

ON THE DETERMINANTS OF LEVERAGED BUYOUT ACTIVITY

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Abstract

This thesis provides a facettted overview of the leveraged buyout phenomenon and its place in the corporate finance and corporate governance field. It assesses the scope and quality of the theoretical framework on the determinants of leveraged buyout activity and its validity in a modern day context. The leveraged buyout is decomposed in its (1) history and progress, (2) role as an external and internal corporate governance device, and (3) determinants, as hypothesised in empirical and theoretical research. Additionally, a case study of the recent large-scale leveraged buyout of Danish incumbent telecom operator TDC A/S serves to assess the contemporary explanatory power of leveraged buyout theory. We find that, while theories and hypotheses on the determinants might not fully capture all current economic aspects and private equity strategies in detail, most still have significant explanatory power for today's leveraged buyout activity as illustrated by the TDC case.

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Index

1 INTRODUCTION	1
1.1 Overview	1
1.2 Purpose	1
1.3 Delimitations.....	2
1.4 Outline	3
2 THE LEVERAGED BUYOUT	4
2.1 LBO Characteristics.....	4
2.2 Private Equity as an Investment Asset Class	5
2.3 Structuring the Leveraged Buyout	7
2.3.1 Share Purchase Transaction Structures	7
2.3.2 Debt and Equity Syndication.....	9
2.4 The History of Leveraged Buyouts	9
2.4.1 The Roaring 80s.....	10
2.4.2 Modern Leveraged Buyout Activity.....	11
3 THE ECONOMICS OF CORPORATE GOVERNANCE	15
3.1 The Principal-Agent Conflict	15
3.2 Corporate Governance Mechanisms.....	16
3.2.1 The Market for Corporate Control.....	16
4 THE DETERMINANTS OF LEVERAGED BUYOUTS.....	19
4.1 Leveraged Buyout Value Creation and Sources of Gains	19
4.2 Incentive Realignment Hypotheses	20
4.2.1 The Free Cash Flow Hypothesis.....	20
4.2.2 Ownership Concentration Monitoring Effect	25
4.2.3 Managerial Equity Ownership.....	25
4.3 Tax Benefit Hypothesis.....	26
4.4 Stakeholder Wealth Transfer	27
4.4.1 Costs to Existing Creditors	28
4.4.2 Costs to Employees and Local Communities	30
4.4.3 Costs to Suppliers and Customers	30
4.4.4 Costs to Tax Receiving Entities	31

4.6 Other Determinants.....	32
4.6.1 Informational Asymmetry	32
4.6.2 Eliminating Public Listing Costs	33
4.6.3 Takeover Defence	36
4.6.4 Transaction Cost Criticism.....	37
4.7 Differentiating Features of Modern Leveraged Buyout Activity	38
4.7.1 Financial Buyers as Strategic Buyers?	38
4.7.2 Economic Conditions and Liquidity Sloshing.....	39
4.7.3 Private Equity Capital Abundance	40
5 CASE STUDY – TDC A/S	41
5.1 Case Outline.....	41
5.2 Company Profile	42
5.3 Stakeholder Wealth Effects	44
5.3.1 Shareholder Wealth Effect.....	44
5.3.2 Managerial Wealth Effect.....	46
5.3.3 Creditor Wealth Effect	49
5.3.4 Other Stakeholder Wealth Effect.....	50
5.4 NTC's Investment Case	50
5.4.1 Operating Improvement Potential.....	51
5.4.2 Cash Flow Characteristics	51
5.4.3 Market Position.....	51
5.4.4 Non-core Disposals Available	52
5.4.5 Opportunity to Optimise Capital Structure.....	52
5.5 Theoretical Framework Explanatory Power	53
5.6 Concluding Remarks on Case	55
6 CONCLUSION	57
APPENDIX.....	59
BIBLIOGRAPHY	62

1 INTRODUCTION

1.1 Overview

The leveraged buyout (LBO) was much debated in the wake of the takeover wave of the 1980s when the phenomenon first gained momentum. Ever since, it has been blamed for much evil, while its proponents have argued in favour of its efficiency and value creation. Empirically, leveraged buyouts have, unlike merger and acquisition (M&A) activity in general, presented indubitable evidence of improvements in operating performance.¹ In recent years the leveraged buyout has, once again, gained immense popularity as a takeover mechanism and is widely discussed in the media. Nine out of the ten largest buyouts in history were indeed announced in 2005.² Especially the European private equity market is flourishing, as LBO volumes represent a steadily increasing proportion of total M&A volumes.³ Current private equity fundraising is reaching levels even unprecedented by the roaring 1980s and further rounds of large LBOs are imminent, as significant capital is committed and waiting to be invested. In Europe, there is about €50bn of uninvested capital to spend, equating to up to €200bn on a leveraged basis.⁴

What then are the sources of gains that determine the likelihood and success of leveraged buyout activity? There is a vast amount of theory discussing leveraged buyouts, most of which was written during, or in the immediate aftermath of, the 1980s' takeover wave. This thesis provides a faceted overview of the leveraged buyout phenomenon and its place in the corporate finance and corporate governance field. Considerable emphasis is placed on the determinants of modern leveraged buyout activity.

1.2 Purpose

This thesis surveys the literature on leveraged buyout activity and, in particular, its determinants. The aim is to decompose the leveraged buyout in its (1) history and progress, (2) role as an external and internal corporate governance device, and (3) determinants, as

¹ Opler (1992), Muscarella and Vetsuypens (1990), Kaplan (1988b), Bull (1988)

² Source: Wall Street Journal (Dec. 1st 2005)

³ Source: Thomson Financial

⁴ Assumes $\geq 25\%$ equity contribution. Source: Private Equity News

hypothesised in empirical and theoretical research. Additionally, new evidence and alternative explanations voiced in the present leveraged buyout debate are brought up to distinguish features of modern LBOs not hypothesised in theoretical research. A case study of the recent large-scale LBO of Danish incumbent telecom operator TDC A/S – the largest of its kind in European history and the second largest in the world to date – serves to assess the explanatory power of existing theory for modern leveraged buyout activity. The overall purpose is to assess the scope and quality of the theoretical framework on the determinants of leveraged buyout activity and its validity in a modern day context.

1.3 Delimitations

This thesis is of theoretical delimitation as opposed to empirical statistical studies. The scope of the theoretical framework is thereby widened as should be seen as the cornerstone of the thesis. As most theories and research stem from the US and have a US focus, it is not straight forward if these are directly applicable to the European market, which is the focus of much modern leveraged buyout debate as well as our case study. Nonetheless, it is our belief that the theoretical general corporate finance nature of most hypotheses makes their applicability to the European and Western industrialised economies in general likely.

The primary focus of the thesis, as suggested by the title, lies in analysing the underlying reasons – or determinants – of leveraged buyout activity. Although the strong theoretical anchoring of the thesis will aim to explore the universe of theories on leveraged buyouts, the main focus will be on the early stage actual and predicted gains, rather than analysing whether long-term profitability is sustained. Furthermore, the particular interest in LBOs lies in the public-to-private transaction and its typical application, the tender offer. Other forms of buyouts will be discussed in less detail, en passant.

It should be noted that, the quality and explanatory power of the existing theoretical framework on the determinants is assessed both in kind and by means of application to a modern day LBO. The single case presented – although surely representative of the sophistication and stage of the leveraged buyout today – naturally cannot be regarded as universal proof on the determinants. It should be thought of as an illustrative example of various explanatory aspects.

1.4 Outline

The thesis proceeds as follows. In section 2, private equity is presented as an investment asset class. The leveraged buyout phenomenon is illustrated in its characteristics, funding and process. The history of leveraged buyout activity is described and a detailed account of the current (European) LBO market is given. Section 3 outlines the leveraged buyout's theoretical corporate finance and corporate governance foundation. In section 4 the plausible sources of value gains in – and hence the determinants of – the buyout phenomenon are presented. Beside the hypotheses suggested in financial research, section 4 also presents new evidence and alternative explanations on the determinants, raised by today's leveraged buyout wave. In section 5, we exemplify the present-day topicality of leveraged buyouts. We present and analyse the recent leveraged buyout of Danish incumbent telecom company TDC A/S (“TDC”) by Nordic Telephone Company ApS (“NTC”) – a consortium consisting of the private equity limited partnerships Apax Partners Worldwide LLP, The Blackstone Group International Limited, Kohlberg Kravis Roberts & Co. L.P., Permira Advisors KB and Providence Equity Partners Limited. Section 6 concludes.

2 THE LEVERAGED BUYOUT

2.1 LBO Characteristics

The leveraged buyout describes a takeover of a company – or controlling interest in a company – using an extensive amount of leverage.⁵ The equity contribution to leveraged buyouts by financial investors⁶ and/or management of the company about to undergo a leveraged buyout⁷ typically accounts for only c.25-35% of acquisition funding. The remainder is debt in the form of a variety of highly structured debt instruments.⁸ If the incumbent management is the originator of the leveraged buyout the process is denoted *management buyout* (MBO). A leveraged buyout by an external management team⁹ is denoted *management buy-in* (MBI). Leveraged buyouts can furthermore be classified into *corporate divestments* (“Divisional spin-off”), *public-to-private* (“P2P”) transactions where the target is taken private by a de-listing from the stock exchange(s), or *secondary buyouts*¹⁰ representing a sale of an already taken private target to another financial investor in the private market.¹¹

Form	Characteristics
Management Buyout (MBO)	<ul style="list-style-type: none">• Incumbent management acquiring firm with outside financing• Generally teaming up with financial sponsor
Management Buy-in (MBI)	<ul style="list-style-type: none">• External management acquiring firm with outside financing• Generally teaming up with financial sponsor
Public-to-Private (P2P)	<ul style="list-style-type: none">• Financial sponsor (and/or MBO, MBI) extend tender offer to take publicly traded company private
Divestment	<ul style="list-style-type: none">• Financial sponsor (and/or MBO, MBI) acquiring a division of a public or private company
Secondary Buyout	<ul style="list-style-type: none">• Financial sponsor acquiring LBO investment from another financial sponsor

Table 1: Common LBO Variants

⁵ Leverage being a measure of either the extent to which the transaction is debt-financed (as reflected by debt-to-equity or debt-to-firm value ratios) or of the extent to which a firm’s cash flows are burdened with debt (such as net interest expense-to-EBITDA)

⁶ Throughout the thesis also denoted “private equity” or “financial sponsors”

⁷ Going forward, the “company about to undergo a leveraged buyout” will be denoted “target”

⁸ Mezzanine (strip financing; incorporating equity-based options such as warrants with lower priority debt), High yield (non-investment grade “junk” bonds) and PIK notes (“payment-in-kind” securities paying interests in the form of additional bonds)

⁹ Individual investors known as corporate raiders might fill such as competing management function. Corporate raiders’ investment may be limited in scope, but can certainly be impressively effective, allowing e.g. players Carl Icahn and Kirk Kerkorian to make history with their respective investments in TWA Airlines and Chrysler

¹⁰ Where secondary buyouts incorporate plausible tertiary and, in rare cases, even quaternary buyouts

¹¹ Leveraged buyouts do also occur in the private sector, taking the form of private-to-private transactions. This is however outside the focus of thesis. For a thorough overview of LBO forms and characteristics see Loos (2005)

In contrast to the takeover forms of M&A, the leveraged buyout most commonly relies on the assets of the *target* to serve as collateral for loan financing, enabling the financial sponsor and/or management to invest in an organisation without having the assets-in-place of a strategic buyer¹². Throughout the holding period¹³, which typically lasts between 3 and 7 years, the cash flows of the target firm are used to pay down the acquisition debt. Combined with growth in operating income and an exit at a higher price than paid in entry, this process describes the typical value creating investment case of private equity.¹⁴ Exit strategies of leveraged buyouts comprise a sale to a trade player (“*trade sale*”) or to another financial sponsor in a *secondary buyout*, a flotation to the stock market in a public offering (*IPO*¹⁵), or a *leveraged recapitalisation*¹⁶.

Form	Characteristics
Trade Sale	• Sale to corporate
Secondary Buyout	• Financial sponsor acquiring LBO investment from another financial sponsor
IPO	• Flotation to the public on the stock market
Leveraged Recapitalisation	• Taking on new debt to distribute as dividends • Ownership in buyout investment remains • Possibility for financial sponsor to cash out independent of trade/IPO appetite

Table 2: LBO Exit Routes/Strategies

2.2 Private Equity as an Investment Asset Class

Private equity organisations typically construct their investment vehicle – the buyout fund – in a Limited Partnership. The investment managers of the private equity organisation take the active role of general partners while institutional investors. The limited partners, by far the greatest capital contributors to the buyout fund, invest passively.¹⁷

¹² Strategic buyer, or “trade player” is a common denotation for a corporation with strategic interest in an acquisition

¹³ The holding period denotes the time period between the financial sponsor’s and/or management’s entry into and exit out of the LBO investment

¹⁴ In contrast to M&A activity in general, where the focus lies in value creation through the achievement of synergies

¹⁵ Strictly speaking the flotation on the stock market is usually not an initial public offering (IPO) but a secondary or re-offering, though IPO remains the common denotation

¹⁶ Note however that while the financial sponsor can recoup her investment in a leveraged recapitalisation, the target remains unsold and in the hands of the (same) PE investor. Also note that leveraged recapitalisations outside the context of the LBO debate are a form of takeover defence, as firms take on additional debt to pay out to the stockholders in the form of dividends or in a share buyback program, making themselves less desirable for a potential hostile takeover

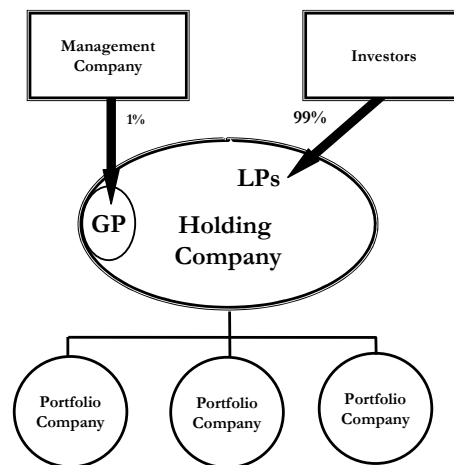
¹⁷ Private equity is not limited to only buyout investments, but can also regard for example Seed Capital, Venture Capital or Development Capital. However, we will throughout the thesis refer to private equity with respect to buyout investments

The Limited Partner (LP)

The limited partner generally commits usually c.99% of the total capital to the fund with a typical required return of at least 20-25%. The limited partner further typically demands c.80% of the total gains of the investments. The limited partners are often pension funds, institutional investors such as mutual funds, or high net worth individuals.¹⁸

The General Partner (GP)

The general partner generally commits only the remaining c.1% of the capital, demanding a management fee of c.1.5-2.5%. Moreover, the management generally receives c.20% of the gains of the limited partnership that exceeds the required return of the limited partner.¹⁹ The active role of the general partner encompasses identifying potential targets for investment, analysing the investment case, negotiating a takeover with the target management, structuring the deal, appointing executives for the buyout organisation as well as monitoring and advising the portfolio companies' management. The final task of the general partner is seeking suitable exit opportunities in trade sales, secondary buyouts, public offerings on a stock exchange or leveraged recapitalisation.



