merging firms with less than perfectly correlated cash flow streams accord bondholders more protection from default. In addition, stockholders of 'both' firms in the merged entity provide funds in the event of default.

Delaware (USA) law precedents also address particular concerns of bondholders. Bonds are composed solely of "the periodic and regular payment of interest and the eventual repayment of principal" (Mannino, 1990, p. 41). Hence bond prices per se are not important to the courts. The prevalence of super poison put covenants and event risk data suggest bondholders implicitly accept limited indenture protection for higher returns.

#### Wealth Transfers from Taxpayers.

The tax efficiency of leveraged buyouts has been cited by researchers concerned with the social implications of the phenomenon. They contend that legislative bias subsidises leveraged buyouts, effectively causing other taxpayers to bear a disproportionate share of the taxation burden.

The suggestion that leveraged buyout utility is derived from taxation arbitrage is not supported by the literature. The empirical review demonstrates that tax affects price and deal structure, not the existence of buyouts. These results are reinforced by the resilience of buyouts to changes in tax legislation designed to reduce bias. This section concludes with anecdotal and empirical evidence which

implies taxation consequences of leveraged buyouts need not be negative, as first presumed.

Leveraged buyouts capitalise on the deductibility of interest payments. Directing cash flow to the amortisation of debt interest shields income otherwise subject to tax. Cramdown (payment-in-kind debt or PIK preferred stock, deep discount zero coupon bonds) maximises taxation benefits by generating current deductions and deferring cash (interest) outflows (Amihud, 1989). Kaplan (1989a) found the median value of interest deductions represented 14%-130% of the buyout premium paid to stockholders.

The Economic Recovery Tax Act (ERTA) 1981 and the Tax Reform Act (TRA) 1984 also allowed deductions for debt principal financing purchases through employee stock ownership plans (DeAngelo et al., 1987). The buyout group acquires the company, obtaining "an ordinary deduction . . . for the purchase price of shares in the company itself" (Lowenstein, 1985, p. 761). For example, Lowenstein (1985) ascribes 67% of the Dan River Inc. purchase price to ESOP tax savings.

Another source of tax shields for leveraged buyouts was the step-up in tax basis of depreciable assets to market value. The median value of increased depreciation deductions accounted for 30% of buyout premiums, however, fewer than 50% of leveraged buyouts since 1982 elected to step-up their assets (Kaplan, 1989a). Pre-buyout depreciation of \$500,000

pa for Gibson Greeting Cards Inc. became \$2.3M pa for the buyout group (Lowenstein, 1985).

Kaplan (1989a) notes the median tax to operating income ratio declines from 20% to 1% for the two years before, and two years after the buyout, respectively. This ratio increases to 15% one year prior to public offering, with only 16% of random selections having lower effective tax rates (Muscarella et al., 1990).

Researchers performed regressions to ascertain whether a discernable relationship exists between taxation and buyout premiums. They regressed tax deductions (Kaplan, 1989a) and tax liabilities (Lehn et al., 1988) against market adjusted premiums, finding a positive relationship in each case. Kaplan's (1989a) study is more rigorous since it applies a direct proxy for buyout (cf pre-buyout) tax effects.

Therefore, taxation benefits are an important source of value in leveraged buyouts. The above evidence is consistent with the hypothesis that tax gains do not constitute the entire return expected from leveraged buyouts. Changes to US tax legislation eliminating certain provisions exploited by LBOs has not suspended market activity. Just as buyouts occurred before ERTA 1981, they have also prevailed since: (i) TRA 1986 lowered the corporate tax rate from 46% to 34% and effectively removed the asset step-up election (Kaplan, 1989a; Newbould, Chatfield, & Anderson, 1992).

(ii) 1989 provisions disallow refunds for the portion of tax losses attributable to interest expense (Attacks on M&A innovations, 1991).

(iii) 1990 provisions discourage cramdown, requiring preferred PIK stockholders to treat redemption premiums (redemption price less issue price) as taxable dividends (Amihud, 1989).

A microeconomic evaluation of leveraged buyouts recognises the tax efficiency of these transactions, however, it does not follow that LBOs have a negative tax impact in the macroeconomy. Jensen, Kaplan, and Stiglin (cited in Palepu, 1990) estimate LBOs increase the present value of net tax revenues by 61%, under 1989 law. Cahill and Castorina (1990) analyse the tax effect of the RJR Nabisco buyout, estimating that for every \$1 'lost' as a result of the acquisition, the US Treasury recoups \$2.72 from direct and indirect sources outlined in Table 2.4.

Quantitative tax analysis may allay fears regarding the financial impact of leveraged buyouts on the economy, however, public policy must also consider the distribution of tax liabilities in the community. This qualitative effect has not been addressed by authors in this subject area.

#### Wealth Transfers from Employees.

Wealth may be expropriated from employees through pervasive cutbacks in labour or wages, and/or premature terminations of overfunded pension plans. The empirical review does not support the notion of widespread employee

layoffs associated with leveraged buyouts, rather an unwillingness to hire new labour at comparable industry rates. The extent to which lower employment levels are attributable to wealth transfers or productivity improvements is debatable. While evidence pertaining to pension terminations is mixed, the data suggests overfunded assets may explain a large portion of LBO bid premia.

Table 2.4

Projected RJR Nabisco Tax Effects (\$M)

Source	Tax Effect	
	Gain	Loss
Gain to stockholders from sale of stock	3,000	
Interest deduction on acquisition debt		3,200
Increase in dividend stream (Reinvest.)	590	
Subtotal	3,590	3,200
Tax payments by financial institutions on acquisition debt		298
Stockholder reinvestment of proceeds	1,200	
Post-acquisition asset sales	3,600	
Total	8,688	3,200
Net gain	5,488	

Source: Cahill and Castorina, 1990, p. 52.

Kaplan (1989b) and Smith (1990) note the change in employment levels from one year before, to one year after the buyout. The median change in employment is 0.9%, or 4.9% when controlling for divestments (Kaplan, 1989b). The number

of employees increased in 50% of buyouts, and 62% for the non-divestment subset. Muscarella et al. (1990) find the median number of employees fell 0.6% between the buyout and public offering. Controlling for divestiture however, they report employment growth of 17%.

Increased employment levels contrasts with anecdotal evidence. For example, Safeway dismissed 67,000 employees (38%) as part of its buyout (Magowan, 1989). The increased employment results however, are based on samples containing 26 (Kaplan, 1989b) and 12 (Muscarella et al., 1990) buyouts. Small sample sizes limit the inferences which may be drawn with respect to the population of leveraged buyouts.

Kaplan (1989b) and Smith (1990) report a decline in industry adjusted employment. Kaplan (1989b) notes a significant fall of 12%, which is consistent with Muscarella et al. (1990) finding 92% of random selections with median employment growth higher than leveraged buyouts. Lichtenberg and Siegel (1990) examined employment components, concluding the ratio of non-production to production employment (wages) declined 6.5% (15.3%) from  $t-1$  to  $t+2$ . Hourly and annual rates of compensation for production workers increased 2.3% and 3.6% respectively.

The evidence does not indicate that buyout gains result from widespread employment cutbacks, rather, the demand for new labour is below industry average. The reduction in white collar to blue collar workers implies a leaner organisation structure.

Ippolito and James (1992) examine buyouts over the period 1980-1987, noting a significant increase in pension fund termination rates following LBO announcements. The pension plans in their database have funding ratios averaging 180% of termination benefits, hence there is considerable scope for wealth losses to employees. In fact, excess assets acquired in terminations of defined benefit plans explain 50% of LBO premiums. Two competing hypotheses of premature termination are: (i) firm restructuring designed to improve competitiveness, and (ii) opportunistic breaking of implicit contracts. Although test results are mixed, the evidence suggests opportunistic transfers from employee pension entitlements may occur in leveraged buyouts.

Muscarella et al. (1990) do not elaborate on the finding that 5.6% of their sample buyouts terminate overfunded pension plans. The low percentage could indicate maintenance of employee emoluments, or a low percentage of pension plans (more particularly defined benefit plans) in the sample.

#### Wealth Transfers from Pre-Buyout Stockholders.

Managers have access to privileged information not available to potential acquirers or stockholders in the company. Their unique inside knowledge of future expected returns and their ability to influence internal accounting policies implies managers could underprice buyout offers and 'steal' companies from stockholders, despite bid premiums



based on public information. Most of the evidence pertaining to information asymmetry suggests underpricing does not occur. A competitive corporate control market and litigation risk disciplines management.

Lowenstein (1985) examined a sample of 28 buyouts, 11 of which were consummated by third party bidders competing with management. He implies the median (mean) 8% (14%) additional third party premium confirms management underpricing. Amihud (1989) cites Easterwood, Hsieh and Singer, Kieschnick, and his own results when concluding the difference between buyout premiums offered by management and third party bidders are insignificant.

Grammatikos and Swary (cited in Amihud, 1989) note firms targeted by management earn a risk adjusted 11%-14% less than firms targeted by third parties. Similarly, DeAngelo et al. (1987) find the median market value to net tangible book value ratio is marginally lower for management led buyouts. In contrast, Amihud's (1989, p. 20) sample "outperformed the market" for the five year period preceding buyout.

The inconclusive evidence outlined above prompted research which examined divisional buyouts, management ownership, and the effects of bid rescission.

Information asymmetry is more pronounced in full rather than divisional leveraged buyouts. Monitoring costs for public stockholders exceed the (shared) benefits derived from this activity. In contrast, the parent company has

incentive to expend resources since it receives the benefits from monitoring divisional management (Amihud, 1989). Hite and Vetsuypens (cited in Amihud, 1989) note stock price increases in full LBOs are comparable to size adjusted stock price increases resulting from divisional LBOs. Furthermore, full buyouts do not return to public ownership more often or faster than divisional buyouts, which would be expected if the equity was systematically underpriced (Kaplan, 1991).

Kaplan (1989b) also finds significant management non-participation in buyouts (9.66%), and unusually high management turnover around the event date. This would be highly irrational behaviour for informed managers aware of bid underpricing.

In addition, 74% of management initiated leveraged buyouts which failed to proceed were purchased by third parties (Kaplan, 1989b). This is consistent with a competitive corporate control market extracting high prices. Financial securities designed to allow high cash flow multiples to be paid (PIK, Zeros) attenuate underpricing concerns and grant participation in future value increases (Randhawa, 1990). That is, they reduce information asymmetry costs.

Smith (1990) concludes that managers do not exploit private information since third party leveraged buyouts achieve increases in cash flow equivalent to divisional buyouts. Alternatively, cash flow tends not to increase when buyout offers do not proceed. This corresponds with the

finding that preferred stock price increases are not sustained when offers are rescinded, suggesting information asymmetry is negligible (Marais, Schipper & Smith, 1989).

DeAngelo (1986) found no evidence of managers manipulating accounting earnings to artificially depress stock prices prior to the buyout. The potential conflict of interest is mitigated by the high level of litigation associated with these transactions. Stockholders may request an independent valuation of their stocks under the appraisal statutes in Delaware law. When determining value the courts rely on earnings levels, ratios and market prices. The prospect of detailed scrutiny of the offer and real personal wealth losses enforce implicit fiduciary contracts.

Therefore, it would appear that competitive acquisition markets and litigation risk combine to reduce the effects of information asymmetry during the bidding process. Management bidding groups do not expropriate wealth from pre-buyout stockholders.

#### The Impact on Long Term Investments.

The primary objective in leveraged buyouts is to generate cash flow to amortise debt obligations. If short term cash flow increases are sourced from pervasive cutbacks in investment, then long term competitiveness may be adversely affected. A reduction in discretionary expenditure is not necessarily detrimental; terminating negative net present value investments for example, increases firm value.

Kaplan (1989b) reports a decrease in median industry adjusted capital expenditure from -8% preceding buyout to -36% for the two year period framing the event date. Dividing by sales to control for divestiture yields -4% and -17%, respectively. Smith (1990) and Muscarella et al. (1990) confirm the downward trend in median capital expenditure to sales ratios. The latter note a decline of 11% between LBO and public offering, which is worse than 86% of random selections. Muscarella et al. (1990) findings should be interpreted with care however, as the sample contains only 25 buyouts.

Lichtenberg et al. (1990) find mean relative R&D intensity is lower for the three post-buyout years than for any of the seven pre-buyout years. R&D staffing levels and expenditure both decline, though the results are not significant. Figure 2.3 delineates mean differences in R&D intensity between buyouts and industry control firms.

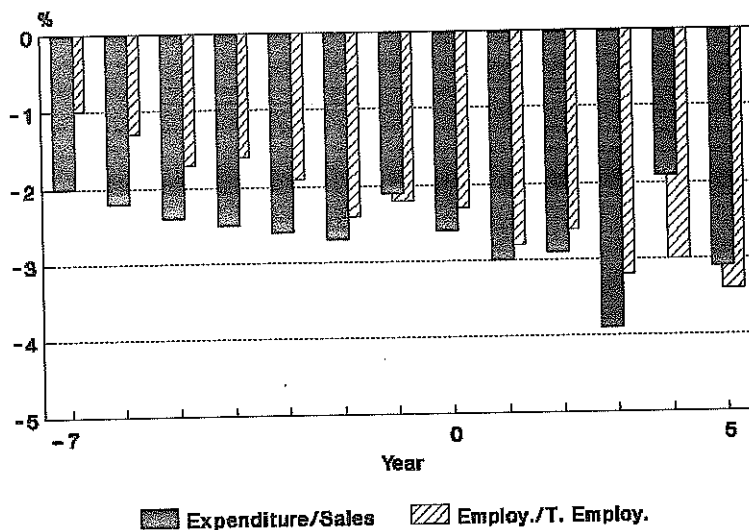
The most conspicuous feature of the graph is the negative R&D intensity for each of the seven years prior to buyout. This is consistent with the hypothesis that buyout targets reside in non-R&D intensive industries, and their R&D intensity is below industry average (Lichtenberg et al., 1990).

More research is required to resolve the long term investment issue. Given that reduced capital and R&D expenditure may reflect rejection of wasteful or positive

NPV investments, researchers must devise tests which will extract these effects before conclusions are drawn.

Figure 2.3

## R&amp;D INTENSITY



Source: Lichtenberg et al. (1990)

The majority of studies which evaluate the economic performance of leveraged buyouts conclude that the benefits are not solely composed of expropriations from company stakeholders. The stock premium and post-buyout operating and productivity improvements are sufficiently large to indemnify transfers that undoubtedly occur from bondholders. Indenture protection voluntarily waived by investment grade bondholders casts doubt on their claims of injustice.

The macroeconomy is expected to benefit from taxation assessments served on LBO participants, however, the microeconomic consequences of a redistribution in tax liabilities is uncertain. The evidence does not support the

notion of systematic redundancies funding buyout gains, although premature pension terminations contribute to stock premiums. Managers do not exploit privy information to the detriment of pre-buyout stockholders. Leveraged buyouts do not occur in R&D intensive industries or companies, but the impact of these transactions on positive NPV investments is inconclusive.

Therefore, the evidence generally supports the hypothesis that economic wealth is created by leveraged buyouts rather than merely redistributed. The results have important connotations for managers, practitioners, policy makers and academics concerned with the implementation, regulation and analysis of these transactions. The former may construct deals that maximise gains and avoid pitfalls, whereas the latter may focus on identified areas of empirical weakness as a guide for further research.

## CHAPTER 3

## The Theoretical Framework

The theoretical framework outlines the scope of the thesis and identifies variables pertinent to research objectives presented in Chapter One. The framework is derived from those aforementioned concepts and theories which possess empirical substance. This chapter establishes the terms of reference for the research methodology developed in Chapter Four.

3.1 Scope

To determine whether Australian leveraged buyouts exhibit characteristics similar to LBOs performed in the United States and the United Kingdom, this thesis examines three particular issues:

- (i) Industry and corporate characteristics of Australian leveraged buyout target companies;
- (ii) The ownership and capital structures of Australian leveraged buyouts; and
- (iii) The financial performance of Australian leveraged buyout companies.

Therefore, this thesis is concerned with exploratory research into the Australian buyout phenomenon. No attempt is made to estimate the distribution of future cash flows among stockholders, bondholders, taxpayers, and employees, since this task is more suited to large sample studies.

### 3.2 Variables

The following variables are expected to have an impact on leveraged buyouts in Australia. The direction of the expected relationship is indicated.

(i) To test the proposition that Australian leveraged buyout target companies exhibit stable cash flow, proxies for industry and corporate attributes have been developed.

Industrial characteristics of the main business line:

- Mature sector
- Low growth
- Non-cyclical
- Low technological requirements

Business attributes of the buyout target company:

- Leading market share or strong market niche
- Established brands, mundane products
- Product or market diversification

(ii) To examine the proposition that Australian leveraged buyouts concentrate equity ownership among managers, directors, employees and specialists:

- Ownership percentages of managers, directors,

employees and specialists are calculated as at acquisition date

(iii) Ratio and descriptive analysis tests the proposition that Australian leveraged buyouts have extensively geared capital structures:

- Debt/assets, long term debt/assets ratios



- Multiple financing layers, strip financing, equity kickers

(iv) Performance ratios test the proposition that Australian leveraged buyout companies produce relatively strong financial results:

- EBIT/sales, EBIT/assets ratios
- Sales/employees, profit/employees ratios
- Days creditors outstanding
- Days receivables outstanding
- Days inventory
- Capital commitments/fixed assets ratios

EBIT ratios have the advantage of nullifying the effects of the capital structure, since earnings are measured before interest and tax charges. The sales or assets denominator is a partial control for acquisitions and divestitures used by most researchers. The ratios will exceed the industry median if high profit margins and efficient capital utilisation are achieved.

Employee ratios measure the relative productivity and profitability of the workforce, where high ratios indicate strong performance.

The three working capital ratios are measures of the efficiency and effectiveness of short term capital management. They may be considered in isolation or combined as the cash cycle (CC):

$CC = \text{Days receivable} + \text{Days inventory} - \text{Days creditors}$

An efficient company would lower the cash cycle by reducing days receivable and days inventory, and increasing days creditors outstanding. That is, using trade creditors to fund purchases for the period.

The Capital commitments/Fixed assets ratio proxies for corporate expansion plans. It is an attempt to discern whether leveraged buyouts punitively defer capital expenditures for the sake of current interest payments.

The relative impact of the variables differ according to the buyout's unique circumstances. However, Australian leveraged buyouts are expected to exhibit at least some of the characteristics outlined.

## CHAPTER 4

### Methodology

The multiple case design is the most appropriate method for examining leveraged buyouts in Australia, given the paucity of domestic research and hence, limited understanding of the phenomenon. This thesis compiles data from a broad range of public and private sources, and conducts qualitative and quantitative analysis on a number of companies.

#### 4.1 Design

Multiple case design commences with the selection of companies for analysis. Cases are selected according to literal and theoretical replication principles (Yin, 1984).

Centurion Industries Limited, Joyce Corporation Limited and Automotive Components Limited are examples of literal replication. These manufacturing companies acquired during the mid-eighties were subjected to similar economy-wide events, and they exemplify the knowledge of leveraged buyout transactions that prevailed at the time.

Leigh-Mardon Pty Ltd, McEwans Limited, and the Bibra Lakes Unit Trust (Adventure World) were acquired in 1990, and accordingly reflect different macroeconomic factors and investor sophistication (theoretical replication).

The research proceeds by conducting individual case studies. Centurion, Joyce and Automotive Components are analysed in depth. By virtue of their mid-eighties buyout, there is at least five years post-buyout performance data.

Leigh-Mardon, McEwans and Adventure World cases do not include performance analysis due to potentially spurious outcomes resulting from a single post-buyout year. These latter buyouts are included primarily to contrast their capital structures with those formulated under more favourable interest rate conditions.

Finally, conclusions may be drawn from cross-case analysis by generalising results to theory.

#### 4.2 Data Collection

The data were collected from the following sources:  
 (i) Industry ratios were extracted from the Stock Exchange Financial and Profitability Reports of 1988 and 1992. The Summary Report and specific industry reports were utilised (Table 4.1).

Table 4.1

#### ASX Industry Reports

Company	IG No.	Industry Report
Centurion Industries	11	Engineering
Joyce Corporation	22	Misc. Industrials
Automotive Components	22	Misc. Industrials

IG No. = Industry Group Number

Automotive Components Limited has remained privately owned. It was assigned to the Miscellaneous Industrials group since most other firms in the (formerly) Automotive category were designated as Industry Group Number 22.

(ii) Company data were extracted from annual reports, prospectuses, investment proposals and funding submissions. The data were obtained from Australian Stock Exchange microfiche, company directors, chartered accountants, and investment bankers.

#### 4.3 Data Analysis

The data were analysed by assigning the buyout date as time 0, the first complete post-buyout financial year +1, and so on. Median industry ratios were preferred due to the presence of skewed distributions resulting from dominant companies.

Industry adjustments were performed by subtracting the median industry ratio from the corresponding company ratio each year, for the five year post-buyout period. Ratios utilised in this thesis are defined in Appendix A.

#### 4.4 Limitations

Limitations which may affect the veracity of thesis conclusions are outlined below:

- (i) Accounting ratios may be inappropriate for measuring true performance, due to management influence over accounting policies. However, all performance data is extracted from audited accounts.
- (ii) Changes in accounting ratios over time may proxy for other underlying variables which remain unknown.
- (iii) Centurion, Joyce and Automotive Components are all divisional/subsidiary leveraged buyouts. Therefore, pre-buyout financial data is unavailable. It is possible that

the division/subsidiary performed better prior to the buyout.

(iv) Reliance on private provision of data inherent in leveraged buyout research in Australia, may bias data toward successful transactions. That is, a reluctance on the part of principals to release data on failed buyouts. However, this thesis analyses McEwans Limited, which had a receiver manager appointed in August 1992.

## CHAPTER 5

## Centurion Industries Limited

5.1 Background

Partmont Pty Ltd acquired the Western Australian assets of Tomlinson Steel Limited (a subsidiary of Clyde Industries Limited) through a leveraged buyout in September 1985. The management and employee led buyout was partially in response to threatened closure of certain Tomlinson operations. The buyout was completed with the assistance of Western Capital Limited, a significant equity investor in the transaction.

Through a succession of name changes the buyout entity was eventually registered as Centurion Industries Limited on September 23 1986. Fourteen months after the leveraged buyout, Centurion listed on the main board of the Exchange through a public offering (November, 1986).

5.2 Industry Characteristics

Centurion is a heavy engineering company with established operations in steel fabrication, heat treatment, mechanical and non-destructive testing, heatform, rolling stock and boiler manufacturing and servicing. These operations have been performed by Centurion (Tomlinson) for several decades with processes that appear relatively routine. Although upgradings and refinements may improve operations, contemporary processes and products are not unlike those of past years. Furthermore, there would be little opportunity for new entrants to introduce new processes and gain comparative advantage. Accordingly, the

industry within which Centurion resides may be classified as mature.