Graph 1: Typical Private Equity Firm Structure

- Fund Limits -

Investments in buyout funds are limited in *size*, as the interest of institutional investors has created the need for general partners to curb funding (i.e. close funds) to redeem the

¹⁸ Shleifer and Vishny (1988)

¹⁹ Gabriel Urwitz, Partner and Chairman AB Segulah at a guest lecture at the Stockholm School of Economics

required rate of return for the entire fund amount. Individual commitments are usually limited both in minimum and maximum amount, limiting the number of investors to a few, while ensuring that no individual investor can gain major influence in the fund.

Investments are also limited in *duration*, as capital commitments to buyout funds are not injected as actual cash flows until investment opportunities arise. This mechanism is referred to as *drawdown* and has its logic in ensuring that the internal rate of return of the investment is calculated in the actual investment – and not commitment – period, in order to enable the achievement of the high return requirements of the partners. The commitment period, in which the limited partner is obliged to have its committed capital readily available for investment by the buyout fund, is in general c.10 years.²⁰

2.3 Structuring the Leveraged Buyout

The buyout transaction can be structured as an asset purchase or a share purchase. The asset purchase, with its clear identification of purchased assets and assuming of liabilities relating exclusively to these assets, might be beneficial as it allows for easier access to secured debt financing and lower cost of debt. However, the faster share purchase option is the predominant form of structuring the LBO transaction, particularly when the target is a large, publicly listed enterprise with dispersed ownership.²¹

2.3.1 Share Purchase Transaction Structures

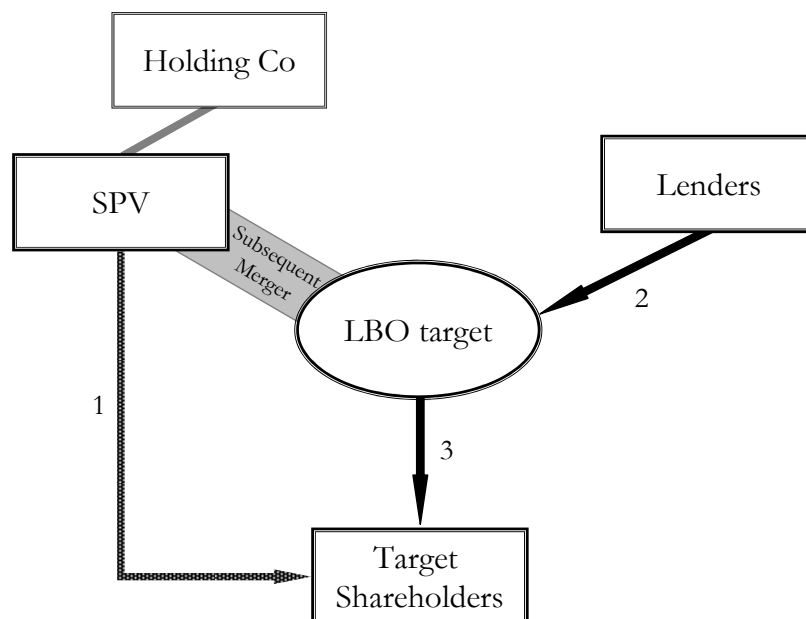
The buyout target of a LBO transaction is purchased using a holding company and usually one or more *Special Purpose Vehicle* (SPV) companies. These are commonly denoted *TopCo:s*, *PIKCo:s*, *MidCo:s*, *BidCo:s* etc depending on the respective function they serve. The structure of each transaction is specially designed and carefully implemented to ensure the optimal structure with respect to tax and legal issues.

²⁰ Loos (2005)

²¹ Piatkowski (2001)

- *The Public Tender Offer* -

While in the US the most widely spread buyout mechanism is that of the cash merger²², the typical mechanism for especially larger European P2P deals is that of the public tender offer. Simplistically illustrated, in a public tender offer, a special purpose vehicle announces the tender offer for the shares of the target company (→1), usually conditioned upon a certain acceptance level²³, as well as on the successful merger of the SPV with the target company after the offer, and sometimes on other clauses such as financing. A tender acceptance and subsequent merger of the SPV with the target, in turn, fulfils the covenant requirements of the loan financiers (→2), and the debt is used to buy the shares from the current shareholders of the target company (→3).



Graph 2: *The Public Tender Offer*

In a large-scale buyout however, the actual merger between the SPV and the target might take more than a year. In such cases, the share purchase begins instantaneously after an acceptance of the tender offer. Senior debt (and possibly subordinated bridge loan) will be

²²In the cash merger a SPV is merged with the target company. The combined company then converts its shares into financial liabilities and the current shareholders of the target company become the new creditors. Lenders then use the target – or merged – company’s assets and future cash flows as collateral for loan financing. The loan capital is eventually used to pay down the liabilities due to the original shareholders – now creditors. Cf Piatkowski (2001) for a detailed description of the cash merger, tender offer and other leveraged buyout mechanisms

²³ Commonly 80% or 90% of the tender offer

issued on a SPV and it will take a *debt push-down*²⁴ in one or more steps for the leverage to ‘arrive’ at the target. The merger between SPV and target takes place after the completion of the debt push-down.

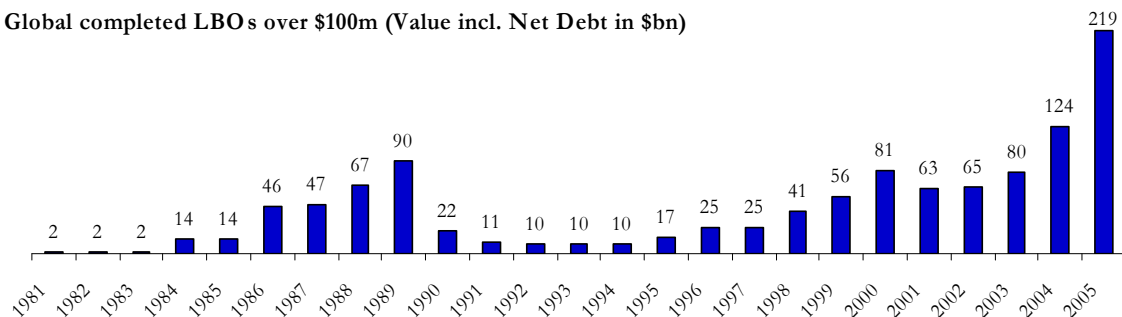
2.3.2 Debt and Equity Syndication

In equity contribution, the financial sponsor and/or management of the target firm typically raise about 25% -35%²⁵ in capital. In very large deals this equity can be further syndicated to outside equity investors. Debt funding is raised in a process where 50-60% are secured bank acquisition loans collateralised against the target’s assets. The remainder is raised issuing senior and junior subordinated so-called “mezzanine” debt in private placements and/or public high-yield (junk) bonds. Depending on the size of the acquisition, part of the public debt is, in turn, syndicated to commercial banks.²⁶

2.4 The History of Leveraged Buyouts

Takeover activity has historically been occurring in waves.²⁷ This cyclical nature also seems to be persistent for LBOs. Buyout activity increased steadily during the 1980s with a spike in 1989, followed by a period of low buyout volume. During the technology boom of the late 1990s LBOs gained momentum again and activity has risen to unprecedented values in the 21st century.

Global completed LBOs over \$100m (Value incl. Net Debt in \$bn)



Source: Thomson Financial

Graph 3: Global LBO Volume 1981-2005

²⁴ A debt push-down refers to the downstream transfer of debt from a SPV onto the target in exchange for an upstream dividend payment out of distributable reserves from the target to the SPV in the same amount

²⁵ Percentage contribution varies with deal size. Management’s contribution in LBOs is typically 1% to 10%. (Gabriel Urwitz)

²⁶ Weston, Chung and Hoag (1990)

²⁷ Andrade, Mitchell and Stafford (2001)

2.4.1 The Roaring 80s

Leveraged Buyout funds are a relatively new financial invention and were at first a phenomenon of the takeover wave of the 1980s. Prior to this private equity had largely been of a venture capital nature and confined to investments in small fast-growing private companies. The principal actors of that time were a handful of wealthy families that were taking controlling interests in companies. The takeover wave of the 1980s was a result of deregulation and technological improvements during the 1970s. Managers were slow to respond to these changes which lead to a “wedge between actual and potential performance” that a potential acquirer could use to her advantage.²⁸ Jensen (1988) identifies four major economic and political conditions that contributed to the takeover wave of the 80s:

- i. *Relaxations on restrictions on mergers.* Antitrust regulators in the US came to allow larger mergers and acquisition than before due to increased international competition.
- ii. *Withdrawal of resources from steady industries.* Increased competition from foreign markets forced corporations to focus on their core-competences and sparked deconglomerations. Firms could achieve an exit from an unprofitable industry cheaper through a divestiture than the liquidation of assets in bankruptcy.
- iii. *Deregulations in numerous protected industries* sparked deals in industries such as oil and gas, broadcasting, financial services, and airlines. Deregulations continued to play a major role during the 1990 in other industries.
- iv. *Improvements in takeover technology.* New financial inventions such as takeover financing with non-investment grade so-called “junk” bonds, pioneered by Michael Milken at Drexel Burnham, increased the sophistication of takeover strategies.²⁹ These financial inventions allowed big corporations to be taken over by much smaller competitors or financial investors financing the acquisition with a high proportion of debt.

Similarly, Shleifer and Vishny (1988) name “(...) *the availability of junk bond financing, the leniency of the Reagan administration antitrust stance, and the deregulation of transportation and banking*” as major contributing factors of the change in takeover environment in the 1980s.

²⁸ Holmström and Kaplan (2001)

²⁹ Cf Jarrell, Brickley and Netter (1988)

LBOs became larger and more common during the Reagan era and can to some extent be seen as a reaction to the increasing amount of hostile takeover activity.³⁰ Although some of the most famous buyouts of the decade were in fact hostile (the most prominent being the \$25bn buyout of RJR Nabisco in 1989 by Kohlberg Kravis & Roberts), management led buyouts were often a reaction to a hostile tender offer on the firms shares. By the mid 80s buyouts of large well known public corporations had become standard practice. In 1989 the buyout wave reached its peak with worldwide deals for a combined value of \$90bn.³¹

2.4.2 Modern Leveraged Buyout Activity

- Global trends -

During the latter half of the 1990s, global buyout activity gained momentum again as unparalleled floods of capital from pension funds, institutional investors and wealthy individuals, were committed into buyout funds.³² This period has seen a large increase in capital invested in high-yield mutual funds and the evolvement of subordinated and mezzanine debt markets to mature and competitive industries. And although suspicion towards the private equity industry still exists, it has largely lost its image of being a bunch of “irresponsible corporate raiders” and has evolved into a competitive and institutionalized class of asset managers. These factors have led to an increasingly competitive lending environment. This, combined with low interest rates, have favoured the conditions for buyout activity. The general economic upturn led to more liquidity in the market for raising new buyout funds. The LBO wave that started in the late 90s however differed substantially from the buyouts of the 80s. Li and Wang (2002) sum up the main differences:

“The 1990s’ LBOs were done with fewer ideal targets, more intense competition, less leveraged capital structure, different sources of value created, and a sharply reduced mean industry return.”

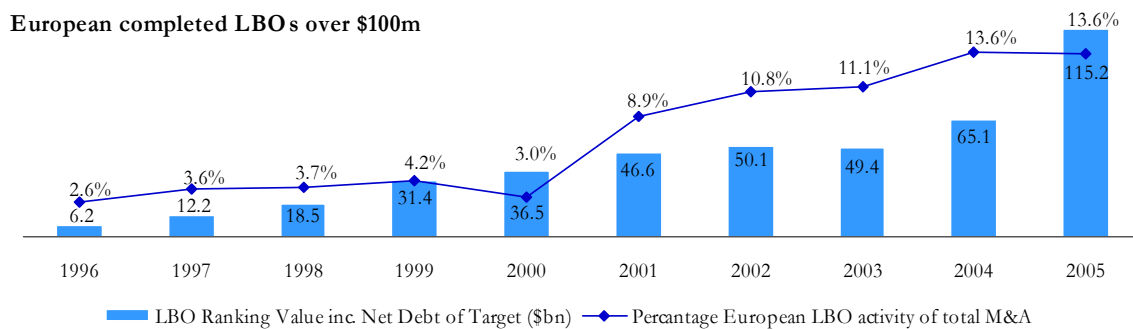
³⁰ Jarrell (1992)

³¹ Source: Thomson Financial

³² Li and Wang (2002)

- *The European Private Equity Market* -

Private equity has matured into a bona fide capital market and private equity houses have become potential investors in almost every M&A situation, repeatedly overbidding trade players in auctions,³³ although no or only limited operational synergies can be achieved. Especially the European private equity market, while still significantly underinvested relative to its US counterpart, is flourishing. European buyout activity is representing an increasing proportion of total M&A volumes.³⁴ An increasing percentage of these European buyouts are driven by large transactions with a significant number of transactions over €3bn.³⁵



Source: Thomson Financial

Graph 4: European LBO stand-alone value and percentage of total European M&A volume 1996-2005

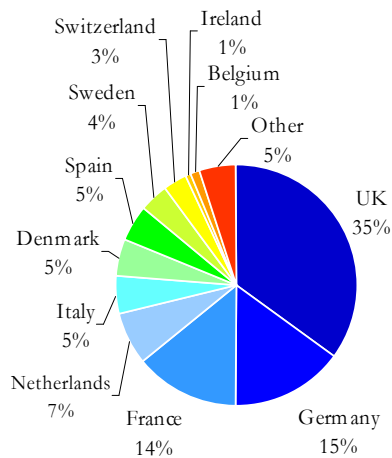
³³ Such as in the case of e.g. Amadeus or Rexel. In addition Swisscom was thought to be a takeover candidate for TDC, although no committed offer was reported

³⁴ Source: Thomson Financial

³⁵ e.g. TDC, Rexel, Basell, ISS, Amadeus, TDC

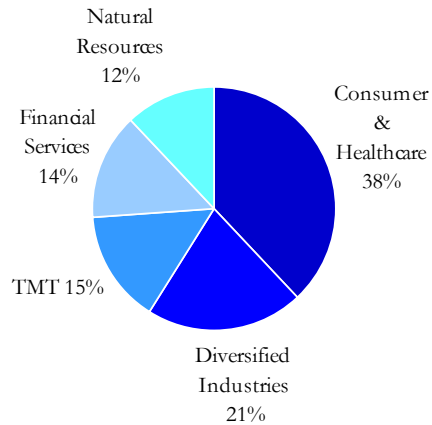
A breakdown of European LBOs by geography and industry presents the following picture:³⁶

Geography breakdown 2001-2005



Graph 5: LBO activity by Region

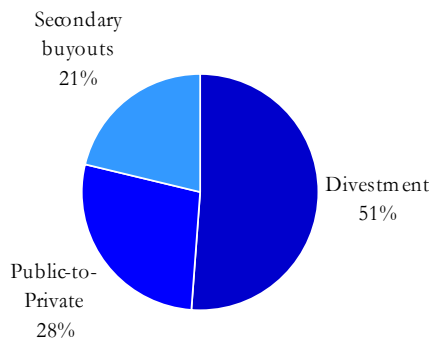
Industry breakdown 2001-2005



Graph 6: LBO activity by sector

The classification of European LBOs shows that divestments, such as divisional spin-offs, represent about half of all LBOs in 2001-2005, public-to-private deals about a third, and secondary buyouts the remaining fifth.