The industry services an established clientele since the specialised nature of the products limits market appeal. The economic downturn preceding the buyout ensured short to medium term increases in demand could be accommodated within existing industry capacity. Hence, at the time of the buyout, the industry exhibited low growth prospects.

Although the manufacture of new boilers, rolling stock and pressure vessels are subject to the economic cycle, their ongoing maintenance, testing, spare parts and ancillary services mitigate revenue foregone from postponed production orders. For example, rolling stock and pressure vessels are produced for the mining and energy sectors. New purchase orders may reflect the commodity price level, however, maintenance is required to protect existing investment.

The manufacturing and testing technology associated with the industry appears to be conventional, established and with low probability of obsolescence. As alluded to previously, the technological processes are relatively routine and do not require extensive development. While heavy engineering is capital intensive its technological investment is quite robust.

Therefore, Centurion's industrial sector is consistent with theoretical expectations of a leveraged buyout candidate. Centurion's heavy engineering industry has



mature, low growth, low technological processes, where service business accords some protection against economic cycles. Waite and Fridson's (1989) LBO intensity ratios for fabricated metals (2.7) and non-electrical machinery (2.5) industries are just below the manufacturing average (3.0). Hence these industries are LBO intensive in the United States.

### 5.3 Business Attributes of the Target Company

Centurion forged a strong market niche within the heavy engineering sector. Its divisional operations have been established for several years, and the economic downturn immediately preceding the buyout eliminated several competitors.

Centurion maintained a virtual monopoly in boiler servicing and spare parts, a potentially profitable arrangement given Tomlinson Steel alone installed over 340 boilers in WA. In addition, Centurion was the Australian agent for Hoval and Buderus boilers, and had an exclusive licence for the manufacture and marketing of Heatform fireplaces in Australia.

In steel fabrication, Steel Mains Pty Ltd was Centurion's only West Australian based competitor capable of providing design through to installation services. Similarly, there were two WA competitors in the rolling stock construction market, however, Centurion possessed design drawings, shop facilities and personnel expertise advantages. In addition, distance and prohibitive

transportation charges formed an effective barrier against Eastern states entrants.

Centurion was the leading commercial heat treater with only three local competitors. The non-destructive and mechanical testing operations of the firm also had only three local competitors.

Therefore, Centurion established a strong market niche with few significant competitors. Monopolistic and oligopolistic markets, reinforced by franchise agreements, suggests the company was not subject to predatory pricing. Leveraged buyout proponents were reasonably assured of a stable cash flow base quite resilient to economic downturns and industry contractions.

The product line of Centurion may be described as mundane. Fire and water tube boilers, rolling stock, pressure vessels and tanks are relatively primitive products. The diversified product line and client register ensured Centurion was not reliant on a single market or client for a major proportion of its profits. Mundane products and diversified lines are consistent with low business risk, because the firm is less susceptible to risks of technological obsolescence or market collapse.

#### 5.4 Equity Ownership

Table 5.1 discloses the pattern of stock ownership when the leveraged buyout was initiated. The fully diluted equity ownership refers to the position immediately after options to subscribe for ordinary stocks have been exercised.

Table 5.1

Equity Ownership

Owner	%	Cum%	Fully Diluted %	Diluted Cum%
Robless	3	-	10	-
Wright	3	6	10	20
Bal. managers, employees	47	53	32	52
Western Capital Limited	47	100	48	100

The ownership percentages of senior executives (Robless and Wright) are consistent with those reported in the empirical review. For example, Kaplan (1989b) and Muscarella et al. (1990) note executive stock ownership of 23% and 26% respectively. Centurion's ownership pattern is most similar to Smith (1990), who found median senior executive ownership of 17%, and major investors of 49%.

Therefore, the high percentage of equity owned by executives, managers and employees aligns their wealth maximisation incentives with firm value. Residual claims on the firm's assets motivate cash flow generation and reduce perquisite consumption. In addition, the significant Western Capital presence provides enhanced corporate governance over activities not covered by implicit contracts. The reduction in agency costs associated with the concentration of equity ownership increases claim value because monitoring costs originally capitalised in the stock price are removed.

### 5.5 Capital Structure

The capital structure immediately after the buyout was extensively geared. The total debt to assets ratio was 84%, and the long term debt to assets ratio was 64%. These results are similar to those recorded in the empirical review (pp. 49-50).

The capital structure contained four distinct levels of financing: (i) Senior secured, (ii) Vendor, (iii) Cumulative redeemable convertible preference shares, and (iv) Ordinary shares. For a total consideration of \$2.36M, this would be the extent to which the capital structure could feasibly be layered. Strip financing and equity kickers were not used in the transaction. The senior credit and vendor financing were both secured, hence conflicts of interest between debt and equity holders in the event of default would remain.

Therefore, the proportion of debt in the capital structure is consistent with the distribution of free cash flow under Jensen's (1989) hypothesis. The high percentage of senior secured lending (64%) attenuates agency costs of debt, since senior claims protected by indenture provisions do not require costly monitoring. However, as noted above, distinct layers of capital do not reduce bankruptcy costs impounded in highly levered transactions.

Also consistent with Jensen (1989), Centurion maintains a highly geared capital structure up to five years after the buyout, even though stocks and convertible notes were issued to the public. This implies that management recognise the

benefits of debt, rather than merely utilising it as an acquisition medium.

### 5.6 Financial Performance

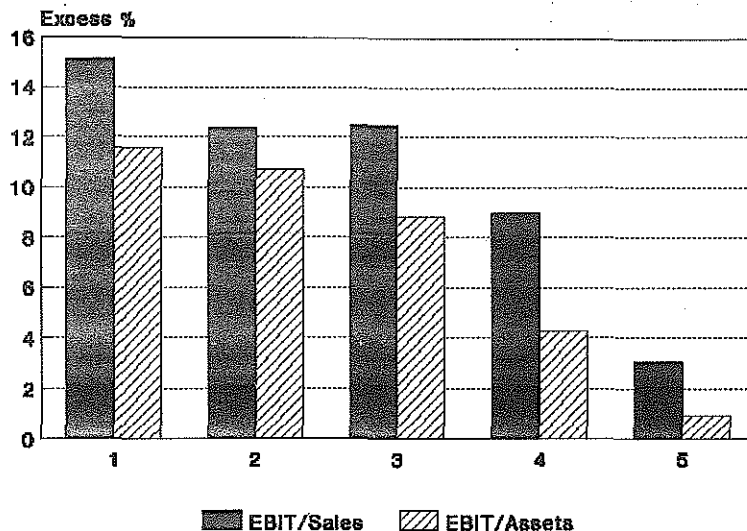
The fact that Centurion remained private for only fourteen months provides an opportunity to examine the effectiveness of the leveraged buyout as a restructuring mechanism.

Centurion's EBIT on sales and assets ratios clearly exceed the corresponding industry medians (Figure 5.1). Comparatively high EBIT/Sales implies wide profit margins, probably as a result of strong niche markets allowing cost increases to be passed on to customers. The positive EBIT/Assets series reflects Centurion's relatively high operating efficiency. These results are consistent with Muscarella et al. (1990), Kitching (1989) and Kaplan (1989b). Note that both ratios peak in the private ownership period.

In contrast, Centurion's employee efficiency utilisation (Sales/Employees) has been substantially below the median industry level for all post-buyout years, except t+5. This indicates that revenue growth has failed to match the growth in Centurion's workforce (44 to 193, or 34% pa). However, profitability per employee has exceeded the industry median by a range of 80% to 159%, with the latter achieved in the private ownership period. Therefore, Centurion's post-buyout performance is partially due to cost cutting, as distinct from revenue increases.

Figure 5.1

## EBIT RATIOS



Centurion Industries Limited

Centurion's cash conversion cycle deteriorated because of the excessive time taken to procure cash from debtors, and the willingness to pay trade creditors more promptly than industry competitors. Table 5.2 synthesises data pertaining to net working capital management. Although this study's t+1 cash conversion is 13% faster than the industry median, subsequent results indicate the firm's working capital costs are too high.

The low capital commitments to fixed assets ratios for Centurion and the industry median indicate stable growth preferred by leveraged buyouts. The relatively large t+1 commitment by Centurion suggests cash flow is not generated at the expense of long horizon investment decisions, rather the need for capital investment is low.

Table 5.2

Cash Cycle

Industry Adjusted Days	1	2	3	4	5
Inventory	31 <sup>a</sup>	19	10	1	7
Receivables	- 9	- 1	-24	- 6	-16
Creditors	- 9	- 8	- 6	-10	- 2
Cash Cycle	13	10	-20	-15	-11

A positive result indicates inventory and receivables days less than the industry median, and/or trade creditors days more than the industry median.

a. Industry inventory (71) - Centurion inventory (40) = 31.

Therefore, Centurion satisfies most of the theoretical requirements for a leveraged buyout candidate. The industry is mature, with low growth and technology needs. Exposure to economic cycles is attenuated by Centurion's strong market niche in established heavy engineering products and services.

The restructuring of Centurion's ownership and capital is generally consistent with United States and United Kingdom experiences. Intensive equity ownership among staff and major investors, and the debt induced threat of insolvency provides incentive to reduce costs and improve cash flow. Centurion's post-buyout performance indicates the firm has been partially successful in this regard. While EBIT on sales and assets, and profit on employee ratios consistently outperformed the industry median, opportunities

to reduce costs through active net working capital management have not been taken.

Through the turn of the decade, Centurion acquired plant and product rights of Davmar Pty Ltd, a 25% interest in Cryofab Industries Ltd, and 100% in Fusco Cameron and Fusco Engineering. By July 1991 Natsteel Equity 2 Pte Ltd (Singapore) had acquired 66% of Centurion's stock as a result of its Part A takeover offer valued at \$6,569,045. This represents a value increase of 23% pa since the buyout.



## CHAPTER 6

## Joyce Corporation Limited

6.1 Background

Joyce Corporation Limited emerged from the December 1984 leveraged buyout of Joyce (WA), a division of George Weston Foods Ltd. Joyce remained under private ownership for a period of two years, listing on the main board of the Exchange through a public offering in December 1986.

6.2 Industry Characteristics

At the buyout date, Joyce was principally involved in the manufacture and sale of furniture. The company had bedding, hospital equipment, wood and steel furniture, and foam product lines. Joyce has been a significant participant in the industry since the 1930s and it is suggested that while product lines and processes are revised, they are generally derivatives of preceding years and not fundamentally new. Given the basic design of furniture is well established, the industry is considered to be mature.

When the buyout was initiated Joyce had material exposure to the construction industry, and the West Australian housing sector in particular. This market experiences volatile conditions that are sensitive to interest rates, hence, the furniture industry is subject to variation in demand and growth resulting from economic cycles. The industry does not have stable profit margins, a problem when floating rate interest commitments are increasing.

Although Joyce had low technological needs when servicing local industry, the aggressive expansion programme undertaken after the buyout diversified products and processes, which led to the introduction of robotic and computer controlled lines. Hence, Joyce Corporation's plant and equipment technology immediately prior to the buyout was inappropriate, if not obsolete, for the firm's future aspirations.

Therefore, Joyce Corporation's industry sector exhibited mixed results in terms of leveraged buyout suitability. The sector was well developed and mature, however it failed the growth, economic cycle and technology tests. Prima facie, the industry did not appear to be conducive to leveraged buyouts, a conclusion supported by Waite and Fridson's (1989) poor furniture industry LBO-intensity measure (1.1).

### 6.3 Business Attributes of the Target Company

In December 1984, Joyce was one of the largest furniture manufacturers in Australia, with substantial market shares in household and hospital markets. The principal products related to beds, bedding and ancillary goods, and all were established production lines of over fifty years duration.

Joyce Corporation's substantial market presence and product development led to award winning products with well known, respected brand names, eg. Pipe-Line beds. This enabled Joyce products to be differentiated from

substitutes, an important consideration for such basic merchandise. The conventional nature of the products reduces the risk from obsolescence and moderates research and development expenditure.

Joyce Corporation's products and markets were not notably diverse at the time of the buyout. The hospital market partially balanced cyclical returns from the housing sector. Acquisitions made in the first financial year after the buyout improved Joyce Corporation's product and market range. Joyce acquired substantial exposure to leisure furniture (Supafurn) and the Australia/New Zealand franchise for Ther-A-Pedic (Sierra Bedding). In addition, the firm acquired the rights to produce Nesbitt Evans hospital beds in Australia, New Zealand and South East Asia.

Joyce established a Singapore branch in 1985 and vigorously pursued foreign markets. Joyce became the largest furniture maker in Australia with more than 1,500 product outlets nationwide.

Therefore, when the buyout was initiated, Joyce had strong market share in the furniture industry with well known and respected brand name products. Acquisitions completed in the year following the buyout reinforced Joyce Corporation's strength through product and market diversification, exclusive franchise agreements and widespread distribution capability. Hence, via strategic acquisition, Joyce established a cash flow base more resilient to general economic conditions.

#### 6.4 Equity Ownership

The pattern of stock ownership in Joyce when the leveraged buyout was initiated is outlined in Table 6.1. Because all stocks were owned by managers and directors, wealth incentives were aligned with firm value maximisation. The substantial ownership stake of the Chairman (Mr. Smetana) might explain the entrepreneurial management displayed throughout the late eighties. The absence of a specialist LBO equity investor in the transaction highlights the role of debt obligations and bankruptcy risk in disciplining managerial decision making.

Table 6.1

#### Equity Ownership

Owner	No.	%	Cum%
Smetana	950,001	58	-
Carkeek	150,001	9	67
Swanson	150,001	9	76
Trollope	150,001	9	85
Other	240,002	15	100

The high level of management commitment to the company was reflected in their equity ownership. Banks are more willing to finance deals when managers own a significant stake in the company (bankers refer to management stock ownership as 'sweat equity' or 'hurt money'). Mr Smetana owned over 40% of Joyce Corporation's fully paid issued

stocks as at October 1991, almost seven years after the buyout.

#### 6.5 Capital Structure

The total debt to assets ratio was 76% and the long term debt to assets ratio was 48%, at the buyout date.

The high proportion of debt in the capital structure ensures free cash flow is distributed rather than accumulated. The provision of debt capital from a single senior lender is consistent with the hypothesis that intensive debt ownership serves as an institutional monitor of management behaviour, in this case, in lieu of a specialist equity investor. Debt covenants cost effectively monitor management through ongoing ratio requirements.

Although strip financing and equity kickers were not included in the buyout's funding, debt arranged by a single lending institution facilitates work-outs in the event of default. Because there is only one entity involved in the renegotiation process, flexible financing packages can be arranged provided going concern value exceeds liquidation value.

Joyce used an extensively geared capital structure for the five year period following the buyout, primarily to finance an aggressive expansion campaign. Australia's relatively high inflation rates during this period meant Joyce could benefit from a reduction in real fixed rate borrowing costs, and from the reintroduction of negative gearing (1987). The debt ratio remained very high by

industry standards, despite management's stated intention to reduce debt to more prudent levels (Table 6.2).

Table 6.2

Debt/Assets Ratios %

	1	2	3	4	5
Joyce	59	51	69	65	61
Industry	30	35	21	27	26

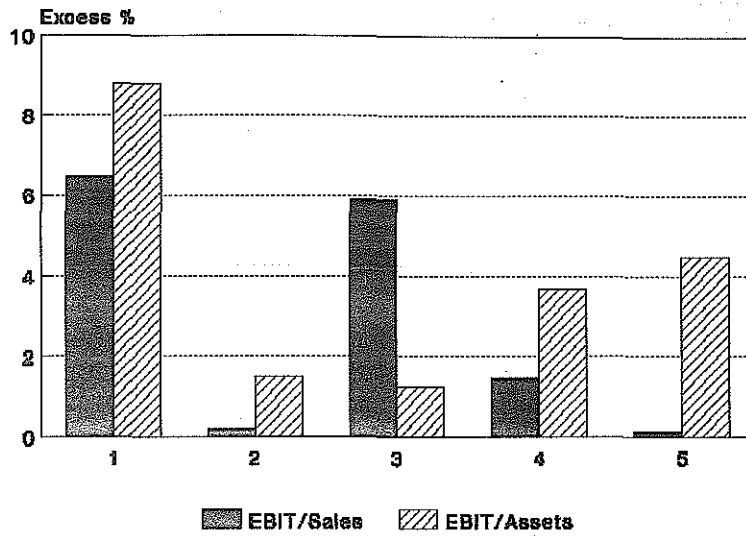
6.6 Financial Performance

Joyce Corporation's EBIT on sales and assets ratios have consistently exceeded industry medians. Marginal EBIT/Sales results in t+2, 4 and 5 reflect the sensitivity of Joyce profit margins to economic conditions (Figure 6.1). The EBIT/Assets calculations indicate that the company utilises its capital more efficiently than industry competitors.

In contrast to capital utilisation, Joyce has indifferent employee efficiency and profitability ratios. Industry adjusted sales per employee ratios are positive in years t+4 and 5 only, and industry adjusted profitability ratios are positive in year t+3 only. The large increase in employees resulting from the acquisition programme and subsequent rationalisation due to the recession, may confound these ratios. However, the capital investment in new technology in 1986/87 should have induced improved employee efficiency.

Figure 6.1

## EBIT RATIOS



Joyce Corporation Limited

Joyce Corporation's net working capital management for the three years following the buyout was substantially worse than the industry median. Stock was held for excessive periods, receivables took too long to collect and creditors were paid more promptly than the industry median. Years t+4 and 5 show a marked reversal in the length of the cash cycle, with most gains attributable to reduced stock holding periods and deferred trade creditor payments (Table 6.3).

Capital commitments on fixed assets ratios could not be calculated for Joyce due to the failure to disclose capital expenditure incurred but not yet provided for. This disclosure is not mandatory.

Table 6.3

Cash Cycle

Industry Adjusted Days	1	2	3	4	5
Inventory	-22*	-16	-98	11	20
Receivables	-20	- 6	-51	2	- 2
Creditors	- 3	- 3	70	9	8
Cash Cycle	-45	-25	-79	23*	27*

\* Sum not exact due to rounding.

A positive result indicates inventory and receivables days less than the industry median, and/or trade creditors days more than the industry median.

a. Industry inventory (61) - Joyce inventory (83) = -22.

Joyce Corporation's suitability as a leveraged buyout is dependent on the relative impact of opposing forces. While the furniture industry was mature and Joyce had significant market share and established brand name products, demand sensitivity to economic cycles made growth rates unstable. Product and market diversification acquired after the buyout required advanced technology funded primarily with debt, increasing debt servicing commitments.

The capital and ownership structures of Joyce Corporation at the LBO date were consistent with theoretical expectations. The highly geared capital structure was predominantly funded with long term debt, and management owned all issued stocks. Unlike most leveraged buyouts, Joyce did not significantly reduce debt commitments. Debt to



gross cash flow ratios clearly exceed the industry median, suggesting Joyce does not generate sufficient cash flow to amortise its debt. For example, assuming no additional debt capital is raised and gross cash flow remains constant, it would take Joyce over 16 years to amortise its debt (as at 30/06/91). The equivalent industry median is 2.33 years.

Joyce Corporation's financial performance has been mixed. The company has achieved high industry adjusted EBIT ratios for each post-buyout year and during all economic conditions. Recently the firm showed positive trends in sales on employees and cash cycle ratios, perhaps signalling a return to fundamental management issues. However, the firm posted its worst operating loss in its 105 year history in 1991. The interest costs on Joyce's financial debt exceeded earnings before interest and tax (EBIT). Returning the firm to more prudent gearing is the prime objective of the corporation.

## CHAPTER 7

## Automotive Components Limited

7.1 Background

The Ariadne Group acquired Repco Corporation Limited with the intention of divesting its manufacturing divisions. The Brake and Clutch division was purchased by BBA Plc, and the Engine Parts Division was acquired by Third Nettebin Pty Ltd for \$38M, in a 1986 leveraged buyout. The shelf company subsequently became Automotive Components Limited (ACL), and has remained privately owned.

7.2 Industry Characteristics

ACL manufacture pistons, engine bearings, valve seat inserts, engine gears, brake and ignition parts, soft and hard gaskets, base cork and rubber materials. Most of these manufacturing processes were established in the 1930-1940s, with the most recent commissioned in 1962.

Many of the above manufacturing processes produce components which are technically well developed and suited to mass production. This is because the automotive industry utilises engine and other components between models to avoid immense re-tooling costs. Engine components enjoy long production runs and engine staples such as bearings, gaskets and piston rings for example, are unlikely to be developed much beyond their present form. Hence, in general, the core industry is mature.

When the buyout was initiated the automotive industry had low growth prospects. The introduction of Fringe

Benefits Tax and a falling Australian dollar made the industry's contraction more severe. Industry growth prospects were expected to be limited, however, short term growth could be absorbed by existing surplus capacity.

ACL is exposed to cyclical swings in consumer demand resulting from the automotive industry's sensitivity to interest and exchange rates. As a durable good, new motor vehicle purchases may be deferred in tight economic conditions, having flow on effects for original equipment and replacement market suppliers.

Long established products and processes imply that the industry technology base is relatively stable. Cutting, pressing, milling and forging are engineering processes which have been refined over many years. Basic automotive components do not require advanced technology to capitalise on economies of scale.

Therefore, the automotive industry demonstrates attributes synonymous with leveraged buyouts. The industry is mature, with low growth prospects and low technology requirements. However, the industry is subject to economic cycles. The next section may indicate corporate attributes which mitigate the downside from exposure to a cyclic economy.

### 7.3 Business Attributes of the Target Company

ACL has dominant market shares in original equipment and aftermarket products in Australia. ACL's engine components are used in Australian engines built by Ford,

Holden, Toyota, Mitsubishi and Nissan, enabling manufacturing economies of scale to be achieved. ACL Bearing Company is the sole Australian manufacturer of precision bearings for domestic vehicle manufacturing and replacement markets, and ACL Gasket Company is the major supplier of soft and hard gaskets to these same markets.

ACL has established a reputation for precision engineering products in Australia, with accompanying brand recognition benefits. Respected brands facilitate differentiation from substitutes, which is important to manufacturers of basic products like engine bearings, gaskets and rubber industrial flooring.

ACL's products and markets are well diversified, making the company more resilient to vagaries in the economy and the Australian automotive industry in particular. The product range includes engine, transmission, brake and ignition parts, cork and rubber products for transport, flooring, foundation slab, footwear, sport and household applications. ACL produces components for automotive, industrial and whitegoods industries in Australia and overseas. Its sales are represented by (i) Original equipment (33%), (ii) Replacement (33%), (iii) Industrial (17%) and (iv) Export (17%) markets. Hence, ACL is not dependent on any one product or customer for its profitability.