Classification 2001-2005



Graph 7: LBOs by transaction type

Similarly, out of the top ten European leveraged buyouts in 2005, five represented public-to-private transaction, three were divestments, and the remaining two were secondary buyouts.³⁷

³⁶ Based on total 2001-2005 deal value. Source: Mergermarket, Thomson Financial

³⁷ See Appendix section A.1. Source: Mergermarket, Thomson Financial

Europe is also seen as the big opportunity for private equity in the future and average fund sizes are increasing with the most successful firms raising funds of €4bn and more. At present, there is about €50bn of uninvested capital to spend, equating to up to €200bn on a leveraged basis.³⁸ Furthermore, there are several large European funds currently being raised, including a €9bn buyout fund by Permira.³⁹

³⁸ Assumes $\geq 25\%$ equity contribution. Source: Private Equity News

³⁹ For a detailed list of current fundraising and closed selected funds please refer to the Appendix section A.2

3 THE ECONOMICS OF CORPORATE GOVERNANCE

3.1 The Principal-Agent Conflict

When the owners of corporations hire professionals to manage their firm, a potential problem of differential incentives – a so-called *principal-agent* conflict of interest – is created.⁴⁰ Shareholders are purely interested in the security benefits of their shareholding. Managers on the other hand enjoy private benefits of control such as prestige and perquisites, and might not have the incentives to (purely) act in shareholders' interests. Potential problems with resulting *moral hazard*⁴¹ situations are particularly pronounced when internal control mechanisms fail to accurately incentivise and monitor management.⁴² This is often the case when shareholding is dispersed and communication and coordination between owners is difficult. As control actions such as replacing current management are costly, at least in opportunity cost, and the single shareholder hence has incentives to *free-ride* on other investors' actions. The value potential of monitoring management of a company with dispersed shareholdings consequently suffers from the fact that it is a *public good*.⁴³

The severity of principal-agent conflicts furthermore depends on the complexity of business decisions and other *informational asymmetries*⁴⁴ that reflect superior knowledge and information of the management. Additionally, the extent of potential wrong-doing such as unwise investment decisions naturally depends on how much excess cash exists in the firm that the manager can spend at her discretion.

⁴⁰ The impact of this *separation of ownership and control* was first noticed by Berle and Means (1932). Cf also Fama and Jensen (1983)

⁴¹ Moral hazard problems include *inefficient investment, entrenchment, insufficient effort* and *self-dealings*

⁴² See Shleifer and Vishny (1988) for a discussion on the failure of internal controls

⁴³ Cf e.g. Amihud (1983), Jensen and Murphy (1990). Jensen and Ruback (1983) describe monitoring of management in further detail

⁴⁴ *Informational asymmetries* between management and shareholders are often caused by changes in the firm's environment such as e.g. change in technology, new markets or means of financing. For more information on managerial inefficiency resulting from contracting under asymmetric information see e.g. Harris and Raviv (1979)

3.2 Corporate Governance Mechanisms

The leveraged buyout is unprecedented in combining the external governance mechanism of efficiency inducing takeovers with incentivising managerial compensation as well as the monitoring functions of debt and concentrated ownership

Corporate governance mechanisms – both internal and external – work to mitigate the adverse effect of the separation of ownership and control, either by aligning managerial incentives with those of shareholders or by creating a monitoring structure which disciplines corporate insiders. External governance mechanisms include legal rules, norms and public opinion, product market competition and the market for corporate control. Internal governance mechanisms are inherent in debt, ownership concentration, the board of directors and executive compensation.⁴⁵ The bold areas in the following table indicate LBO applicability in fulfilling such a governance role. As we shall see in this and following sections, the leveraged buyout is unparalleled in fulfilling multiple governance mechanisms.

External	Internal
• Legal rules	• Debt
• Norms and public opinion	• Ownership concentration
• Product market competition	• The board of directors
• Market for corporate control	• Executive compensation

Table 3: Corporate Governance Mechanisms and Leveraged Buyout Applicability

We will here describe the background theoretical framework on the *external* corporate governance mechanism of the market for corporate control. The *internal* governance mechanisms will play a major role in assessing *incentive realignment* in section 4.

3.2.1 The Market for Corporate Control

Where shareholders do not monitor management efficiently there might be third parties, or so-called “competing management teams”⁴⁶ that are willing to exercise this form of control.⁴⁷

⁴⁵ Denis and McConnell (2003)

⁴⁶ In the parlance of Jensen and Ruback (1983)

⁴⁷ Von Thadden (1990)

The competition among third parties for replacing an incumbent management team is what constitutes the *market for corporate control*.⁴⁸ In this initial notation of the competitive efficiency of the market for corporate control it is assumed that, since corporate control is an asset, share prices reflect managerial (in)efficiency. A poorly managed firm will hence be more likely to be taken over as third parties realise this “get-rich-quick” opportunity.⁴⁹ Empirical findings support the view that targets of (hostile⁵⁰) bids have characteristics that radiate the need for external discipline.⁵¹

The market for corporate control is generally seen as a valuable dynamic in re-aligning the interests of management and owners - both ex-post and ex-ante – and as an indirect means for shareholders to renegotiate inefficient contracts that govern their relationship with the firm’s management.⁵²

- *Ex ante efficiency* -

It is widely recognised in neoclassical corporate finance literature that not only the completion of a takeover is a means of cutting out agency conflicts, but that the mere existence of a takeover threat is a powerful force for disciplining managerial misconduct.⁵³ The large-scale restructurings carried out by incumbent management teams in the takeover-heavy 1980s are thought of as an example of ex ante efficiency of takeovers.⁵⁴

Takeover opponents however argue that the existence of a takeover threat might actually trigger inefficient managerial behaviour rather than reducing it. This situation is especially likely if takeovers are undertaken for reasons other than inducing efficiency.⁵⁵ If for instance

⁴⁸ As first defined by Manne (1965)

⁴⁹ Manne (1965)

⁵⁰ Whether a takeover is labeled friendly or not might in fact largely be a reflection of the negotiating strategy of the acquiring firm (Schwert (2000)). Many bids contain elements of both friendly and hostile bids. For a discussion of this topic refer to Burkart and Panunzi (2006)

⁵¹ Morck, Shleifer and Vishny (1988) study 371 firms from the 1980 Fortune 500, of which 40 had been acquired between 1981 and 1985 in a (at least initially) hostile takeover process, the average 1980 Tobin’s q (the ratio of the market value of the firm to the replacement cost of assets) – which proxies how well a firm is managed – for the targets was .524, that is almost 40% less than the average .848 of the whole sample

⁵² Grossman and Hart (1980). Scharfstein (1988) takes this formal argument further in developing a model for contractual inefficiencies

⁵³ Grossman and Hart (1980)

⁵⁴ Holmström and Kaplan (2001)

⁵⁵ A situation not characteristic of the LBO

the potential acquirer is headed by an empire-building manager, a well performing firm is indeed more likely to become a takeover target.

- *Ex post efficiency* -

Ex post efficiency of takeovers, in turn, describes the replacement of inefficient management by a competing management team that can ensure that resources are brought to their highest value-in-use.⁵⁶ Operating performance improvements in takeovers ex post are widely claimed but scarcely confirmed in empirical studies, the exception being LBOs. Companies that were taken private in a leveraged buyout have on average performed significantly better than other companies.⁵⁷

⁵⁶ Jensen and Ruback (1983)

⁵⁷ Lehn and Poulsen (1989)

4 THE DETERMINANTS OF LEVERAGED BUYOUTS

4.1 Leveraged Buyout Value Creation and Sources of Gains

Empirically leveraged buyouts have presented clear evidence of ex post takeover gains and value creation. Studies from the US show average share price premia in the range of 35% to 56%.⁵⁸ European studies in this field are still somewhat rare, although recent evidence suggests shareholder value gains in the range of 36% to 41%.⁵⁹ When it comes to post-takeover operating performance, LBOs, unlike M&A activity in general, present indubitable evidence of improvements. While takeovers in general show operating performance changes in the range –5% to +5%,⁶⁰ LBOs have on average generated significant improvements in operating profitability.⁶¹ Even the firms whose debt burden rendered them insolvent and forced them into bankruptcy in the late 1980s, often showed significantly improved operating performance before failing.⁶²

The actual sources of these gains are however more difficult to assess. As the leveraged buyout transaction does not combine two separate units into one, shareholder gains cannot be attributed to synergies.⁶³ Various explanations for value gains in leveraged buyouts are presented in takeover literature, the most influential of which can be categorised depending on their association of value gains with incentive realignment, tax benefit or stakeholder wealth transfer. Other plausible determinants include informational asymmetry and undervaluation, the elimination of public listing costs, takeover defence and transaction costs. Furthermore, the modern leveraged buyout debate has brought new economic and strategic factors to the table that might add to the determinants of leveraged buyout activity.

⁵⁸ DeAngelo, DeAngelo and Rice (1984), Lowenstein (1985), Lehn and Poulsen (1989), Weir, Laing and Wright (2005)

⁵⁹ Betzer (2005), Rennebough, Simons and Wright (2005)

⁶⁰ Burkart and Panunzi (2006)

⁶¹ Muscarella and Vetsuypens (1990)

⁶² Andrade and Kaplan (1998)

⁶³ The exception being “buy-and-build” strategies where the financial sponsor subsequently buys out further targets to create synergetic gains with the original investment

4.2 Incentive Realignment Hypotheses

Arguably the most influential hypothesis in takeover and leveraged buyout literature, the incentive realignment hypothesis argues that post takeover operating improvements result from the realignment of interest between the management and the shareholders of the firm. This, of course, presupposes that management is the same pre and post takeover. Otherwise gains could just be an effect of the superior abilities of the new management. As modern leveraged buyout activity is characterised by a very low degree of hostility, and management's effort increasingly is seen as a crucial factor for the success of a LBO, hypotheses focusing on incentive realignment should be vital in explaining the determinants of leveraged buyout activity.

Realigning interests leads to a reduction in the agency costs arising from the separation of ownership and control. Efficient means to align managerial and shareholder interests include:

- i. *Reduction of Free Cash Flow* available to management for potential negative net present value investments
- ii. *Stronger monitoring* of management through the concentrated ownership by LBO sponsors
- iii. *Increase in managerial equity stake* to enhance management's effort

Empirical studies that support the incentive realignment hypothesis include Bull (1989), Kaplan (1988b) and Muscarella and Vetsuypens (1990). Sampling firms that went private in all three studies find a significant increase in accounting profit following transactions.

4.2.1 The Free Cash Flow Hypothesis

*Free cash flow is cash in excess of that required to fund all projects that have positive net values when discounted at the relevant cost of capital*⁶⁴

Michael Jensen's *Free Cash Flow Theory of Takeovers*⁶⁵ is one of the most prominent theories in explaining the emergence of takeovers in general, and public-to-private transactions in

⁶⁴ Jensen (1986)

⁶⁵ Jensen (1986). The title *Free Cash Flow Theory of Takeovers* refers to Proceedings of a Conference sponsored by Federal Reserve Bank of Boston held in October 1987

particular. Jensen (1986 and 1989) argues that there are certain features that make a company attractive for a leveraged buyout. Accordingly, companies are more likely to be targeted for a leveraged buyout if they are characterised by high levels of undistributed free cash flows and operate in markets with limited growth opportunities. These two factors are interlinked as companies with low growth prospects often have sizeable amounts of free cash flows, due to the lack of investment opportunities. Especially in cash-rich sectors with low growth, cash flows are often wasted through unsound investment or through organisational slack. This is because managers are reluctant to pay out excess corporate incomes to shareholders. In a situation with no profitable investment opportunities, the optimal strategy under a shareholder wealth maximisation regime would be to distribute excess cash to shareholders through dividends or share buy-backs. Managers however have few incentives to do so and prefer to retain control over the cash and maximising personal utility by e.g. growing the corporation in physical size (“empire-building”) or discretionary spending on perquisites. Jensen identified this agency conflict as the main weakness of public corporations.

We have recognised three aspects of the free cash flow hypothesis that potentially play a role in determining value creation in leveraged buyouts:

- i. The *role of debt* in reducing cash flows available at management’s discretion
- ii. The *role of size and level of diversification* as an indicator of inefficiency
- iii. The empirical explanatory power of *free cash flow levels*

- The role of debt -

Leverage complements the market for corporate control in enforcing efficiency and narrowing the margin for management misbehaviour. Principal and interest payments of the loan ensure that the management has less free cash flow readily available for inefficient internal or external investments.⁶⁶ The exceptionally high levels of debt in LBOs are certainly fulfilling such an indirect monitoring function.

However, the monitoring advantages of debt, naturally, come at a cost. The most imminent costs associated with debt finance are transaction costs of raising debt, as well as the cost of

⁶⁶ Adler and Ribstein (1989)

financial distress.⁶⁷ A highly leveraged financial structure may result in the inability to absorb unexpected external shocks and makes the firm exposed to fluctuations in cash flows. The interest payments of the highly leveraged firm reduce financial flexibility since stable cash flows are needed in order to service interest payments. This reduction in financial flexibility also increases the likelihood of financial distress.⁶⁸ Further, costs may in fact arise as a result of leverage. This is due to the fact that debt- and equity-holders' contracts are characterised by different risks and returns. Debt holders earn a fixed rate of return and hence prefer projects that yield a stable cash flow to service debt payments. Consequently, debt holders want their managers to pursue relatively safe projects and will negotiate with equity holders to determine the risk level of the projects the firm will be allowed to undertake. Shareholders on the other hand prefer more risky project since they have an unlimited upside in profits, while their return is residual to payment to bondholders. Shareholders might thus be inclined in *asset substitution*⁶⁹ in an attempt to expropriate debt holders. This conflict between equity and debt holders is costly since lenders will be aware of the asset substitution problem and incorporate it into the yield they demand.⁷⁰

- Diversification and size -

If high free cash flows are wasted in unprofitable internal and external investments under low growth conditions, the agency costs of free cash flow should show up as overinvestment in capital expenditure and/or a track record in poor acquisitions. Corporations that suffer most from agency problems are hence likely to be (unsuccessfully) diversified and large in size.⁷¹ Indeed, empirical evidence shows that takeover targets are more likely to have made (a series) of poor acquisitions pre bid.⁷²

The merger wave of the 1980s was to a large extent a reaction to the conglomeratisation of the 1960s and 1970s. Diversified firms made attractive takeover targets since they often were

⁶⁷ Studies of bankruptcy costs and cost reduction in highly levered transactions include Asquith, Gerther and Scharfstein (1991) and Opler (1992)

⁶⁸ Rappaport (1990)

⁶⁹ Asset substitution arises when stockholders substitute riskier assets for the firm's existing assets

⁷⁰ Cf Jensen and Meckling (1976), Hart and Moore (1995)

⁷¹ Morck, Shleifer and Vishny (1990), Kaplan and Weisbach (1990). The argument also works in the opposite direction as diversified firms may cross-subsidise divisions by using the proceeds from strongly performing divisions to support poorly performing divisions (Jensen (1989))

⁷² Mitchell and Lehn (1990), Berger and Ofek (1996)

valued lower than non-diversified companies.⁷³ If diversification indeed destroys value⁷⁴ and conglomerates are valued lower than the sum of their parts, then an acquirer could benefit from acquiring the diversified firm, restructuring the business and establishing the different business units as stand-alone businesses. Establishing single-segment firms with clear focus on respective core competences would hence increase shareholder value solely by eliminating the unfavourable market valuation of the diversified firm. This argument is underlined by Kieschnick (1998), who finds firm size to be a significant determinant of the premiums paid in P2P transactions. Also, the many cases where assets are divested post LBO are an indicator of previous inefficiencies.⁷⁵ In addition, diversified firms with activities that are not part of core operations can be broken up more easily without destroying value. This lowers the cost of financial distress and, in turn, increases the firm's attractiveness as a buyout target.⁷⁶

When it comes to overinvestment in *internally* generated projects, the evidence is less clear. In M&A transactions in general capital expenditure levels are largely unchanged post-takeover.⁷⁷ Similarly, Serveas (1994) in his study of 700 going private transactions over the period 1972-1987 does not find any evidence that LBO targets over-invest in capital expenditure for a full four-year period prior to the buyout. However, post-takeover capital expenditure levels are significantly curbed in leveraged buyouts.⁷⁸ Whether the reduction is attributable to actual incentive realignment, or if it is a mere effect of the cash-restricting leverage inherent in LBOs is not obvious.