Therefore, ACL has a dominant market share, established brands, basic products, and considerable product and market

diversification. These attributes are indicative of low business risk since stable cash flow should be generated through all economic and business cycles. Low business risk is a prerequisite for leveraged buyouts.

#### 7.4 Equity Ownership

The ACL leveraged buyout was completed with the assistance of two equity investors, the Australian Industry Development Corporation Limited and Citicorp Capital Investors Australia Ltd. The equity ownership pattern in Table 7.1 is similar to foreign buyouts with the management stake closely resembling equivalently sized UK firms (Wright et al., 1991).

Table 7.1

#### Equity Ownership

Owner	%	Cum%	After Syndication	
			%	Cum%
Management group	40	-	40	-
Employees	-	40	10	50
AIDC Ltd	45	85	20	70
Citicorp Capital	15	100	15	85
BLE Capital	-	100	15	100

The intensive ownership structure is consistent with theoretical expectations of increased managerial incentives and reduced agency costs, resulting from wealth dependence on residual claims and effective corporate governance by sophisticated investors. The concentration of equity

ownership should improve cash flow generation and operating performance since managers and employees have a personal stake in the company.

### 7.5 Capital Structure

The total debt to assets ratio was 71% when the buyout was initiated, with the long term debt to assets ratio being 60%. Debt capital was originally provided in the form of a \$23.5M term loan facility (AIDC Ltd) and \$7.5M of vendor financing. A refinancing eventually syndicated the debt among three institutions: AIDC Ltd (\$13M), NAB Ltd (\$8.5M) and SBV (\$8.5M).

The provision of debt and equity capital by AIDC Ltd is a derivative strip financing arrangement. Holding debt and equity claims reduces the threat of premature liquidation since equity losses offset increased debt recovery (Arzac, 1992).

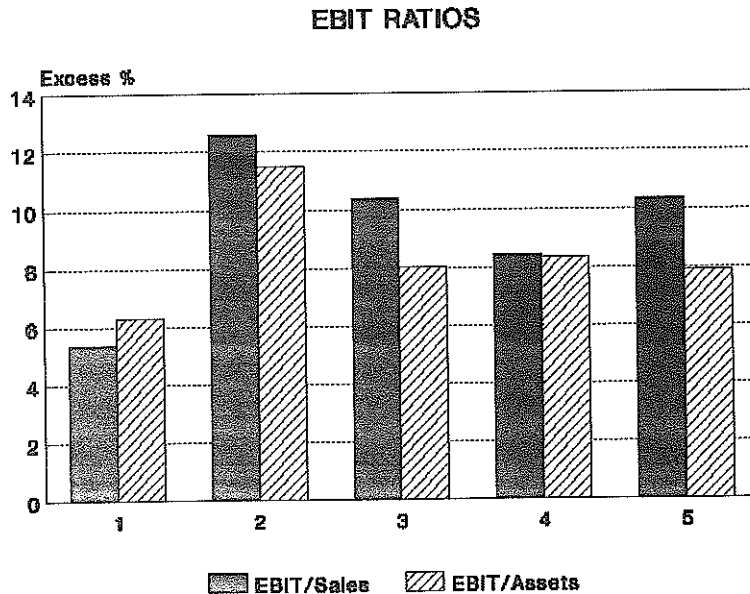
ACL has maintained gearing levels in excess of the industry median for the five years after the buyout, though at 41% and 26% (t+5), respectively, the difference is not significant.

Therefore, the high gearing level bonds the promise to disburse free cash flow to investors. Syndication of debt capital does not diminish corporate governance provided by lending institutions. Debt covenants are secured by fixed and floating charges over all assets and rank pari passu, an arrangement which facilitates work-outs since individual lenders cannot gain a unique advantage.

### 7.6 Financial Performance

ACL's EBIT on sales and assets ratios have exceeded the industry median by a large margin for each of the five post-buyout years (Figure 7.1). These results indicate that ACL is able to maintain profit margins through all economic and business cycles, and that the company makes efficient use of its capital investments. Stable profit margins facilitate debt amortisation, particularly when floating rate debt is used, since cost increases can be passed on to consumers. Relatively high internal efficiency is predicted by theory since managerial and employee stock ownership reduce agency conflicts.

Figure 7.1



ACL's employee productivity results are well below industry medians. Industry adjusted sales on employee ratios

are negative for each of the five post-buyout years, ranging from -53% (t+1) to -21% (t+2) and averaging -36% overall. ACL's employee growth has been negligible, hence employee utilisation has been relatively inefficient.

In contrast, profit on employee ratios have exceeded industry medians in all but the first post-buyout year. This suggests that the company has been successful in cutting operating and non-operating costs. These results are consistent with those reported by Muscarella et al. (1990).

Table 7.2 discloses ACL's working capital management after adjusting for industry medians. It is evident that ACL have achieved strong EBIT and profitability results despite poor net working capital management. Shortening the cash cycle toward industry medians will provide a cheap source of short term finance, reducing costs and increasing performance measures.

Table 7.2 indicates the greatest benefit could be achieved by reducing the number of days stock is warehoused, reflecting either poor production scheduling or weak marketing. Excess receivables collection periods may be attributable to weak credit and/or collection policies. Forgoing opportunities to reduce net working capital contrasts with results reported by Baker and Wruck (1989), and Smith (1990).

Industry adjusted capital commitments on fixed assets ratios have been significantly positive for the post-buyout period. ACL has invested in new plant and equipment to



provide additional production capacity. This coincides with Muscarella et al. (1990) finding that leveraged buyouts purchase, as well as dispose of assets.

Table 7.2

Cash Cycle

Industry Adjusted Days	1	2	3	4	5
Inventory	-17*	-14	-23	-23	-37
Receivables	-14	-18	-15	-17	-19
Creditors	-11	-7	-5	-1	9
Cash Cycle	-41*	-39	-44*	-41	-47

\* Sum not exact due to rounding.

A positive result indicates inventory and receivables days less than the industry median, and/or trade creditors days more than the industry median.

a. Industry inventory (66) - ACL inventory (83) = -17.

Therefore, Automotive Components Limited exhibited most of the attributes expected in a leveraged buyout target. The company resides in an industry which is mature, has low growth prospects, and low technological requirements. While the industry is subject to general economic cycles, ACL's strong market share, conventional brand name products, and broad range of products and markets, attenuates demand variation.

ACL's ownership structure is consistent with intensive equity ownership among managers and specialists found in foreign research. The extent of the gearing in the capital

structure is more similar to UK, than US buyouts (Kitching, 1989). Ownership and capital structures ensure cash flow generation is the firm's prime consideration. Ownership of equity and debt claims by AIDC Ltd is a derivative of strip financing and equity kickers used in the US/UK, to reduce conflicts of interest between stakeholders.

ACL's strong EBIT and profitability ratios suggest cash flow incentives and rigorous corporate governance have alleviated internal conflicts and reduced costs. These gains were achieved despite relatively poor employee utilisation and net working capital management. The comparatively large capital expenditures imply gains are not realised at the expense of future economic wealth.

## CHAPTER 8

## Leigh-Mardon Pty Ltd

8.1 Background

DBSM Capital Partners Ltd acquired Leigh-Mardon from Amatil Limited in September 1990. At a purchase price of \$267.7M, Leigh-Mardon is the largest leveraged buyout completed in Australia. The company has remained privately owned.

8.2 Industry Characteristics

Leigh-Mardon manufacture flexible, metallised, carton and paper packaging; specialised formulated inks, credit and identity cards, EFTPOS and other electronic terminals. The company also prints cheques, stamps, encoded datagraphic forms, exam papers, ticketing, stationery, Yellow Pages telephone directories and automotive manuals.

Packaging and printing are mature industries with relatively stable underlying business fundamentals. Packaging and printing processes were established many years ago and are now well developed. In contrast, electronic terminal and datacard industries are relatively recent phenomena with ample scope for further development.

Packaging, printing, electronic terminal and datacard industries all exhibit growth potential. These industries benefit from significant scale economies such that modest increases in volume flow through to bottom line earnings. Given the recessed economy (1990) volumes could be expected to increase in ensuing years. Further, electronic terminal

and datacard applications were still being developed, hence large growth prospects seemed likely.

The above industries have strong demand under all economic conditions. The packaging industry services tobacco, food and beverage sectors which are essentially immune from general economic conditions. Similarly, printing and datacard industries are resilient to economic fluctuations since cheques, stamps, telephone directories and driver's licences have inelastic demand. Hence, packaging, printing and datacard industries are non-cyclical.

The packaging and printing industries do not require large expenditures on advanced technologies to remain competitive. They are conventional industries with established technology and long production runs. Electronic terminal and datacard industries require investment in technology to refine existing products and develop new capabilities.

Leigh-Mardon is predominantly exposed to printing (38%), packaging (48%) and datacard industries (8%). Printing and packaging industries satisfy tests of maturity, non-cyclical behaviour, and low technology requirements. These industries are conducive to leveraged buyouts, a contention supported by Waite et al. (1989) relatively high paper (4.5) and printing (2.3) LBO-intensities. The datacard industry does not possess characteristics expected in LBOs. However, it does have potential for generating large amounts

of stable cash flow as outlined in the business attributes section.

### 8.3 Business Attributes of the Target Company

Leigh-Mardon is a dominant supplier in monopolistic and oligopolistic markets. The following two paragraphs outline market shares at the time of the buyout for divisions with sales exceeding \$20M.

The Domestic Cartons Division supplied 57% of the Australian tobacco market, which was well in excess of rivals, Gadsens (11%) and Anzpac (32%). The division also controlled 70% of the beverages market in competition with APM and Visypak. The Flexibles Division dominated the confectionary (66%) and snack foods (55%) markets, with Astrapak and 5-6 smaller companies being the only competitors.

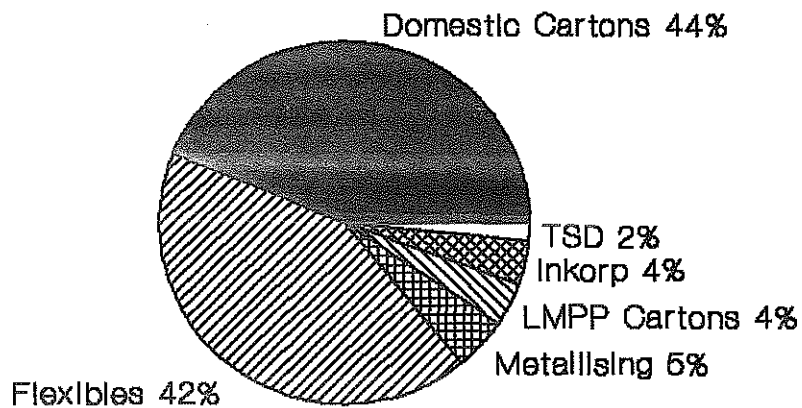
The Security Printing Division was the market leader in cheque printing business, accounting for 65% of the market. Similarly, the Business Forms Division controlled 45% of personalised cheques and airline ticketing business, with the only major competition coming from Sands. The Datacard Division dominated the plastic cards market with a 60% market share.

The aforementioned products may be characterised as mundane, with the exception of electronic terminals (which accounts for 3% of sales). Packaging and printing products constitute the bulk of Leigh-Mardon's sales and they are quite basic in their manufacture and ultimate end-use.

Leigh-Mardon had broad product and market diversification. Figures 8.1 and 8.2 delineate Leigh-Mardon's sales by business segment when the leveraged buyout was completed.