- Free Cash Flow Explanatory Power -

Selected studies of public-to-private transactions during the 1980s provide evidence, that the likelihood of a leveraged buyout is considerably higher if the target company has high levels of free cash flow. The findings of Lehn and Poulsen (1989) for example, support the free cash flow theory. They argue that a company's level of free cash flows is a strong indicator

⁷³ This lower valuation is known as *conglomerate* or *diversification discount* (cf Berger and Ofek (1996), Lang and Stulz (1994))

⁷⁴ As e.g. Lang and Stulz (1994) and Berger and Ofek (1996) suggest

⁷⁵ Muscarella and Vetsuypens (1990)

⁷⁶ Shleifer and Vishny (1991)

⁷⁷ Serveas (1994)

⁷⁸ Kaplan (1989), Kaplan and Stein (1993)

of how the firm's likelihood of becoming a LBO target as well as for the premia paid in LBOs.⁷⁹

It is not clear however which measure(s) is(are) the correct one(s) in assessing the determination power of the incentive realignment and/or free cash flow theory. Distinguishing the effects of the theories of free cash flow versus financial distress costs, Opler and Titman (1993) note that the same variables that famously proxy for the incentive realignment hypothesis⁸⁰ also predict the likelihood of problems of financial distress. Tobin's q , i.e. the market value of assets over the replacement cost of assets, proxies for the severity of agency problems (the FCF theorem) as well as for the cost of taking on debt⁸¹ (the financial distress cost theorem). Similarly the cash flow variable EBITDA/FV⁸² serves as a measure of gains attributable to incentive realignment as well as assessing the likelihood of financial distress. Since both hypotheses predict a positive relationship between the above variables and the probability of the firm undergoing a LBO⁸³, it is not possible to separate the influence of costs associated with financial distress on the one side, and the gains of realigning managerial with shareholder interest on the other. Realising that while, both theories suggest that the two variables are of predictive power, only the free cash flow hypothesis *interacts* the two variables.⁸⁴ Opler and Titman (1993) create a dummy variable that identifies firms with simultaneous occurrences of high (higher than median) cash flows and low (lower than medium) q as a proxy for the 'true' free cash flow hypothesis. In their study of 180 LBOs during the 1980s and early 1990s they find that, while no single variable coefficient was significant in explaining LBO occurrence, the dummy variable coefficient

⁷⁹ Lehn and Poulsen (1989) studied a sample of 263 public-to-private transactions during the 1980s and find that high undistributed free cash flows (1) increases the probability of being taken private, (2) increase the levels of premiums paid in a public-to-private transaction, and (3) increases the probability of becoming the target of a hostile takeover

⁸⁰ Such as in Lehn and Poulsen (1989) Lehn, Netter and Poulsen (1990)

⁸¹ As it serves as an indicator to which extent a firm's assets are collateralised in its growth

⁸² Where Firm Value (FV) denotes the market value of the firm's assets most conveniently measured as the market value of the firm's equity plus the book value of its debt

⁸³ High Tobin's q indicates high growth opportunities, lowering the probability of a leveraged buyout. High Tobin's q also indicates that the firm's assets are not very collateralisable in its growth, indicating higher probability of financial distress and, in turn, lower probability of a leveraged buyout. High EBITDA-to-Firm Value is a proxy for high free cash flow problem, predicting higher probability of a leveraged buyout. High EBITDA-to-Firm Value also proxies low probability of financial distress, in turn predicting higher probability of a leveraged buyout

⁸⁴ Since high q firms, as noted, are better managed they consequently are less likely to be affected by the free cash flow problem i.e. have high levels of FCF as proxied by EBITDA/FV

possessed this explanatory power. That is, firms that have a *combination* of high cash flows and unfavourable investment opportunities are more likely to be involved in a LBO.

4.2.2 Ownership Concentration Monitoring Effect

Concentrated ownership and board positions of the financial sponsor can improve monitoring and align managers' interests with those of other shareholders

Ownership concentration can have a positive effect on firm value through a reduction of conflicts of interests between managers and shareholders. Small and disparate shareholders lack the ability to coordinate their actions in order to monitor managers. Concentrated ownership has the potential to reduce potential free-rider problems since the incentive and resources to monitor managers larger form holders of large blocks of equity.⁸⁵ This form of incentive realignment is taken to an extreme in leveraged buyouts, where financial sponsor professionals exert far-reaching monitoring over management both directly, and indirectly through their right to determine the composition of the management team. This monitoring function has been named one of the most crucial capabilities of private equity.⁸⁶

The need for monitoring management can however also be partially offset with self-monitoring created by managerial equity ownership.⁸⁷

4.2.3 Managerial Equity Ownership

Leveraged buyout transactions are characterised by considerable use of top management incentives and management co-ownership

The limited timeframe and foreseeable liquidation of LBO investments create a suitable environment for the use of managerial equity holding as an incentive realignment devise. Typically, LBOs require some form of management equity buy-in to ensure that management's incentives are aligned with financial sponsor interest in shared transaction risk

⁸⁵ Denis and McConnell (2003), Morck, Shleifer and Vishny (1988)

⁸⁶ Baker and Montgomery (1994)

⁸⁷ Nikoskelainen and Wright (2005)

and reward. In connection with the buyout, management normally receives a leverage of options to purchased shares in the range 2:1 to 3:1. The grant cycle of the option program is furthermore shortened in a LBO, as it is common to front-load option grants to retain executive management post-LBO. Furthermore, about half of options to management vest rateably over a five-year period, while the other half vests only if performance targets⁸⁸ are achieved. These performance targets are an additional factor to reinforce a return-focused mentality to management. Also, management sale or transfer of shares is restricted based on time and proportion sold by the financial sponsor.⁸⁹ The following table summarises typical management compensation in leveraged buyouts in comparison with compensation in public companies:

Category	LBOs	Public Companies
Basis for Grants	Purchase with Grants	Grants with No Purchase Feature
Grant Cycle	About half granted up-front	Annual Grants
Vesting	Generally 50% performance-based and 50% time-based	Time-based
Liquidity	Limited	High

Table 2: Top Management Compensation in LBOs vs. Public Companies. Source: Watson Wyatt Worldwide

Managers' incentive pay increases substantially in connection with the leveraged buyout. In combination with the considerable improvements in operating performance observed, this leads to the conclusion that management indeed changes behaviour as response to changing incentives.⁹⁰

4.3 Tax Benefit Hypothesis

The high leverage observed in LBOs advocates that this organisational form finds ways to benefit from leverage through either (1) exceptional absorption of its benefits or (2) reduction of the costs associated with debt financing.⁹¹ Tax advantages achieved through the so-called *tax shield*⁹² created by leverage is the most widely mentioned benefit of debt per se

⁸⁸ Usually measured by EBITDA

⁸⁹ Source: Watson Wyatt Worldwide

⁹⁰ Kaplan (1989 and 1991)

⁹¹ Opler and Titman (1991)

⁹² The tax shield is the amount of money saved in taxes by taking allowable deductions from taxable income

and, in turn, a distinguishing feature of the LBO.⁹³ However, as the wealth gains from increased tax deductions on interest payments are not limited to private firms, but merely a result of the financial gearing of the LBO, tax benefits should not be a (sole) reason for firms to go private.⁹⁴ The LBO in itself can under certain circumstances however create tax advantages not readily available by an increase in leverage alone. An increase in the book value of the assets in the acquisition can enable the firm to achieve higher depreciation deductions that lower the overall tax burden.⁹⁵ Whether LBOs can achieve tax benefits more easily than other organisational forms or not, theory suggests that they are achieved while incurring less of the associated costs of excessive debt, namely costs of financial distress.⁹⁶

Undeniably, tax effects play a major role in leveraged buyout value creation. Kieschnick (1989) finds that a firm's potential to reduce taxes is a significant determinant of takeover premiums paid in leveraged buyout transactions. Kieschnick's findings largely corroborate those of Kaplan (1989), who studies US buyouts between 1980 and 1986 and finds that tax benefits account for 21% to 143% of the premiums paid in buyouts. These substantial tax gains from LBOs have lead some researchers to suggest that financial sponsors and/or target managers might be inclined to act on the prospect of tax gains alone while neglecting real, operational improvements.⁹⁷ Consequently, so the argument, LBOs are not per se value creating as the main gains come from the change in capital structure and not from operational gains. However, the real operational improvements witnessed in the aftermath of leveraged buyouts render this critique without much credibility.

4.4 Stakeholder Wealth Transfer

The most opinionated takeover opposition argues that takeovers are wealth *redistributive* rather than wealth creative. Takeovers (in particular hostile takeovers) give the shareholder the negotiating power to renege on their contracts with stakeholders, both implicitly and explicitly, ex post. Foreseeing this "breach of trust", shareholders of the target company take

⁹³ E.g. Lowenstein (1985)

⁹⁴ Kaplan (1989)

⁹⁵ Kaplan (1989)

⁹⁶ See DeAngelo & DeAngelo (1987), Jensen (1989) and Opler (1993)

⁹⁷ Lowenstein (1985). Frankfurter and Gunay (1993) find that tax subsidies are one of the "major driving forces" of leveraged buyouts

the anticipated wealth effect of the reneged contracts into consideration and demand a higher tender price from the bidder.⁹⁸ The resulting takeover premia to selling shareholders are hence (partly) reflecting a wealth distribution from other stakeholders such as creditors, employees and local communities, suppliers and customers, and tax authorities. The result therefore, so the argument of takeover opponents, is that, while takeovers may create private wealth by capturing rents, little to no *social* value is created.⁹⁹ A distinct characteristic of the LBO in this debate is that the heavy use of leverage in LBOs is a further catalyst for management bargaining power with stakeholders, as higher debt level increases the risk of financial distress.¹⁰⁰

4.4.1 Costs to Existing Creditors

Criticism: Pre-LBO bondholders lose in LBOs as higher yields reflect added risks associated with the takeover debt

Shareholders' benefit from reneging contracts with stakeholders ex post might be especially true with respect to bondholders.¹⁰¹ The additional debt burden of the LBO increases the default risk of existing debt and, in a default, the probability that priority of claims (i.e. the seniority) will have changed. This risk should be reflected in higher required yields on – and consequently lower prices of – the outstanding bonds of the target.¹⁰² Widespread downgrading by rating agencies following LBO announcements are seen as a clear indicator of this adverse effect.¹⁰³ On the other hand, bond prices should react positively to expected operating improvements and/or tax advantages of the new capital structure that enhance

⁹⁸ Shleifer and Summers (1987). A new and relatively little discussed hypothesis brought forward by Müller and Panunzi (2003) however compares the economic effect of leverage to that of dilution in that it reduces post-takeover equity value thereby lowering tender offer as shareholders will tender their shares at lower prices. By these means, the holdout or free-rider problem dispersed shareholding (In the sense of Shleifer & Vishny (1986), Grossman and Hart (1988)) can be mitigated at the benefit of new investors, allowing socially efficient takeovers to be profitable

⁹⁹ Lowenstein (1985), Shleifer and Summers (1987)

¹⁰⁰ Fox and Markus (1992)

¹⁰¹ Gaia and Masculis (1976) and Jensen and Meckling (1976) find that equity holders do have incentives to expropriate their debt holders. Myers (1977) finds this to be true for firms with profitable growth opportunities

¹⁰² Warga and Welch (1993). On a cautionary note, the European corporate bond market is far less developed than the US counterpart and corporate bonds are mainly issued by large multinationals (Andres, Betzer and Hoffmann (2003))

¹⁰³ Marais, Schipper and Smith (1989)

firm value.¹⁰⁴ M&A studies in general,¹⁰⁵ and early empirical studies on LBOs based on matrix and exchange-based data, find no significant wealth effect to bondholders following takeover announcement.¹⁰⁶ Trader-quoted based announcement effect results by Warga and Welch (1993), however indicate negative announcement effects to holders of nonconvertible bonds.¹⁰⁷ Similarly, Sharma and Kirchick find significant negative bondholder wealth effects in a longer event window study.¹⁰⁸ In the five largest buyouts in 2005 alone, the estimated loss to bondholders was about 30%, erasing \$886 million.¹⁰⁹ Whether bondholder loss in general is indicated or not, none of the studies support the redistribution theory as losses to bondholders typically account for only a small fraction of the premia to target shareholders.¹¹⁰ This might not be surprising since even in defaults bonds lose only about 40% of their value in defaults,¹¹¹ while shareholders gain a similar percentage in takeover premia¹¹² and the debt-to-equity ratios of corporations pre buyout usually is less than 50%.

In addition, an increase in leverage need not imply losses to existing creditors if outstanding bonds are governed by restrictive covenants.¹¹³ These covenants protect the bondholders from loss of seniority (priority covenants), restrict the amount of new debt the company is allowed to take on, and give the right of redemption in the case of a takeover (change-of-control clause) or a downgrade from investment grade to junk status. The degree of covenant protection and returns to bondholders in leveraged buyouts demonstrate a high positive relationship.¹¹⁴

¹⁰⁴ Cf e.g. Jensen (1986)

¹⁰⁵ Denis and McConnell (1986)

¹⁰⁶ Lehn and Paulsen (1988), Marais, Schipper, and Smith (1989)

¹⁰⁷ Warga and Welch (1993)

¹⁰⁸ Sharma and Kirchick (1996). Results indicate that bondholders experience losses four to twelve months after the LBO

¹⁰⁹ According to Private Equity Intelligence. Article available at

<http://www.preqin.com/article.aspx?articleid=65>

¹¹⁰ Warga and Welch (1993), in line with Asquith and Wizman (1990), find that average risk-adjusted losses to existing creditors account for less than 7% of the average risk-adjusted gains to shareholders

¹¹¹ Altman (1987)

¹¹² Cf section 4.1

¹¹³ A covenant is a restriction on the borrower imposed by the lender in contract clause. Change-of-control covenants are also the reason why banks in general are unconcerned with potential leveraged buyouts of their clients. Refer to e.g. Smith and Warner (1979) for an overview of bond covenants

¹¹⁴ Cook, Easterwood and Martin (1992), Asquith and Wizman (1990). However, higher debt protection by covenants increase agency costs of equity by increasing the cash cost to the bidder and by promoting managerial entrenchment (Kahan and Klausner (1993))

4.4.2 Costs to Employees and Local Communities

Criticism: LBOs increase the burden on local communities since LBOs increase the risk of financial distress and employee layoffs

Operational restructurings are often announced in the wake of LBOs. If resulting in employee layoffs, these can shift wealth to the new investors.¹¹⁵ Similarly, if bidders are able to renegotiate wages with (unionised) workers, this creates a redistribution effect.¹¹⁶ However these measures are taken in order to maximise the value of the firm and could (should) already have been taken by the incumbent management. As incumbent management does not always act in shareholders interest, e.g. since employee layoffs portray them unfavourably in media and politics, takeovers are a means of enacting shareholders' interest and promoting operational efficiency.¹¹⁷

4.4.3 Costs to Suppliers and Customers

Criticism: Suppliers and customers are forced to grant price concessions to LBOs

LBOs can also shift the bargaining power towards the target firm vis-à-vis its suppliers. Increased interest payments ensure the firm has less cash available when contracts are entered with suppliers. Furthermore, the increase in debt enables the LBO target to credibly threaten the supplier to not undertake a positive net present value investment unless the supplier agrees to cut prices. Brown, Fee and Thomas (2005) find evidence that suppliers that are dependent¹¹⁸ on a LBO target on average experience deteriorating stock market and operating performance after their client undergoes a LBO. At the same time, the target on average experiences positive abnormal stock returns and increasing operating performance

¹¹⁵ Fox & Marcus (1992). Assuming, of course, the ousted workforce was inefficient and/or that the remaining workforce works harder

¹¹⁶ Shleifer and Summers (1987) illustrate layoff and wage reduction effects in three hypothesized scenarios involving corporate raiders T. Boone Pickens, Frank Lorenzo and Carl Icahn

¹¹⁷ Jensen (1986)

¹¹⁸ Dependent implying that $\geq 10\%$ of revenues come from one customer

as a result of its ability to increase cash flow margins and lower cost of goods sold.¹¹⁹ The same bargaining power argument can be applied to customers if e.g. competition is scarce or in specialised business-to-business (B2B) transactions.¹²⁰

While most literature emphasises these asymmetric effects, the increased bargaining power of the LBO target does not necessarily need to hurt the suppliers (or customers). Bargaining power might squeeze supplier margins, however, if combined with simultaneous larger sales to the LBO target, the net effect might be zero or even positive.¹²¹ In any case, if supplier and/or customer losses do arise, these are again likely to be minimal in comparison to shareholder gains.

4.4.4 Costs to Tax Receiving Entities

Criticism: The realised tax gains of LBO targets decrease tax revenues and burden public finances

Tax savings are often cited as one main reason for value gains in a LBO. As established in the tax benefit hypothesis, there are two major sources of tax benefits observable in LBOs. (1) The capital structure of LBO target increases their tax deductible interest payments and generates substantial interest deductions that reduce taxable income. (2) The LBO can lead to an increase in the book value of the assets in the acquisition, enabling the firm to achieve higher depreciation deductions that lower the overall tax burden. This increase in tax-deductible interest payments, and the possible increase in the tax basis of the assets, gives LBO targets an overall lower tax burden than firms with a more conventional capital structure. Consequently, the lower tax burden for LBO targets should also decrease the revenues for tax authorities.

It should be noted however, that the interest deductions of the target will appear as interest income on the income statement of the lender and increase their tax burden. This means that the change in tax revenues for national tax authorities is difficult to predict and that, in

¹¹⁹ Brown, Fee and Thomas (2005). For the effects of leverage in general on bargaining power with suppliers see e.g. Perotti and Spier (1993)

¹²⁰ Kale and Shahrur (2004)

¹²¹ Dasgupta and Sengupta (1993)

equilibrium, the tax revenues will be unchanged.¹²² In addition, a plausible increase in tax basis generates a new tax liability in the form of a recapture tax to be paid on depreciation deductions and investment tax credits.¹²³

Jensen, Kaplan and Stiglin (1989) examine LBOs in the US between 1979 and 1985 and find five ways in which LBOs have actually *increased* revenues to the US Treasury department:

- i.* Incremental capital gains taxes for shareholders
- ii.* Incremental operating revenues
- iii.* Incremental interest income earned by LBO creditors
- iv.* More efficient use of capital
- v.* Additional corporate taxes on capital gains triggered by asset sales

These tax revenue increases were during the time period more than offsetting lower revenues due to the increase in tax deductible interest payments and lower revenues on foregone dividends. This suggests that although tax authorities experience a decrease in tax revenues due to the lower effective tax rate of the LBO target in the short run, other factors such as operating performance improvements and increases in tax revenues from other parties will more than compensate for this.

4.6 Other Determinants

4.6.1 Informational Asymmetry

Managers can have superior information on the true value of the firm and benefit from taking their firm private through a management led buyout¹²⁴ when their view of the true value of the firm differs from the view of outside investors. Opler and Titman (1991) find two reasons why asymmetric information can play a part in firms' going private decisions:

- i.* Information asymmetry increases the likelihood of the firm being undervalued
- ii.* Information asymmetry enables managers to act in their own interests instead of shareholders

¹²² Miller (1977)

¹²³ Kaplan (1989)

¹²⁴ Plausibly teaming up with financial sponsor

Since firms with information asymmetry between managers and shareholders are more likely to be undervalued, this enables individuals with superior information to benefit from taking the company private.¹²⁵ Managers may deliberately depress the pre-buyout share price by using different accounting and financing techniques. By doing so, managers can deliberately create a “false” information asymmetry in order to lower the share price prior to the buyout. Management can for example depress or manipulate earnings, or send general negative messages to the market to expect tough times ahead.¹²⁶ The hypothesis that incumbent management deliberately depresses the pre-buyout share price is tested by DeAngelo (1986). However, she finds no empirical evidence that there has been systematic manipulation of share prices prior to MBOs.¹²⁷

If asymmetric information enables managers to set their own agendas instead of acting in the best interest of shareholders, then the true firm value can arguably be maximised from high ownership concentration.¹²⁸ This is due to the fact that shareholders, who have more of their wealth invested in a company, can be assumed to have more incentives to keep being informed about their investment.

4.6.2 Eliminating Public Listing Costs

There are numerous costs associated with being listed on a stock exchange that give publicly listed firms a comparative disadvantage compared to private companies. These are costs of extensive and expanding financial disclosure requirements¹²⁹, comprising fees to auditors, investment bankers, lawyers, registrars and other advisors as well as printing and distribution costs of financial statements.¹³⁰ Furthermore, new and tougher corporate governance standards have made managers of public companies more vulnerable to criminal prosecution. As a result of several high profile corporate scandals in the US, including those of Enron and WorldCom, new legislation such as the Sarbanes-Oxley act of 2002 have increased the costs

¹²⁵ Opler and Titman (1991)

¹²⁶ Lowenstein (1985)

¹²⁷ DeAngelo (1986)

¹²⁸ Opler and Titman (1991)

¹²⁹ In 1999, the Securities and Exchange Commission extended the disclosure requirements for firms listed on US stock exchanges

¹³⁰ Renneboog and Simons (2005)

of being a public company. The Sarbanes-Oxley act and other measures to increase investor protection and strengthen corporate governance have increased the benefits of private ownership and given especially smaller firms an incentive to de-list and go private.

- *The Sarbanes-Oxley Act* -

The Sarbanes-Oxley Act of 2002 was a response to a number of high profile scandals in the US and was aimed to introduce better corporate governance standards and to strengthen investor protection. The law increased disclosure requirements of public companies and stiffened the potential penalties for managers in the case of malfeasance.¹³¹ Thereby it laid new costs on public companies, substantially curbing the benefits of being publicly listed. Ellen, Hayes and Wang (2004) examine firms' going-private decisions before and after the legislation was put in place and find empirical evidence that the act has affected firms incentives to go private. In particular they find that the rate of going-private transactions has increased post Sarbanes-Oxley. The results also show that the compliance costs are more troublesome for small firms compared to mid-size and large firms, and that small firms and firms with large managerial ownership have become more likely to de-list and go private. These findings are mainly corroborated by Renneboog and Simons (2005), who find that the costs of being publicly listed have increased substantially post Sarbanes-Oxley.

- *Costs of the Public Eye* -

If market participants – institutional investors in particular – are (believed to be) short-sighted and share prices undervalue corporations with a long term focus, this should discourage firm specific investments in human capital and long-term investments such as R&D, potentially locking up or destroying the firm's long term performance and competitiveness. Stein (1988) highlights such *managerial myopia* to be a direct response to takeover threat. Even a management team that actually acts in shareholders' interest might find it optimal to engage in inefficient myopic behaviour such as the *costly signalling*¹³² of selling of assets, if this is seen as the only way to credibly convey the firm's actual value. If these arguments about the capital market and the market for corporate control hold true, the private space should indeed be favourable as it allows management to focus on long term

¹³¹ Ellen, Hayes and Wang (2004)

¹³² As originally described by Spence (1973)

performance and build the firm without the scrutiny of the capital market and quarterly earnings focus.

Critics however argue that it is inconsistent with the theorem of efficient capital markets to assume that investors are short-sighted. Indeed, no evidence was found that increased institutional holdings were associated with either increased takeovers of firms or a decrease in R&D. Nor were firms with higher R&D expenditures more likely to be taken over. In fact, the stock market responded positively to announcements of increases in R&D.¹³³ Stock market prices have also been found to respond positively to increases in capital expenditure.¹³⁴

Further critique states that it is in fact private equity that is short-sighted and potentially long-term value destroying as the short time-horizon and the heavy debt burden of the LBO investment make financial sponsors focus exclusively on short-term cash flows rather than long-term profitability. The divestment of sub-units (perceived as “asset-stripping”) furthermore projects a myopic image of the leveraged buyout. Prominent critics include the leader of the German Social Democratic Party, and now vice-chancellor in the Merkel administration Franz Müntefering, who in 2005 described private equity funds as “swarms of locusts”, who “graze” on German businesses only to resell them for a profit.¹³⁵

Empirics on this matter are rare as private equity data usually is highly confidential and kept undisclosed to the public. The few studies available on long term performance of the target of the leveraged buyout however suggest that value is indeed created in LBOs.¹³⁶ Why then would this not imply the “*eclipse of the public corporation*”?¹³⁷ Kaplan (1991) assesses this apparent paradox and finds that the median LBO target returns to the public markets after 6.7 years. It is suggested that the high aggregated abnormal returns observed in private equity investments in fact are a result of a compensation requirements of a long term illiquid

¹³³ SEC’s office of the Chief Economist (OCE) (1985) in a study of 324 high-R&D firms and of all 177 takeover targets in the period between 1981 and 1984, Similar results are found in Hall (1987)

¹³⁴ McConnell and Muscarella (1985)

¹³⁵ Financial Times Deutschland, (Apr. 24th 2005). The statement also concerned the hedge fund investment asset class

¹³⁶ E.g. Ljungqvist and Richardson (2003)

¹³⁷ Jensen (1989)

investment.¹³⁸ The main reason for the re-entry of P2P target into the public domain is the need of the financial sponsor to recoup her investment. One of the four main established exit routes, and arguably the most profitable for a private equity investor, is to re-list the target company on a stock exchange. However, it is also possible that the target returns to the public market at a later stage, after for example a secondary buyout.

4.6.3 Takeover Defence

When faced with a takeover threat, target management concerned with keeping their job and associated perquisites might engage in actions that make the firm less attractive to takeovers. Explicit anti-takeover measures, so-called poison pills¹³⁹, include targeted block stock repurchases (Greenmail), issuance of preferred stock, and managerial resistance.¹⁴⁰ However, empirically it is suggested that managerial opposition to takeovers destroys shareholders wealth only if it completely eliminates takeover bids. This is due to the fact that anti-takeover measures, such as privately negotiated or targeted repurchases, create positive abnormal returns to the seller since these repurchases take place at a premium over the market price.¹⁴¹

A takeover via a LBO led by a friendly private equity fund can be an alternative for firms that have small management shareholding that face the prospect of a hostile takeover.¹⁴² Managers are concerned about losing their jobs in a hostile takeover and are willing to let a “white knight”¹⁴³ acquire the company to increase the likelihood of the management staying in place.¹⁴⁴ However, in these events the management will typically play a minor role as outside investors will be critical to the funding of the transaction. Halpern, Kieschnick and Rotenberg (1999) examine a sample of firms that became LBO targets between 1981 and 1985 and cluster them into two groups, one group with low prior managerial shareholding and one with high. The LBOs that occurred in the second group were predominantly

¹³⁸ Ljungqvist and Richardson (2003)

¹³⁹ Poison pills are any tactic by a company designed to avoid a hostile takeover

¹⁴⁰ Jerell, Brickley, and Netter (1988). Takeover defences can also be less visible entrenchment tactics such as the design of complex cross ownership structures or investment in business areas of the incumbent manager’s expertise such that competitive advantage makes a replacement less likely. (cf Shleifer and Vishny (1988))

¹⁴¹ Jensen (1984)

¹⁴² Halpern, Kieschnick & Rotenberg (1999)

¹⁴³ “A friendly potential acquirer sought out by a target company threatened by a less welcome suitor.” Brealey and Myers (2003)

¹⁴⁴ Franks and Mayer (1996) find that 90% of the target firm’s directors resign following a successful hostile takeover

voluntary management led buyouts, while the LBOs in the first group were usually led by a third party Private Equity fund in the context of a takeover battle. The firms that were “saved” by a white knight often returned to the public market within a few years, whereas firms with high pre-LBO managerial shareholding tended to remain private. These findings are largely confirmed by Lowenstein (1985), who finds that the management in some firms that face the threat of a hostile takeover are willing to buy out other shareholders in order to stay in control of the firm.¹⁴⁵

Generally, if a LBO is conducted as a result of a hostile takeover threat, the wealth gains from the transaction will come from the premium the management is prepared to pay to other shareholders in order to stay in control of the firm.¹⁴⁶

4.6.4 Transaction Cost Criticism

Criticism: Advisors act in their own interests and promote the wrong kind of takeovers

There is also an immediate one-time (sunk) cost of going private, namely the fees paid to investment bankers, lawyers, and other advisors to the target and bidding companies. A critique often voiced is that many buyouts are driven by such third party advisors, who act in their own rather than in their clients’ interest, in order to achieve a situation that generates the highest possible fees. However, one must consider that due to the scale and economic importance of large transactions there are substantial costs for structuring and executing any merger or acquisition. Especially LBOs are costly since they normally involve substantial structural and operational change to the company being acquired. Furthermore, advisors do have incentives to act in the interest of their clients and ensure that transactions they are advising turn out to be profitable, in order to build a credible reputation for future advisory roles. Moreover Jensen (1984) argues that the costs of fees to investment bankers, lawyers, and other advisors are small in comparison to total market value gains of the acquisition. Shleifer and Vishny (1988) find that “...these costs presumably reflect in large part the superior ability of participating lawyers or bankers to capture rents.” Hence, while fees amount to vast sums, it is not clear whether the firm would be better off without advising parties.