Figure 8.1

**PACKAGING DIVISION**



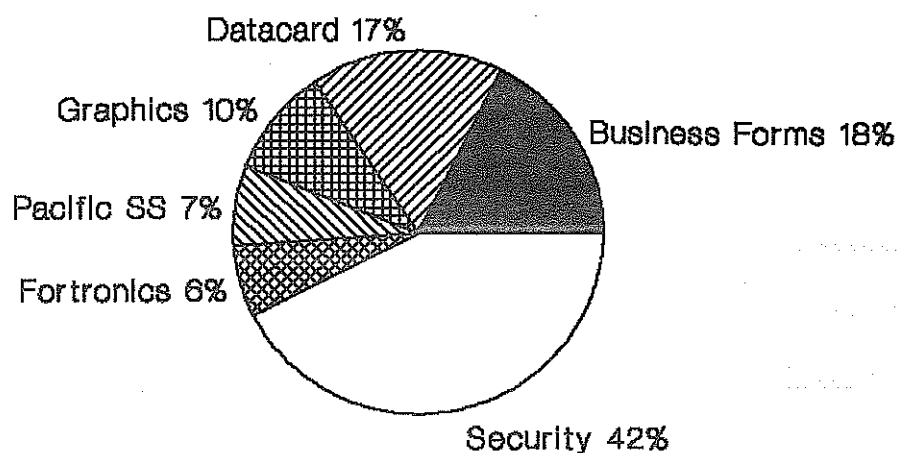
The diversified product and market range ensured Leigh-Mardon was not susceptible to technical obsolescence or market collapse.

Therefore, Leigh-Mardon has strong market shares in basic product lines, with diversified products and markets. These attributes ensure a stable stream of cash flow is generated to amortise principal and interest obligations as they fall due. Hence, Leigh-Mardon has low business risk

capable of supporting the financial risk inherent in leveraged buyouts.

Figure 8.2

### COMM. & SECURITY DIVISION



#### 8.4 Equity Ownership

Table 8.1 denotes equity ownership in the Leigh-Mardon leveraged buyout immediately after: (i) consummation, and (ii) warrants attached to debt instruments are exercised.

Large equity stakes controlled by DBSM Capital Partners Ltd and Amatil Limited are consistent with improved managerial incentives and stringent corporate governance. DBSMs stake in the equity funding is not known, however, they have incentive to make the buyout work since their

ability to raise further equity capital at reasonable cost depends on the returns realised on invested funds.

Table B.1

Equity Ownership

Owner	%	Cum%	Fully Diluted %	Diluted Cum%
DBSM Equity Fund	51	-	44	-
DBSM Mezzanine Fund	-	51	12	56
Amatil	49	100	44	100

B.5 Capital Structure

The total debt and long term debt to assets ratios were 83% and 65%, respectively. These ratios are similar to those reported by Muscarella et al. (1990) and Kuhn (1990), and they suggest that free cash flow would be dedicated to debt amortisation.

The funding structure of the buyout was as follows:

## Senior Debt

- Term Facilities	51.4	
- Working Capital	48.6	100.0
Subordinated Debt		70.0
Sale and Leaseback		53.7
Equity		44.0
Total		\$267.7M

The mezzanine debt was not scheduled for principal payments within the first five post-buyout years, an



arrangement similar to the US experience of amortising senior debt prior to subordinated debt (Burke & Fite, 1990).

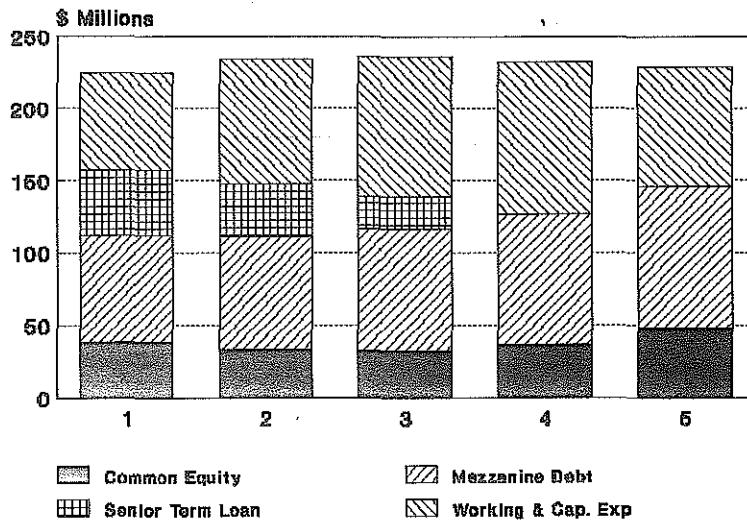
Using mezzanine debt with warrants attached (equity kickers) enables DBSM to reduce financial risk and improve marketability of debt instruments. Warrants reduce coupons paid on buyout debt, hence cash flow demands are minimised. Furthermore, warrants allow institutions to participate in shifts in the return distribution, providing equity returns in good times and facilitating improved agency relations in the event of default.

DBSMs Mezzanine and Equity Funds give institutions the opportunity to invest in the Australian leveraged buyout market. DBSM benefits from these funds by limiting its LBO exposure to prudent levels, reducing deal completion times, and increasing the size range of potential LBO targets. If institutions contribute capital to both funds they would effectively be purchasing a strip of subordinated securities which encourages work-out arrangements similar to equity kickers.

The projected financial capitalisation of Leigh-Mardon as described in the deal proposal is denoted graphically in Figure 8.3. The financial capitalisation indicates that only marginal replacement of debt with equity is expected to occur within the five year post-buyout period. This may be attributable to losses forecast for each year prior to t+5, a tax efficient result primarily due to large interest payments (Lowenstein, 1985).

Figure 8.3

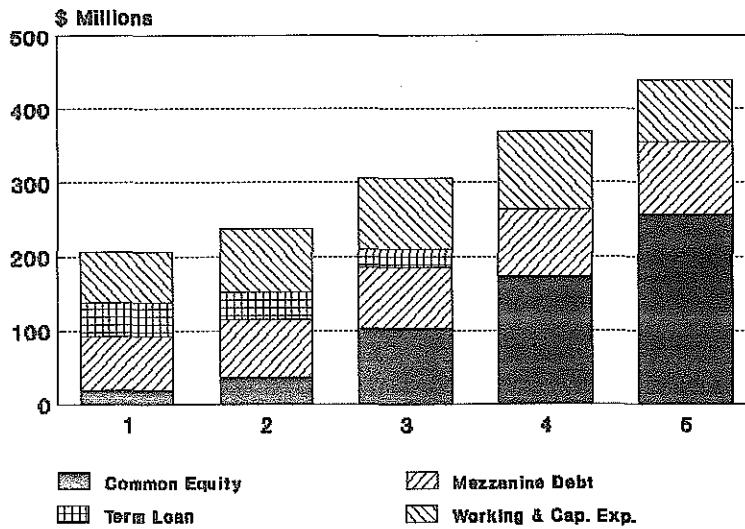
**PRO FORMA FINANCIAL CAPITALISATION**



Leigh-Mardon Pty Ltd

Figure 8.4

**PRO FORMA MARKET CAPITALISATION**



Leigh-Mardon Pty Ltd

Figure 8.4 depicts forecasted growth in market capitalisation for the five year post-buyout period at (EBIT x 8). This graph accentuates the expected increase in equity market value as cash flow pays down debt, offering investors a compounded return of 42% per annum for the five year holding period.

## CHAPTER 9

## McEwans Limited

9.1 Background

Based in Victoria since 1852, McEwans was publicly listed in 1951, and taken over by Repco Corporation Ltd in 1982. In 1986, McEwans was purchased by Charles Davis Limited for \$62M. After acquiring Lloyds Hardware Stores (\$20.9M) and Campbells Hardware and Timber Stores (\$28M), McEwans was divested for a total consideration of \$210M (January 1990), the second largest leveraged buyout in Australia.

The McEwans buyout experienced problems since inception and a receiver manager was appointed in August 1992.

9.2 Industry and Business Characteristics

McEwans was the second largest corporate hardware chain in Australia. Industry and business attributes referred to in Chapter Three mainly apply to manufacturing companies and hence, are less appropriate for retailing. For example, industry maturity and technology tests ensure large capital and R&D expenditures are not required to match developments introduced by competitors. Retailers however, do not have long term investments in productive assets to protect.

As a durable goods retailer McEwans is susceptible to the economic cycle. Cyclical sales are not desirable since declining cash flow cannot service large outstanding debt commitments. Furthermore, additional capital is required

during boom conditions, diverting scarce cash resources from debt amortisation.

Waite and Fridson's (1989) retail trade LBO-intensity ratio (2.3) indicates reasonably high retail industry exposure to leveraged buyouts in the United States.

Easterwood et al. (1989) found the retailing sector had the most leveraged buyouts (>\$100M).

McEwans is a significant retailer in the hardware market, with major competition from BBC Hardware and Mitre Ten. The company established strong market share through aggressive expansion and the development of a fully automatic perpetual inventory and price lock-up computer system. However, readily available substitutes cause price competition, hence cost increases cannot be passed on to consumers. Therefore, McEwans real profit margins decline at the same time costs of floating rate debt increase.

Hardware products are mundane such that stock is unlikely to become obsolete or spoil on the shelves. McEwans had broad product and market diversification at the time of the buyout.

Therefore, the McEwans leveraged buyout was vulnerable to economic downturns, despite having low technological requirements, mundane products with long shelf lives, and diversified products and markets. The recession caused low sales volumes which had a major impact on the buyout's debt servicing capacity.

### 9.3 Equity Ownership

The McEwans leveraged buyout ownership structure is outlined in Table 9.1, both before and after warrants are exercised. The diluted position assumes management achieve performance targets.

Table 9.1

#### Equity Ownership

Owner	%	Cum%	Fully Diluted %	Diluted Cum%
Citicorp, AIDC, McIntosh	62	-	53	-
Charles Davis	30	92	27	80
Scandanavian Pacific	-	92	4	84
Management Group	8	100	16	100

NB. Charles Davis owned 25,000 redeemable 'A' preference shares which carried no dividend or voting rights.

The seven senior executives held 2.8M ordinary and 4.0M 'B' redeemable preference shares with the right to be issued ordinary shares. The rights were subject to performance targets being met:

- (i) The right to exchange 2.0M preference shares for ordinary shares on a 1:1 basis at a rate of 20% per annum, provided minimum EBT targets are achieved. There is a sliding scale if EBT targets are below specified levels.
- (ii) The right to subscribe for 2.0M ordinary shares on a 1:1 basis at crystallisation date according to a sliding scale, commencing when ordinary shareholders receive an IRR

36.5% with the maximum entitlement when shareholders receive an IRR 40%. Preference shares will be redeemed at par (\$0.20).

These performance incentive schemes are similar to those recorded in Baker and Wruck (1989). They reported sliding scales based on EBIT and average working capital ratios for OM Scott and Company, with payoffs offered between the range 80%-125% of performance targets.

The combination of significant managerial equity ownership and material incentive remuneration schemes motivates achievement of performance targets and emphasise cash flow generation. The LBO specialist equity stake is consistent with stringent corporate governance (Jensen, 1989).

#### 9.4 Capital Structure

The McEwans capital structure consisted of four distinct layers: (i) senior secured, (ii) subordinated (mezzanine) debt, (iii) preferred stock, and (iv) common stock, as outlined below.

Senior Bill/Advance Facility	92.0
Senior Subordinated Notes	35.0
Junior Subordinated Debt	25.0
Preferred Stock: A	25.0
B	0.8
Common Stock	32.2
Total	\$210.0M

The total debt to assets and long term debt to assets ratios were both 72%. The senior credit amounts to only 44% of the capital structure, significantly below the 60% ratio reported by Kuhn (1990). Therefore, McEwans raised a higher proportion of mezzanine finance (29%) at a cost of 400 basis points over the 5 year swap rate, a considerably higher rate than bank debt.

When the buyout was initiated the senior subordinated notes were held by AIDC Ltd (36%), Charles Davis Ltd (36%), and Scandanavian Pacific (28%). Each of the 70 notes had 65,800 equity warrants attached. Hence the buyout reduced immediate cash flow demands by offering equity kickers. Debt interest charges would be lower with attached warrants since they allow participation in shifts in the return distribution.

Equity kickers facilitate work-out arrangements in the event of default since gains from debt collection create losses in the equity position (Arzac, 1992). This is reinforced by the fact that AIDC and Charles Davis both held equity positions in the buyout in de facto strip financing arrangements.

Therefore, the McEwans buyout capital structure contained strip financing and equity kickers as a means of reducing direct financing costs and costs associated with bankruptcy. However, with price competition and a substantial portion of buyout funding represented by



subordinated debt at high floating rates, debt servicing capacity proved tenuous in the recession.

The failure of the McEwans buyout has been partially attributed to insufficient retailing representation on the board of directors and managerial unwillingness to dispose of assets as the recession deepened (Dobbie, 1992).

## CHAPTER 10

## Adventure World

10.1 Background

The Adventure World (Bibra Lake Unit Trust) leveraged buyout resulted from the receivership of Galdarm Pty Ltd (Trustee). The receiver manager put Adventure World out for tender, and Industrial Investment Corporation Ltd and a management group responded with a \$3.65M buyout proposal, in September 1990.

10.2 Industry Characteristics

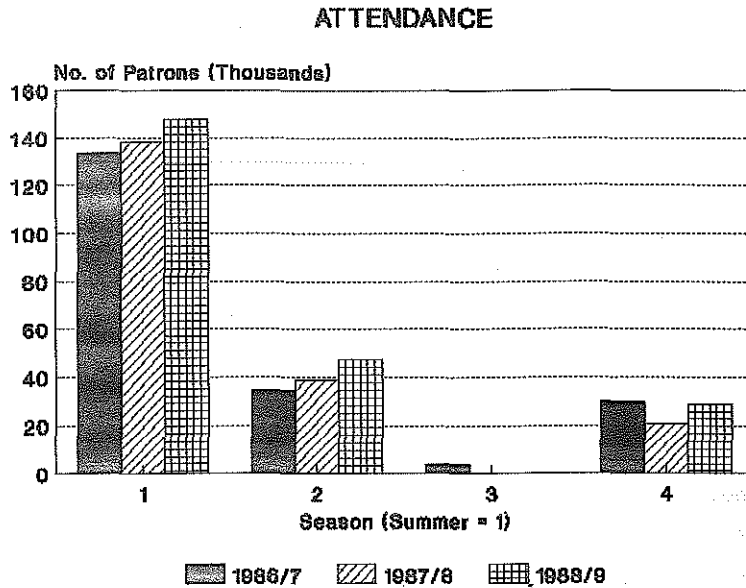
Adventure World is Perth's largest theme park, providing a wide variety of entertainment and attractions. The park has over 26 different rides, Australia's largest swimming pool, a wildlife park, exploration cinema, animal circus, lakes, gardens and full public amenities.

The Australian theme park industry is in the early stages of its development. Australians have not been regular patrons of theme parks, however, innovative marketing has made some progress with consumer attitudes. Colliers International believe the industry's immaturity offers medium term growth prospects. Changing tastes and expected increases in tourism promote growth in the West Australian theme park industry.

The theme park industry is exposed to seasonal and climatic conditions. Summer months account for a disproportionately large share of cash flow, while parks are essentially closed over winter months (Figure 10.1).

Furthermore, inclement weather severely reduces attendance figures, potentially affecting lucrative prime season sales.

Figure 10.1



Adventure World

The theme park industry does not have extensive technology requirements since its fixed assets are insensitive to technical obsolescence. The industry requires capital expenditures however, to introduce new attractions at the commencement of each year to induce repeat patronage.

Therefore, the theme park industry does not meet theorised leveraged buyout criteria reported in the literature. The industry is immature, exhibits medium term growth prospects, and suffers from seasonal and climatic conditions. Hence, cash flow generation is irregular and may be dissipated in growth periods. Notably, the Easterwood et

al. (1989), Waite and Fridson (1989) studies do not find leveraged buyouts in the US entertainment industry.

### 10.3 Business Attributes of the Target

Adventure World is the premier theme park in West Australia, operating in a duopoly with Underwater World. Adventure World has a greater ability to entertain for lengthy periods and attract repeat patronage. The closure of Atlantis Marine Park, Action Park and the scaling down of El Caballo Blanco, combined with high establishment costs, augments Adventure World's dominant market share.

Figure 10.2 delineates estimated attendance figures for specific client groups. While some diversity exists, Adventure World remains dependent on the fortunes of the local economy.

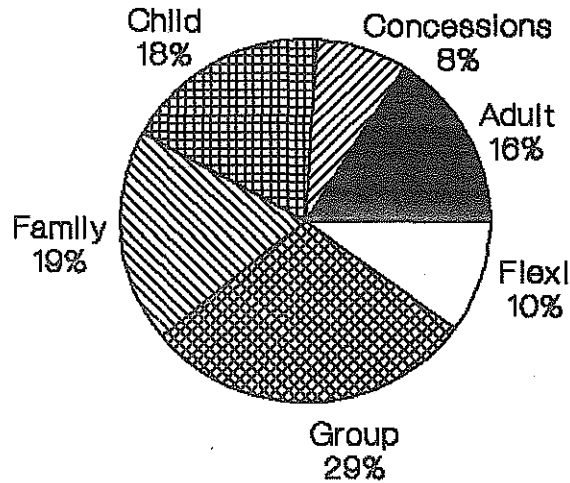
Therefore, Adventure World's dominance of the local theme park industry insulates the trust from predatory pricing and other competitive threats. Furthermore, certain financial traits of Adventure World were favourable for a leveraged buyout transaction:

(i) The trust had tax loss carry forwards amounting to \$720,000 in t-1.

(ii) The trust had operating losses in t-3, t-2, and t-1, however, cash flow was significantly positive in each year due to high non-cash (depreciation & amortisation) charges.

(iii) With a three year average pre-buyout total debt to assets ratio of 39%, the trust had considerable excess debt capacity.

Figure 10.2

**ATTENDANCE FIGURES**

Adventure World

#### 10.4 Equity Ownership

Equity ownership was apportioned between the Management Group (38%) and Industrial Investment Corporation Ltd (62%). These equity ownership percentages provide management with material incentives to increase firm value and they promote effective corporate governance by the LBO specialist. Hence, the Adventure World leveraged buyout ownership structure was analogous to those reported in US and UK research.

#### 10.5 Capital Structure

The total debt and long term debt to assets ratios were both 82%, a result similar to those reported by Kitching (1989), Smith (1990) and Muscarella et al. (1990). Senior debt constituted 63% of the capital structure, closely

resembling US buyouts (Kuhn, 1990; Vernick, 1991). Senior debt reduces agency costs since collateralised debt requires less monitoring. Similarly, leased assets remain the property of the lessor, providing default protection with low monitoring costs. The deal funding was structured as follows:

Senior Term Loan Facility	2,300,000	
Leasing	354,550	
Mezzanine Debt	350,000	3,004,550
Ordinary Equity		650,000
Total purchase price		\$3,654,550

Industrial Investment Corporation Ltd supplied the mezzanine component of the debt funding through a trading vehicle, SGJ Investments Pty Ltd. Given that they own 68% of the ordinary equity capital their Adventure World portfolio approximates a strip financing arrangement.

Therefore, the Adventure World leveraged buyout capital structure employs financing techniques consistent with foreign buyout research.

## CHAPTER 11

## Summary and Conclusion

Australian leveraged buyouts are not expected to satisfy all theoretical propositions regarding industry and business attributes, or ownership and capital structures. Rather, the firm's overall level of business risk should support a high degree of financial risk (Burke & Fite, 1990).

The case studies in this thesis suggest that industry and business attributes synonymous with US and UK buyouts are important determinants of Australian leveraged buyouts. Firm specific factors were the primary motivating forces, with the industry being a secondary or contributing factor. This result is consistent with Ambrose and Winters (1992).

Most of the industries occupy mature sectors of the economy and have low technology requirements. However, approximately half the industries have growth prospects or cyclical sales. In contrast to the mixed industry results, all firms have leading market shares or strong market niches, relatively mundane products (except Adventure World), and broad product or market diversification. Therefore, business attributes appear more influential than industry traits when analysing business risk. The case results imply that stable cash flow is important in Australian leveraged buyouts.

The cases disclose equity ownership structures analogous to those reported in the US and UK. Although

equity ownership levels vary according to deal size and complexity, managers and specialists account for material ownership interests. The concentration of equity ownership motivates managers to increase firm value and hence, the value of residual claims on the firm's assets (Jensen & Meckling, 1976). Specialists have the incentive and resources to effectively monitor managerial performance (Jensen, 1989).

The substantial employee equity ownership in Centurion Industries Limited (47% initially, 32% fully diluted) is consistent with agency theory. Centurion's highly unionised workforce was required to improve performance to turn the company around, hence participation in residual claims on the firm's assets should motivate workers.

The minority equity stakes held by parent companies in the Leigh-Mardon Pty Ltd and McEwans Limited buyouts, enables vendor participation in expected future gains, effectively increasing the acquisition price received. Given that these are Australia's largest leveraged buyouts, vendor equity ownership may have lent credibility to the transactions (Wright et al., 1991).

The capital structures of the six cases predictably (and by definition) had large gearing levels. The Australian buyouts had capital structures which were more closely aligned with those reported in UK research (Kitching, 1989; Wright et al. 1991). That is, with total debt and long term debt to assets ratios averaging 78% and 65% respectively,



the Australian buyouts were toward the more conservative end of the international spectrum.

Mezzanine finance was utilised by all three 1990 buyouts, but not by the mid-1980s buyouts. This probably reflects the state of knowledge which prevailed at those times and/or the relatively late development of subordinated debt markets in Australia. With mezzanine layers representing 26% and 29% of total deal funding, Leigh-Mardon Pty Ltd and McEwans Limited closely resemble the 30% level typical of leveraged buyouts in the United States (Paulus & Waite, 1990).

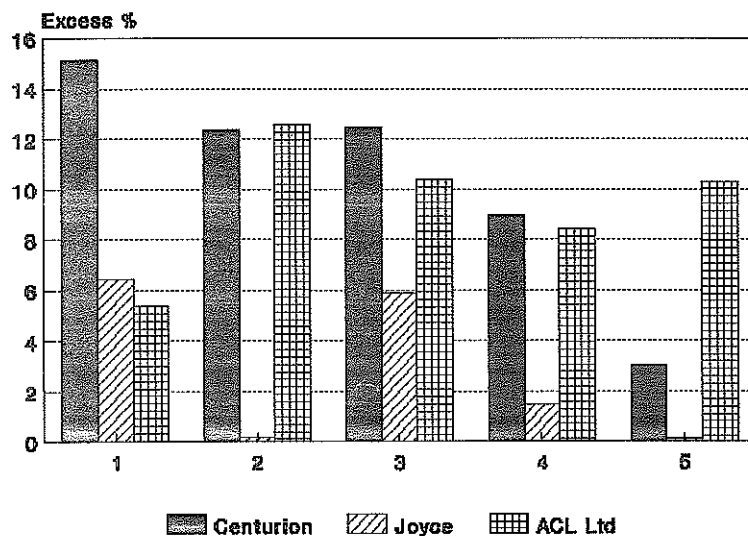
Strip financing and/or equity kickers were present in the four most recent Australian leveraged buyouts. The strip financing ranged from the provision of subordinated debt and equity from a single source (Adventure World) to DBSM LBO funds representing numerous institutional clients (Leigh-Mardon). Strip holders receive rights to intercede in the leveraged buyout as each security defaults, and accordingly, have little incentive to transfer wealth (Jensen, 1986).