¹⁴⁵ Lowenstein (1985)

¹⁴⁶ Renneboog and Simons (2005)

4.7 Differentiating Features of Modern Leveraged Buyout Activity

Many (mis)conceptions about financial sponsors developed in the wake of the 1980s takeover boom that might not hold true in modern LBO activity. While private equity firms in general are viewed as only *financial engineers*, more recent private equity activity demonstrates a transition somewhat towards a more strategic approach. In part, this is surely due to increased executive competence and finance savvy, as well as stricter corporate governance standards. Further reason for the strength, if not emergence, of the new wave of buyout activity is to be found in the low interests and high liquidity in the fixed income market. At a time of peaking private equity fund raising financial sponsors are eager to invest at an unprecedented low cost of capital. However, there is a scarcity in lucrative investments and sizable LBO opportunities are few and far between. With private equity houses accumulating an abundance of capital to invest, this is bound to reduce returns.

In the following we have accumulated matters commonly advocated in the modern buyout debate but not to our knowledge to be found in theoretical or empirical research.

4.7.1 Financial Buyers as Strategic Buyers?

Private equity investment strategies have changed considerably over time. The late 1980s model of LBO investing was characterised by strategies such as acquiring undervalued targets using minimal equity contributions and high leverage, implementing drastic cost savings and disposals of *hidden* non-core assets.¹⁴⁷ Such opportunities are now rare and successful private equity companies increasingly focus on creating value through strategic partnerships. The buyout environment has changed considerably with respect to cooperation with management, and hostility is rarely if at all observed in today's leveraged buyout market.

Modern leveraged buyout priorities seem to lie in:

- i.* Developing true *industry expertise*
- ii.* Focusing on companies poised for *organic revenue and profit growth*
- iii.* Use initial investment as platform for additional *consolidating acquisitions*¹⁴⁸
- iv.* *Incentivise LBO management* and employees to drive growth and cash flow

¹⁴⁷ Holmström and Kaplan (2001)

¹⁴⁸ A so-called "buy-and-build" strategy opening up for synergy gains

- v. Find opportunities to *partner with corporates* both for bidding and investing opportunities
- vi. Rigorous tracking of financial/operating performance metrics in *due diligence*

Board and management cooperation is a key factor in the modern leveraged buyout market since the target must “open the books”¹⁴⁹ in order for the private equity firm to be able to perform proper due diligence. As reputational issues seem to matter a great deal to private equity, the likelihood of seeing a tender offer not recommended by the target’s board of directors in a leveraged buyout is furthermore small.

4.7.2 Economic Conditions and Liquidity Sloshing

In recent years, investors demand for high-yield debt, both bonds and bank debt, has been steadily rising, leading to a boost in the cash available to fund acquisitions.¹⁵⁰ This demand has partly been fuelled by the availability of subordinated debt, which unlike regular bank debt is not amortised over a fixed time period, but rather paid off in a lump sum at maturity. This feature can reduce risk since it gives the company more flexibility. It also reduces the risk that the firm will default on debt payments.

Further, a new secondary market for bank loans has evolved. Banks are now able to trade bank debt like regular bonds; hence banks are not forced to keep unwanted debt on the books. This has increased banks eagerness to lend, leading to an excess of cheap financing.¹⁵¹ The combination of these features with the prevailing low real interest rates has resulted in debt often being a cheaper form of financing than equity.¹⁵² These developments are of course favourable for buyout activity and other kinds of de-equitisation such as large dividend payments or share buybacks. However, these current cheap sources of debt financing might very well be a temporary phenomenon, as yields will rise with rising interest rates, possibly curbing some of the existing advantages of debt. According to Steven Kaplan,¹⁵³ the current amount of liquidity in debt markets will not be sustainable in the long run.

¹⁴⁹ Implying that the bidder is granted access to confidential information as part of the due diligence process

¹⁵⁰ Reuters News (April 27th 2006)

¹⁵¹ The Economist (April 20th 2006)

¹⁵² Financial Times (April 18th 2006)

¹⁵³ In an interview with The Economist (April 20th 2006)

4.7.3 Private Equity Capital Abundance

Opportunities for lucrative, successful and sizable LBOs are few and far between. Incumbent management teams have become more finance savvy, exploit the benefits of interest tax shields by adjusting their capital structure to find the optimal leverage, and are even keen to proactively divest divisions or subsidiaries that are characterised by low synergies with core operations. The European market might still lag its US counterpart in financial efficiency, but the gap is narrowing. Hence, the need for financial sponsors to play the role of financial engineers is decreasing rapidly. At the same time, private equity is at present raising unprecedented capital funds, interest rates are at a historical low and liquidity in bond markets is high. The abundance in private equity capital and the perceived arbitrarily favourable leveraged loan and bond markets have led to a craze about sizable investment opportunities to produce the promised high returns to equity.

If no LBO opportunity arises financial sponsors may be forced to invest capital in other often less attractive ways. The Blackstone Group for example recently invested around €2.7bn to get a passive 4.5% stake in Deutsche Telekom.¹⁵⁴ The combination of private equity capital abundance and scarcity in sizable and lucrative investment opportunities is bound to reduce returns. Also, when an attractive sizable investment opportunity arises, there is an increased probability of private equity overpaying at the chance of investing a significant portion of capital funding. In fact, internal rate of returns (IRRs) in private equity investments are empirically proven to have declined from an estimated 25-35% in the 1980s to as low as 18-20% in the 21st century.¹⁵⁵ Furthermore, while low interest rates, buoyant equity markets and improving corporate balance sheets have led to a number of successful European exits in recent history, private equity has yet to prove sustainable returns under less favourable exit opportunities. The rise in secondary buyouts' contribution to total exit value also indicates a lack of new transaction opportunities out of trade players.¹⁵⁶

¹⁵⁴ Financial Times (April 25th 2006)

¹⁵⁵ Private Equity Analyst (2005)

¹⁵⁶ In 2005 secondary buyouts accounted for 46% of financial sponsor exits; trade sales accounted for only 28%.
Source: Mergermarket

5 CASE STUDY – TDC A/S

5.1 Case Outline

On November 30th 2005 The Nordic Telephone Company (NTC), a private equity consortium consisting of Apax Partners, The Blackstone Group, Kohlberg Kravis Roberts, Permira Advisers and Providence Equity Partners, announced a bid to acquire the Danish telecom incumbent TDC A/S. TDC's Board of Directors recommended that shareholders accept the tender offer of DKK382 per share. The bid valued the company at DKK 96.3bn or \$15.3bn, making the deal the second largest LBO in history – second only to the 1989 buyout of RJR Nabisco by Kohlberg Kravis Roberts – and the largest European LBO to date.

The case study on the leveraged buyout of TDC highlights the topicality of LBOs in the modern market for corporate control. In assessing the determinants of buyout activity we have found that it is important to focus on value creation and sources of (plausible) gains. Rather than imposing a rigid theory-by-theory consideration to the case, the explanatory powers of buyout theory is assessed against the background of the understanding of leveraged buyout activity gained in the previous sections. In this respect, the case study is performed by means of:

- i.* Presenting measurable *stakeholder wealth effects* in connection with takeover speculation and subsequent tender offer
- ii.* Analysing NTC's plausible *investment case* as singled out by careful examination of public announcements and company financial information

The case study will proceed as follows. Section 5.2 gives a brief history of TDC and presents its current profile. Wealth effects of takeover speculation and subsequent bid for TDC's pre-bid stakeholders are assessed in section 5.3. Share prices and bond spreads are analysed with respect to key events in the takeover process. Wealth effects to TDC's board of directors and executive committee are analysed with respect to their gains on shares and options in connection with the tender offer and with respect to a plausible future incentive contract. As

the future of the executive committee is somewhat uncertain, service contract clauses detailing severance pay and plausible bonuses are presented. Similar uncertainty regards other stakeholders, and in particular employees. Due to the speculative nature of such other stakeholder effects, only minor consideration is given to this matter. Section 5.4 analyses the most plausible reasons for why TDC presented an attractive investment case for NTC. In determining the investment case, we have made use of public information such as financial statements, press releases and news articles, as well as the intuitive understanding of the determinants of buyout activity gained in section 2 to 4. Last, the explanatory power of corporate finance and buyout theories for TDC as a representative case of modern buyout activity is assessed in section 5.5. Section 5.6 gives concluding remarks on the case.

5.2 Company Profile

- Historical Overview -

The company was founded in 1881 as a telephone exchange fully owned by the US company Bell. The following year the company was acquired by two Danes and was named Kjøbenhavns Telefon-Aktieselskab. The business grew rapidly with the dispersion of the telephone and had 25,000 subscribers in 1900. During the first half of the twentieth century several other (regional) telecommunication companies were founded in Denmark. In 1990 the Danish parliament passed a new legislation that led to the formation of a national telecommunication company under the name Tele Danmark. Tele Danmark was a holding company for four regional Danish telephone service providers and held the exclusive rights to provide fixed line telephone services in Denmark. In 1994 the first step to privatisation was taken as the government decided to list Tele Danmark on the Copenhagen stock exchange, raising DKK 18.5bn (\$2.9bn). By 1997 the Danish government had sold all its shares in the company, and the biggest shareholder became the US telecommunications corporation Ameritech. In 2000 Tele Danmark changed its name to TDC. By the year 2004 the largest shareholder SBC (formally Ameritech) sold its holdings in TDC, leaving TDC without a controlling shareholder.¹⁵⁷

¹⁵⁷ Source: TDC Company Information

- *TDC Today* -

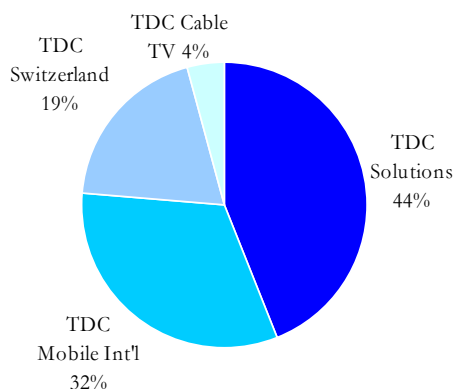
TDC is the incumbent and leading telecom operator in Denmark and the second-largest telecom provider in Switzerland. In addition to its above core operations, TDC fully owns Lithuanian mobile phone operator Bite, has a majority stake in the Hungarian fixed line and broadband business HTCC and significant non-consolidated minority investments in Poland¹⁵⁸ and Austria.

Core Operations

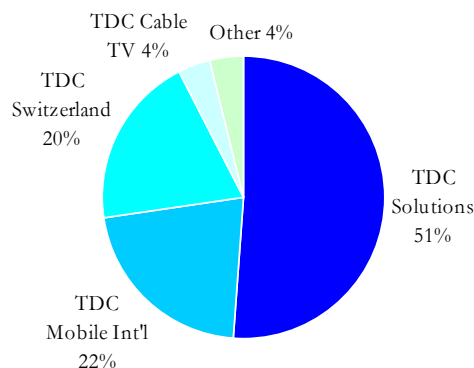
The group carries out its activities in four divisions:¹⁵⁹

- i. TDC Solutions* is a provider of landline telephony and offers data and Internet connections; the division is the group's largest service area
- ii. TDC Mobile International* offers products for mobile telephony, data communications and value added services
- iii. TDC Switzerland* provides mobile, landline and Internet services for the Swiss market
- iv. TDC Cable TV* supplies TV and radio signals and also provides broadband Internet access

TDC Revenue¹ Contribution 2005



TDC EBITDA Contribution 2005



¹Revenue excludes 'Other' activities (TDC Services, TDC A/S and Intra-group eliminations) because of negative contribution

Graph 8: TDC Revenue and EBITDA contribution 2005. Source: Annual Report

¹⁵⁸ Disposal announced February 02, 2006

¹⁵⁹ Source: Worldscope, Annual Report

5.3 Stakeholder Wealth Effects

5.3.1 Shareholder Wealth Effect

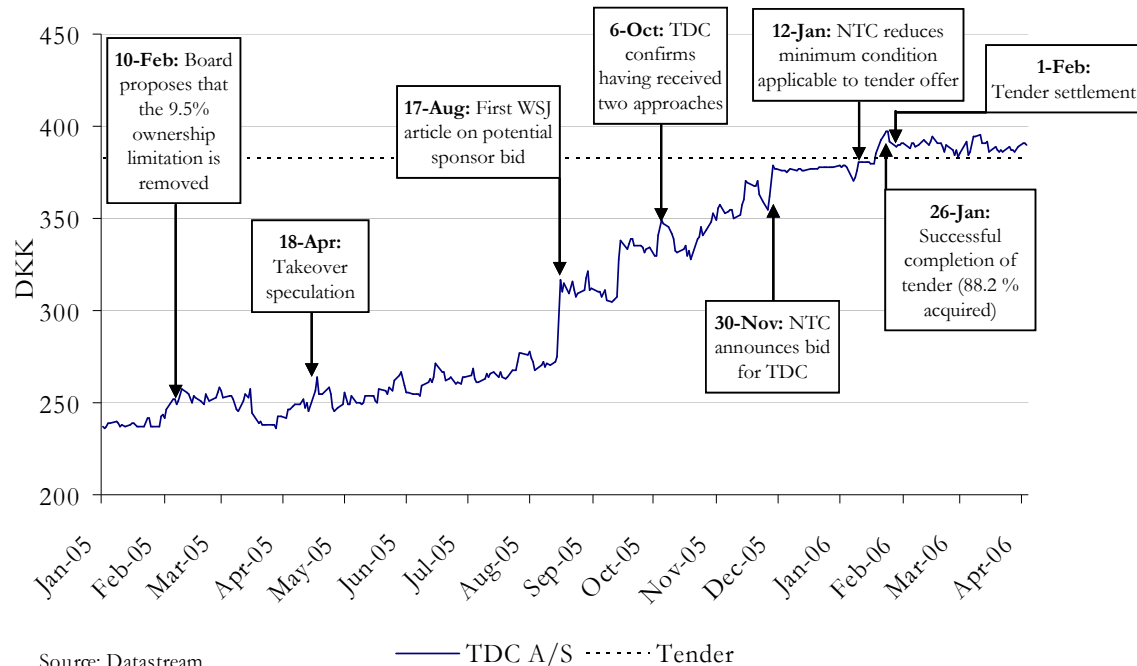
The recommended tender offer represents a significant premium for TDC's shareholders

The most illustrative (announcement) wealth effect of the leveraged buyout of TDC arguably lies in the premium that the tender offer implied to target shareholders. In the following implied premia of the DKK 382 per share tender offer and share price development with respect to key events in the pre-bid and tender offer period are highlighted.

Date	Share price (DKK)	Implied premium
Closing November 29	362	5.5%
August 16 (pre WSJ article)	274.2	39.3%
3 month	264.1	44.6%
6 month	255.4	49.6%

Source: Datastream

Table 4: Implied Share price Premia of DKK382 Tender Offer



Graph 9: TDC share price

- Speculation and Announcement Wealth Effects -

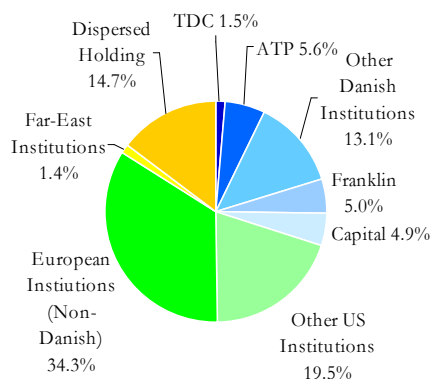
The share price of TDC improved substantially as a result of takeover speculations in the months prior to the tender offer by NTC. Takeover speculations started after TDC decided

to remove ownership restrictions that limited investments in the firm to 9.5%. This poison pill was established when the Danish government sold its 42% stake in 1997 and was designed to protect the firm from a takeover. On August 17th 2005 TDC's share price rose by 15% after the *Wall Street Journal Europe* reported that two competing private equity consortia were preparing to make bids for TDC.¹⁶⁰ The share price continued to rally prior to the bid on Nov 30th as takeover speculations continued. When NTC finally announced its bid for TDC, the tender offer implied a 5.5% premium over the closing price the day before and a 39.3% premium over the share price of August 16th 2005.

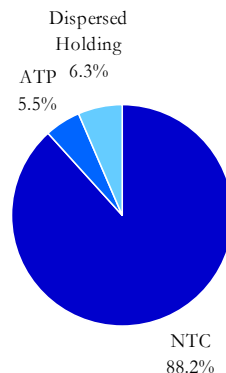
- *Beneficiaries* -

Before NTC's tender offer announcement TDC had approximately 84,000 shareholders holding 198.4 million shares in TDC. Out of the total shareholder base about 82,000 were private investors holding approximately 15% of the shares. Larger shareholdings represent proprietary holdings, the Danish Labour Market Supplementary Pension Fund (ATP) and the two US institutional investors Franklin and Capital. TDC's pre-bid shareholder structure shows the distribution of beneficiaries among geographies and investment asset classes.

TDC Pre-Bid Shareholder Distribution



TDC Post-Tender Shareholder Distribution



Graph 10: Shareholding in TDC A/S pre bid and after expiration of the tender offer period.. Source: TDC Company Information

¹⁶⁰ The other consortium consisted of the private equity limited partnerships Cinven Group, BC Partners, Apollo Management and Silver Lake Partners

- The Tender Offer -

The original tender offer period lasted from December 2nd 2005 to January 12th 2006, and was made conditional upon a 90% acceptance level. After the announcement of ATP's non-participation in the tender offer on January 8th 2006 however, the acceptance level was lowered to 85% in expectation of not reaching the required minimum acceptance level of 90% and the tender offer period extended to January 20th 2006. On expiration of the tender offer period NTC had gained a shareholding of 88.2%. ATP still owns 5.51% of the shares in TDC. The remainder of shares are held by private investors and TDC Employees.

At the day of writing, TDC is still a listed company.¹⁶¹ The Danish Commerce and Companies Agency (DCCA) had on March 8th 2006 decided to reject some of the amendments to the Articles of Association adopted at TDC's extraordinary general meeting.¹⁶² The DCCA's found that in holding less than 90% of the shares in TDC, NTC had not acquired the majority necessary to follow through with the initiated redemption of shares held by other shareholders in accordance with the Articles of Association.¹⁶³ In other words, NTC could not pursue a *minority squeeze-out* and had to suspend the compulsory acquisition process.

In the eyes of the financial sponsors this has left TDC "midstream, having started implementing the new ownership structure – without leaving the old structure"¹⁶⁴, emphasising the importance of a delisting for TDC's efficiency. Therefore NTC in its majority owner role decided to appeal to the decision to the Danish Company Appeals Board. On April 5th 2006 NTC furthermore decided to seek judicial review and take the matter to court. A solution is expected within short.

5.3.2 Managerial Wealth Effect

During their commitment with the firm, management and board of directors have certain restrictions on their holding of shares and options. A change of control however triggers

¹⁶¹ Except delisting from the NYSE by withdrawal of TDC's American Depositary Shares (ADS) effective April 19th 2006

¹⁶² Held on February 28th 2006

¹⁶³ NTC had commenced the redemption on March 5th 2006 as more than 90% of the *votes* at the EGM were in favour of adopting the new Articles of Associations. ATP had protested against the redemption

¹⁶⁴ Chairman of the Board and NTC's representative Kurt Björklund in his position as Partner at Permira

certain clauses in contracts that open up for the sale of shares and share options. Furthermore, the executive committee is protected of termination of employment in connection with a change of control by large benefits in the form of severance pay and bonuses – commonly denoted *golden parachutes*. While such protection is an important feature in any managerial contract, the focus of the LBO value creation for management certainly lies in the *equity stake* it receives in connection with the buyout.

- *Golden Parachutes* -

The Executive Committee, consisting of President and Chief Executive Officer Henning Dyremose and Chief Financial Officer Hans Munk Nielsen had at the time of acquisition service contracts in place that grant the right to receive a remuneration corresponding to three times the annual compensation in case of given notice of termination within a two year period after a change-of-control. At present conditions this would amount to a cost of €7.6 million. The Executive Committee has furthermore the right to put this provision into action three to six months after change of ownership. The Executive Committee may also receive discretionary bonuses, but has not otherwise been granted transaction bonuses, stay-on bonuses or similar.¹⁶⁵ At present, neither TDC's chief executive officer nor its chief financial officer has been ousted or has resigned and the statements of NTC do not indicate any such move. On the contrary, management cooperation is emphasised as key for the success of the buyout. However, the extraordinary general meeting of February 28, 2006 elected a new board of directors. A representative of each of the private equity firms constituting the consortium was elected as member of the board.

¹⁶⁵ Public Tender Offer available at http://tdc.com/about/investor/releases/index.php?pr_id=635

- Option Programmes -

In case of a change of control, TDC's incumbent management and board of directors is entitled to exercising existing options and selling shares. Both board and management have made use of this form of "cashing in" to some extent, accumulating a combined wealth effect of DKK 167.6 million.¹⁶⁶

Seller	Role	Type of Security	Gain (DKK)
Torleif Krarup	Chairman of the Board	Stock Options and Shares	623,420
Niels Heering	Vice Chairman of the Board	Stock Options and Shares	540,691
Bo Magnussen	Member of Board of Directors	Stock Options and Shares	216,755
Steen M. Jacobsen	Member of Board of Directors	Stock Options and Shares	274,055
Leif Hartmann	Member of Board of Directors	Stock Options and Shares	350,455
Board of Directors			2,005,376
Henning Dyremose	President and Chief Executive Officer	Stock Options and Shares	36,242,413
Hans Munk Nielsen	Chief Financial Officer	Stock Options and Shares	12,063,969
Executive Committee			48,306,382
Other Management or Related		Stock Options and Shares	117,253,248
Total			167,565,006

Table 5: Summary of leading employees' stock option and share transaction in connection with NTC's public tender offer

- Managerial Equity Stake -

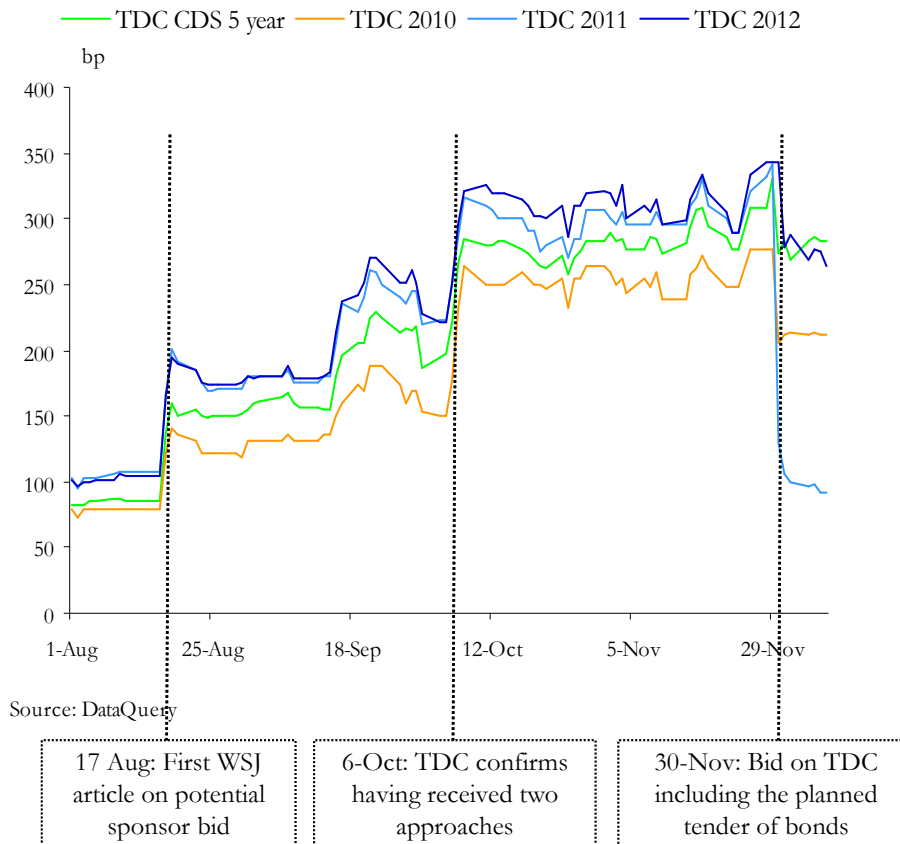
Management compensation agreements in connection with the TDC buyout are undisclosed. It is however reasonable to assume and can be inferred from statements that management received a significant share in equity in the form of a share options. This should make for a significant incentive for management to act in shareholders' interest and facilitate operational improvements.

¹⁶⁶ Before transaction costs and taxes. Calculated on the basis of the official price of DKK396.03 per share as outlined in TDC's filing in accordance with §28a of the Danish Securities Trading Act

5.3.3 Creditor Wealth Effect

Bonds were trading below par and spreads reacted sharply to LBO rumours and subsequent tender offer for outstanding bonds at par

TDC secondary spreads performance (bp)



Graph 12: TDC bond spread

Outstanding TDC bonds did not entail covenants protecting the creditor from change of control. Yields on TDC bonds consequently soared as a result of takeover speculations and bonds traded below par reflecting a perceived “event risk” of a leveraged buyout with plausible bondholder expropriation. At announcement of the bid on TDC however, NTC revealed its intention to make tender offer for the firm’s outstanding bonds, leading to a tightening of spreads. As there was no obligation to buy out existing bonds, the move is

likely to have been influenced mainly by the debt providers' concern with reputation.¹⁶⁷ The net wealth effect of takeover speculation and tender offer for TDC's existing bondholders depends on the time period studied and on which bond is looked at. In the period upon completion of the offer it is however estimated that bondholders were losing 13%, arising some critique in the market.¹⁶⁸ The price for TDC's outstanding 6.5% bond due in April 2012 e.g. fell 14.62% in the period from August 16 (one day before WSJ article) up to the day before announcement of the bid, with yields climbing almost 3%.

Upon completion of the tender offer, the credit rating agencies Standard & Poor's, Fitch Rating and Moody's downgraded TDC's credit rating to sub-investment grade reflecting the new leveraged capital structure.

5.3.4 Other Stakeholder Wealth Effect

Other stakeholders in TDC experienced no direct announcement wealth effect. Employees in particular might however perceive a (justified) threat. TDC had at takeover already a domestic lay-off program in place which is continued under the new ownership. Furthermore, the efficiency improvement need for TDC Switzerland might force management to cut jobs. Finally, the unclear future of TDC's non-core operations might challenge the present situation of employees as well as other stakeholders.

5.4 NTC's Investment Case

In careful analysis of the determinants of buyouts activity in the case of TDC we have singled out factors that are thought to have influenced NTC's investment decision. We found that NTC's investment case is likely to be consisting of a combination of TDC's current strong market position and financial performance, its improvement potential in operating performance and capital structure as well as its attractive cash flow characteristics.

¹⁶⁷ The buyout of Danish ISS by EQT had earlier in the year sparked much bondholder critique and media attention due to the controversial decision to leave existing bonds in place. Investors, whose 2014 bonds fell 22.5% on announcement (one day effect) even threatened to bring the matter to court. For speculations on debt market considerations refer to Mergermarket article available at http://www.mergermarket.com/public/default.asp?pagename=editorial_detail&docid=731

¹⁶⁸ According to Private Equity Intelligence. Article available at <http://www.preqin.com/article.aspx?articleid=65>

Also likely to be attributing to the attractiveness of TDC is the availability of multiple non-core disposals.

5.4.1 Operating Improvement Potential

TDC EBITDA margins lag its European and Nordic peers by on average 10-12% over a three year period.¹⁶⁹ EBITDA-minus-Capital expenditures (Capex) margins¹⁷⁰ are also low compared to benchmarks, indicating that there is significant improvement potential. Furthermore, the group has shown strong financial performance in recent years. Despite high levels of competitive intensity in Denmark in both fixed and mobile telephony, TDC has grown faster than its European peers in the last years organic growth in group adjusted EBITDA¹⁷¹ of 6.7% in 2004 and 3.4% growth in 2005. The peer group median for respective years was 3.6% and 0.6%.

5.4.2 Cash Flow Characteristics

TDC has been characterised by relatively stable cash flows under a long period of time. Furthermore TDC, especially in its core Nordic and Swiss markets, carries out many of its operations in relatively mature or saturated markets where unexpected demand fluctuations are unlikely. This makes TDC an attractive LBO target since stable cash flows are essential in highly leveraged companies in order to service interest payments and reduce costs of financial distress.¹⁷²

5.4.3 Market Position

TDC has strong market positions in its core Nordic and Swiss markets. The company is the leading telecommunications firm in Denmark with significant market shares across the different business areas.¹⁷³ Sunrise, the Group's mobile phone provider in Switzerland, is the second largest operator in Switzerland. In Sweden, Finland and Norway, the TDC Song brand (broadband) has a well established brand name. TDC is well positioned to capture the growing per capita expenditure on communications. Its technological diversification makes

¹⁶⁹ See Appendix Table 1

¹⁷⁰ A proxy for Free Cash Flow margins

¹⁷¹ Adjusted for non-recurring items

¹⁷² Opler and Titman (1991)

¹⁷³ TDC annual report 2005

for inherent cash flow stability as unlike most other incumbent telecom operators it is and is naturally hedged against technology and platform migration.¹⁷⁴

5.4.4 Non-core Disposals Available

TDC has operations in several countries that have limited synergies with its core businesses, such as significant non-consolidated minority investments in Poland and Austria.¹⁷⁵ The newly appointed Chairman of the Board Kurt Björklund¹⁷⁶ in a speech at the annual general meeting in April 2006 identified the Nordic region along with Switzerland as TDC's core geographic regions. He furthermore made clear that holdings outside the Nordic and Swiss markets are to be considered mere financial investments that are held to "optimize the value in the medium term".