The Leigh-Mardon and McEwans buyouts used equity warrants to increase marketability of subordinated debt and reduce cash outflows. Warrants attached to subordinated debt use capital gains from expected firm value increases to offset interest demands of mezzanine investors (Arzac, 1992). Equity kickers facilitate lower agency costs since they attenuate conflicts of interest between debt and equity holders (Jensen & Meckling, 1976).

Figure 11.1 synthesises industry adjusted EBIT/Sales ratios for each of the mid-1980s buyouts analysed in this thesis. It is evident that while all three buyouts exceed their respective industry medians in each post-buyout year, Centurion and ACL have realised higher profit margins per dollar of sales.

Figure 11.1

## EBIT/SALES RATIOS



Similarly, industry adjusted EBIT/Total assets ratios exceed their respective industry medians in each post-buyout year, which suggests the buyout companies have achieved relatively high operating efficiency.

Therefore, case evidence supports the proposition that leveraged buyout companies produce comparatively strong EBIT performance. The indifferent Joyce results may reflect the findings of the industry and business attributes tests which

proved Joyce was the most atypical (of the three mid-1980s LBOs) buyout candidate.

Centurion and ACL employee ratio results are consistent with the conclusions of large sample studies (Muscarella et al., 1990; Lichtenberg et al., 1990). Industry adjusted profit per employee ratios were significantly positive despite poor employee efficiency utilisation. Cost control, rather than increased sales, accounted for most of the buyout gains. Joyce industry adjusted employee ratios were mediocre for most of the post-buyout period, due to problems associated with merging other business units into their operations and recession induced layoffs.

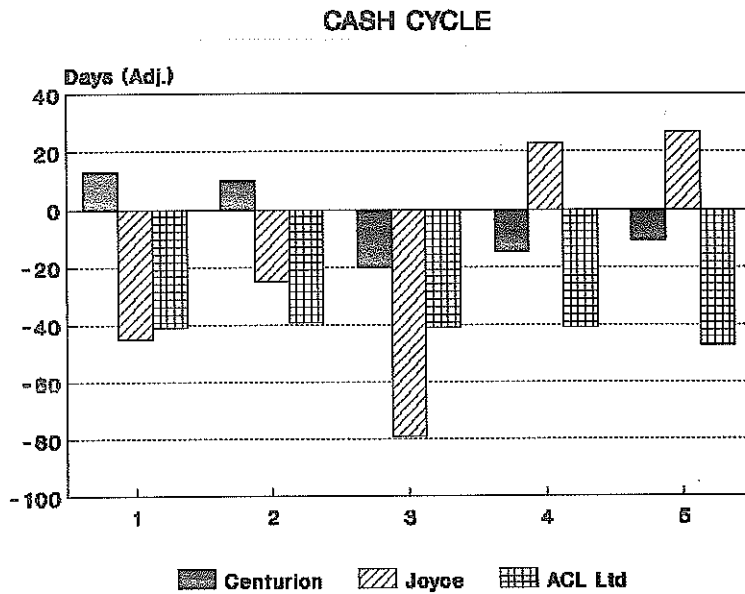
Figure 11.2 indicates that Centurion, Joyce and ACL do not manage their working capital efficiently or effectively. These results contrast markedly with those reported by Maupin et al. (1984), Baker and Wruck (1989), Singh (1990), and Smith (1990).

There is a strong inverse relationship between the length of the cash cycle and the EBIT/Total assets ratios. The decline in Centurion's EBIT/Total asset ratios corresponds with an increase in the length of the cash cycle, and vice versa for Joyce. Reducing the cash cycle toward industry medians provides a source of low cost finance which minimises working capital investments and demands on cash flow.

Industry adjusted capital commitments on fixed assets ratios are consistent with the Muscarella et al. (1990)

assertion that LBOs do not sacrifice long term capital investments to increase debt servicing capacity. Centurion and ACL both invested in productive assets in the post-buyout period.

Figure 11.2



Therefore, the evidence from the six Australian case studies analysed in this thesis is consistent with the agency theory framework established in Chapter Two. The positive industry adjusted post-buyout performance mainly resulted from cost disciplines, which complies with expectations of reduced agency costs due to realigned managerial incentives and effective corporate governance.

## CHAPTER 12

## Future Research on Australian LBOs

The following suggestions for future research on Australian leveraged buyouts are a logical extension of this thesis.

12.1 Organisation Structure

This thesis has confirmed that the theoretical framework which pertains to foreign (US & UK) leveraged buyouts is applicable to the domestic market. Foreign research found the revised capital, ownership and asset structures induced concomitant organisational reform. Australian research into the organisation changes that result from leveraged buyouts should focus on the following issues:

(i) The composition of the Board of Directors as a proxy for the specialist's centralised control over strategic decision making (Easterwood et al., 1989). It would be interesting to compare other buyouts with McEwans, given a Board stacked with financial executives was cited as a reason for the retailers's eventual demise (Dobbie, 1992).

(ii) The change (if any) in corporate hierarchy and/or lines of communication, as an estimate of the decentralisation of operating decisions and elimination of excess bureaucracy expected in leveraged buyouts (Easterwood et al. 1989; Lichtenberg et al., 1990; Muscarella et al., 1990).

(iii) The extent to which executive remuneration contracts incorporate bonus schemes and emphasise the maximisation of firm value (Baker & Wruck, 1989; Jensen & Murphy, 1990).

### 12.2 The Legal and Institutional Framework

This thesis has reviewed academic and trade literature which predominantly emanates from the United States. The legal and institutional arrangements that facilitated the development of their advanced leveraged buyout market, may or may not be present in Australia. Research into the infrastructure of Australian leveraged buyouts should consider the points enumerated below:

(i) The deductibility of debt interest under the Income Tax Assessment Act. Particular emphasis should be placed on the taxation of deferred interest securities, employee stock ownership plans (ESOPs), and limited partnerships. Taxation provisions that negatively affect these financing vehicles may impede LBO market development.

(ii) Provisions of Corporations Law which relate to self dealing (s1002), share-buybacks (s205), and director/officer fiduciary duties of care (s232), may affect management participation in leveraged buyouts.

(iii) The effect of Stamp Duty on the structuring of leveraged buyouts as a share or asset purchase, and the eventual buyout vehicle used (shell company, single/multi-tier).

(iv) The factors which bear on the development of an Australian subordinated debt market. This would include the

securitisation of mezzanine funds to improve liquidity and marketability, and the willingness of fund managers to buy such paper (Madden & Balestrino, 1990; Levi & Bencivenga, 1990).

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## Appendix A

Performance Ratios Used in LBO Case Studies

## 1. EBIT/SALES and EBIT/ASSETS

These are calculated by dividing reported earnings before interest and tax, by gross sales or total assets, respectively.

## 2. SALES/EMPLOYEES

These are calculated by dividing gross sales by the total number of employees.

## 3. PROFIT/EMPLOYEES

The profit measure used in this calculation is net of any preference dividends and minority interests.

## 4. DAYS RECEIVABLES, INVENTORY, CREDITORS

Year end trade debtors, inventory, and trade creditors are multiplied by 365, and divided by gross sales.

## 5. CASH CYCLE

CC = days receivables + days inventory - days creditors.

## 6. CAPITAL COMMITMENTS/FIXED ASSETS

Capital commitments are expressed as a percentage of year end fixed assets.

## Appendix B

Firm and Industry Ratios

Table B1

Centurion Industries Limited

Centurion Industries	1	2	3	4	5
EBIT/Sales (%)	21.4	20.0	20.2	16.1	7.6
EBIT/T.Assets (%)	19.8	19.9	18.7	15.2	9.0
Sales/Employees (\$000)	68.6	71.2	85.1	80.0	138.6
Profit/Employees (\$00)	59.4	59.9	81.9	65.7	52.8
Days Creditors	26.7	27.9	28.8	22.7	25.8
Days Receivables	69.4	61.8	87.3	65.8	65.6
Days Inventory	40.2	47.9	53.5	66.8	57.9
Capital commit./F.Assets	3.8	0.0	0.0	1.6	0.0

Table B2

Joyce Corporation Limited

Joyce Corporation	1	2	3	4	5
EBIT/Sales (%)	12.1	7.8	9.3	6.7	6.0
EBIT/T.Assets (%)	16.1	11.0	5.6	11.1	10.6
Sales/Employees (\$000)	57.2	67.4	38.2	116.4	182.6
Profit/Employees (\$00)	21.1	15.9	16.9	20.8	19.5
Days Creditors	32.7	30.9	100.2	37.9	33.4
Days Receivables	71.9	54.1	93.9	43.5	40.8
Days Inventory	82.8	82.3	161.9	45.2	43.5
Capital commit./F.Assets	3.2	0.0	0.0	0.0	0.0

Table B3

Automotive Components Limited

Automotive Components	1	2	3	4	5
EBIT/Sales (%)	12.9	16.0	15.6	14.3	11.2
EBIT/T.Assets (%)	15.8	15.8	15.4	14.5	10.4
Sales/Employees (\$000)	67.6	81.1	84.9	89.1	87.1
Profit/Employees (\$00)	28.6	31.7	38.6	39.1	12.1
Days Creditors	44.9	37.3	23.1	23.9	31.6
Days Receivables	62.4	60.9	60.4	56.4	57.9
Days Inventory	83.1	77.9	77.9	86.2	98.8
Capital commit./F.Assets	11.3	10.1	12.5	11.1	8.5

Table B4

Industry Report No. 11

Engineering (Median)	1	2	3	4	5
EBIT/Sales (%)	6.3	7.6	7.8	7.1	4.6
EBIT/T.Assets (%)	8.2	9.2	9.9	10.9	8.1
Sales/Employees (\$000)	92.4	100.8	111.6	130.7	133.4
Profit/Employees (\$00)	22.9	32.8	44.9	36.5	27.7
Days Creditors	35.9	36.4	34.6	32.7	27.7
Days Receivables	60.0	61.1	63.2	59.8	49.5
Days Inventory	71.5	67.0	63.5	67.4	65.4
Capital commit./F.Assets	1.0	1.4	0.6	0.1	0.0

Table B5

Industry Report No. 22

Misc. Industrials (Median)	1	2	3	4	5
EBIT/Sales (%)	5.7	7.6	3.4	5.2	5.9
EBIT/T.Assets (%)	7.3	9.5	4.3	7.4	6.2
Sales/Employees (\$000)	128.3	120.5	102.4	107.6	122.9
Profit/Employees (\$00)	24.2	32.1	4.9	24.9	20.8
Days Creditors	35.7	33.9	30.3	28.5	24.9
Days Receivables	51.8	48.4	42.9	45.6	39.3
Days Inventory	61.2	66.1	63.9	56.6	63.6
Capital commit./F.Assets	0.7	0.1	0.0	0.6	0.5