The cash raised from divestitures of non-core businesses can then be used in order to pay off acquisition debt.¹⁷⁷ One step has already been taken in this direction with the sale of the minority stake in the Polish mobile phone operator Polkomtel. Other subsidiaries that lie outside the core geographic regions or product segments that eventually could be divested include the Baltic mobile phone operator Bite, Hungarian fixed-line telephony and broadband provider HTCC, as well as minority holdings in Austrian mobile phone operator One.

5.4.5 Opportunity to Optimise Capital Structure

The buyout and the following change in capital structure from a conservative capital structure to a highly leveraged one can lead to significant wealth gains. As established in section 4.3, LBO targets can increase firm value by lowering their tax burden through altering capital structure resulting in higher tax deductible interest payments.¹⁷⁸ The increase in leverage and resulting interest payments will increase the debt shield of the firm. Although

¹⁷⁴ Such as fixed-to-mobile substitution. Kurt Björklund at AGM

¹⁷⁵ TDC announced the sell-off of its 19.6% stake in Polkomtel on February 02, 2006

¹⁷⁶ Mr. Björklund is a Partner at Permira Advisors and represents the new majority owner NTC on the Board of TDC

¹⁷⁷ So-called de-leveraging. This may especially be needed in order to repay short-term so called bridge loans taken on to finance the buyout

¹⁷⁸ Lehn and Poulsen (1989)

no definite number can be put on it, this is also a likely contributor to the determinants of the TDC LBO.

5.5 Theoretical Framework Explanatory Power

TDC's buyout is an illustrative case of wealth creation, destruction and redistribution. The wealth effects of leveraged buyout activity in the case of TDC differ considerably among the corporation's stakeholders. While the tender offer represented a significant premium to shareholders, the wealth effect to creditors was negative. This is in line with the *stakeholder wealth transfer hypothesis* that highlights that the wealth creation to shareholders comes at the cost of other stakeholders, notably creditors. However, the (announcement) wealth effect in the LBO of TDC cannot be described as purely *redistributive*, as losses to bondholders amount to only a small fraction of the premium paid to shareholders. The same is likely to hold true for plausible expropriation of other stakeholders, such as employees, in the long run.

We have furthermore found that the *incentive realignment hypothesis* is a likely determinant of the leveraged buyout of TDC. The three presented hypotheses that are rooted in the incentive realignment hypothesis – *The Free Cash Flow Hypothesis*, *Ownership Concentration Monitoring Effect* and *Managerial Equity Ownership* – each play a part in explaining expected value creation in TDC.

- i. The Free Cash Flow Hypothesis* predicts a LBO target to have high levels of free cash flow while having low growth opportunities. Furthermore, a company suffering from free cash problems is likely to be diversified and large in size with a potential history of poor pre-acquisition bids. This is a case to some extent descriptive of TDC. TDC's core operations are in mature and/or saturated markets with stable free cash flow levels. TDC has also reasonably low and falling capital requirements. The company's operations are diversified, especially with respect to geography, and many of its non consolidated assets do not have synergies with TDC's core operations. The divestment of the unconsolidated stake in Polkomtel shortly after the change of control as well as the statement made by Mr Björklund that operations outside the Nordic and Swiss markets are

to be considered financial holdings further underline the importance of availability of disposals for NTC's investment case. If diversifying acquisitions of TDC prior to the takeover are contributing to the relatively low valuation compared to its peers prior to the start of takeover speculation¹⁷⁹ the LBO can be seen as a means to rectify inefficient target behaviour.¹⁸⁰ However, the availability of multiple non-core disposals has also meant that the case has been described in media as a "*classic example [of LBOs]... asset stripping rather than top line growth.*"¹⁸¹

- ii. *Ownership Concentration Monitoring Effect* is arguably the most important aspect of the incentive realignment hypothesis for the TDC case. The consortium, in its role as majority owner in TDC, elected a new board of directors, where each private equity fund behind the consortium is presented. It has hence the power to monitor management directly as well as indirectly through its compensation and ensure that planned operating improvements are followed through.
- iii. *Managerial Equity Ownership* is increased in most LBOs as a mean to incentivise managers. Although no public data on managerial equity ownership is available, it is reasonable to assume that management was granted two to three per cent in post-LBO equity stake in the form of share options. The connected vast wealth gain potential is sure to incentivise management to act in shareholders' (and hence their own) interest, facilitating substantial management-shareholder incentive realignment.

The premium of nearly 40% paid on the pre Wall Street Journal article share price is evidence that the new owners expect to be able to substantially increase the value of TDC under their ownership. Exactly how these value improvements are to be achieved is not known to third parties. However, we believe that the *Tax Benefit Hypothesis* has some explanatory power in quantifying the premium since it seems plausible that at least part of the premium stems from tax savings attributable to the new capital structure. This would be

¹⁷⁹ See Appendix section A.3 for a valuation multiples of TDC and other European telecommunication companies

¹⁸⁰ These businesses outside TDC's market have been acquired in recent years

¹⁸¹ David Arlettaz, director of telecom at Commerzbank in an interview for *Telecommunications Online* (Jan. 26th 2006)

consistent with the empirical evidence that tax benefits account for a large fraction of the premiums paid in LBOs.

The notion that managers at TDC had superior information about the true value of the firm they were managing is speculative, at best. *Informational asymmetries* between managers and shareholders could have been persistent and have some explanatory powers in the LBO, but they are difficult to quantify. The fact that ATP decided against tendering their shares, on the grounds that they considered the bid to be too low, could however be evidence that they had superior information about the true value of the firm compared to other shareholders. However, ATP's decision not to tender is more than anything else a sign that they see the potential for above average returns that the financial sponsors are likely to produce. Taking the size of their stake into account, the risk of a minority squeeze-out is considerably smaller than for the small shareholder (although the risk is still substantial).

One argument for undertaking the LBO was to make TDC a private company. According to the new owners, a delisting would benefit the company since it would result in the elimination of "the obligations from being a public company"¹⁸². Although many of the costs associated with being publicly listed are especially burdensome to much smaller companies, cost savings from delisting did play a role in the buyout. At the time of writing, TDC stocks were still listed on the Copenhagen stock exchange, hence cost savings from delisting have not been achieved to date. It is however reasonable to assume that most gains of the LBO can be achieved even by not taking the company private, although being accountable to third parties is costly and might limit some of the indirect gains.

5.6 Concluding Remarks on Case

The leveraged buyout of TDC should be seen as exemplifying most of the key aspects of modern LBO activity, rather than a universal description for all forms of modern LBOs. Although the transaction displays some features of existing theory, it can not fully, credibly explain all of the determinants of LBO activity outlined in this thesis. Furthermore, the case is to some extent speculative regarding the possible determinants of the transaction as some

¹⁸² Kurt Björklund's speech at the AGM 2006

of the reasons for the buyout as well as its subsequent success (or failure) will emerge at a later state.

However, despite the aforementioned limitations, we believe the case to be representative of the sophistication and stage of modern large-scale LBO activity. As such, it is one of the best available empirical examples of the practical application of several hypotheses of leveraged buyout theory.

6 CONCLUSION

The leveraged buyout is an intriguing phenomenon and a very topical one in today's takeover environment. In decomposing the leveraged buyout in its *history and progress* we have found that, just like mergers and acquisitions in general, LBOs appear to be occurring in waves. At present, the world and Europe in particular is witnessing unprecedented levels of both M&A and LBO activity. The leveraged buyout can also be likened to merger and acquisitions in that it can fulfil the role of a disciplining *external governance* mechanism in the market for corporate control.

The leveraged buyout can however also be distinguished from general takeover activity in that it comprises an unparalleled battery of *internal governance* mechanisms. The LBO is well poised to re-align incumbent managements' interest with those of the shareholders in an MBO or management participation in a LBO. The LBO furthermore achieves remarkable monitoring powers, both with respect to the high amount of leverage used in LBOs and through the direct and indirect monitoring functions of the Board of Directors.

Value creation in connection with the buyout is empirically observed, yet the actual sources of gains that comprise the determinants are not easy to be assessed. Since synergies play no or only a very limited role in LBOs, value creation must stem from other factors. In assessing the *determinants as hypothesised in empirical and theoretical research* we have found that hypotheses tend to be associated with either incentive realignment, tax benefits, stakeholder wealth transfer, or other factors such as informational asymmetry and undervaluation or takeover defence. We have also presented new evidence and alternative explanations voiced in the present leveraged buyout debate but not hypothesised in theoretical research. Here the changing role of private equity from being a pure financial engineer to actually focusing on value adding approaches in an increasingly competitive environment is emphasised. Furthermore, the (excess) liquidity in bond and leveraged loan markets as well as the capital abundance witnessed in private equity are presented in a cautionary note that returns are bound to decrease in a less favourable buyout and exit environment.

The *case study* of the recent large-scale LBO of Danish incumbent telecom operator TDC A/S – the largest of its kind in European history and the second largest in the world to date – serves as a preliminary attempt to assess the explanatory power of existing theory for modern leveraged buyout activity. We find that in the case of TDC, existing theory seems to capture much of the determinants of the investment. The incentive realignment hypothesis shows a strong foothold throughout the case. Also, some features of the stakeholder wealth transfer are present, as well as most possibly tax benefits. Overall, the theoretical framework showed significant quality in capturing faceted aspects of modern leveraged buyout activity. However, the ultimate returns to modern private equity activity in general and NTC in particular will also depend on the market environment and behavioural factors not readily captured by empirical research.

APPENDIX

A.1 2005 Top Ten Announced Leveraged Buyouts

Rank	Target	Year	Value (\$mm)	Country	Industry	Buyer	Deal type
1	TDC A/S	2005	15,307	Denmark	Telecommunication	Apax, Blackstone, KKR, Permira, Providence	Public-to-Private
2	Wind Telecomunicazioni SpA	2005	12,585	Italy	Telecommunication	Weather Investments Srl (Naguib Sawiris)	Divestment
3	Galleries Lafayette SA	2005	11,590	France	Consumer	Moulin family, BNP Paribas	Public-to-Private
4	Amadeus	2005	5,852	Spain	Technology	Cinven, BC Partners	Public-to-Private
5	Basell NV	2005	5,695	Netherlands	Chemicals and materials	The Chatterjee Group, Access Industries Inc	Divestment
6	National Grid Transco plc (South of England & Scotland distribution network)	2005	5,662	UK	Utilities	Scottish & Southern Energy Plc, Ontario Teachers Pension Plan, Borealis Infrastructure Corporation	Divestment
7	ISS A/S	2005	5,236	Denmark	Services	EQT, Goldman Sachs	Public-to-Private
8	Rexel S.A	2005	3,956	France	Industrial	CDR, Eurazeo, Merrill Lynch	Public-to-Private
9	Coral Eurobet (2005)	2005	3,878	UK	Leisure	Candover, Cinven, Permira	Secondary buyout
10	Kabel Deutschland GmbH	2005	3,430	Germany	Telecommunication	Providence	Secondary buyout

A.2 Private Equity Fundraising Activity

Funds currently fundraising		Closed selected funds	
Private equity funds	Target (bn)	Private equity funds	(bn)
KKR	\$15.0	Blackstone	\$13.5
TPG	\$14.3	Apollo	\$10.1
Bain Capital	\$10.0	GS PIA	\$8.5
Permira	€ 9.0	KKR	\$8.1
Thomas H Lee	\$7.5	Warburg Pincus	\$8.0
Cinven	€5.5-€6.5	Carlyle	\$8.0
Charterhouse	€ 4.0	Madison Deaborn	\$6.5
Vestar Capital Partners	\$3.7	CVC	€ 6.0
TA Associates	\$3.5	BC Partners	€ 5.8
Terra Firma	€ 3.0	Permira	€ 5.1
Francisco Partners	\$3.0	KKR	€ 4.5
Doughty Hanson & Co.	€ 2.5	Apax	€ 4.5
Oak Hill Partners	\$2.5	Cinven	€ 4.4
Diamond Castle Holdings	\$2.5	CD&R	\$4.0
Jordan Company	\$2.5	Candover	€ 3.5
Avista Capital Partners	\$2.0	Advent	€ 3.3
Bear Stearns Merchant Banking	\$1.8	PAI	€ 2.7
MidOcean Partners	€ 1.0	EQT	€ 2.5

Source: Factiva, Private Equity News, Bloomberg

A.3 TDC Peer Group

Valuation Multiples

Company	FV/EBITDA			FV/(EBITDA-Capex)			Market cap. (€ mm)	Adj. FV (€ mm)
	2006E	2007E	2008E	2006E	2007E	2008E		
Belgacom	5.4x	5.6x	5.7x	7.3x	7.6x	7.8x	9 664	12 226
BT Group	4.8x	4.7x	4.7x	10.5x	10.3x	9.9x	27 066	38 919
Deutsche Telekom	4.8x	4.9x	4.7x	8.0x	9.9x	8.3x	58 938	100 619
Eircom	7.1x	6.8x	6.5x	12.3x	12.4x	11.6x	2 102	4 247
France Telecom	6.0x	5.7x	5.6x	8.6x	8.3x	8.2x	55 629	112 051
KPN	5.8x	5.8x	5.7x	8.3x	8.9x	9.4x	18 207	27 146
OTE	6.5x	6.1x	6.1x	11.0x	10.3x	10.2x	8 615	13 728
Portugal Telecom	6.1x	6.0x	5.8x	10.3x	10.3x	9.4x	9 245	14 002
Swisscom	6.3x	6.3x	6.4x	8.5x	9.3x	9.4x	15 978	16 850
Telecom Italia	6.7x	6.4x	6.2x	11.0x	9.7x	9.0x	45 919	87 675
Telefonica	6.0x	5.6x	5.3x	8.8x	8.2x	7.6x	61 760	92 258
Telekom Austria	6.3x	6.3x	6.2x	10.0x	9.5x	9.4x	9 036	12 097
TeliaSonera	5.5x	5.3x	5.1x	9.1x	8.8x	8.2x	19 803	16 190
Telenor	5.7x	4.8x	4.6x	14.8x	10.2x	8.6x	13 884	17 493
<i>TDC (Aug 16th)</i>	<i>4.8x</i>	<i>4.7x</i>	<i>4.5x</i>	<i>8.6x</i>	<i>8.3x</i>	<i>7.7x</i>	<i>7 266</i>	<i>8 566</i>
<i>TDC (at tender offer)</i>	<i>6.6x</i>	<i>6.4x</i>	<i>6.3x</i>	<i>11.8x</i>	<i>11.4x</i>	<i>11.0x</i>	<i>9 930</i>	<i>11 158</i>
Mean (excl. TCD)	5.9x	5.7x	5.6x	9.9x	9.6x	9.1x		
Median (excl. TDC)	6.0x	5.8x	5.7x	9.6x	9.6x	9.2x		
Mean close peers	5.9x	5.9x	5.8x	8.6x	8.8x	8.8x		

Close peers include Belgacom, KPN, Swisscom, Telekom Austria, TeliaSonera

Source: Bloomberg, Broker Reports

Operational Metrics

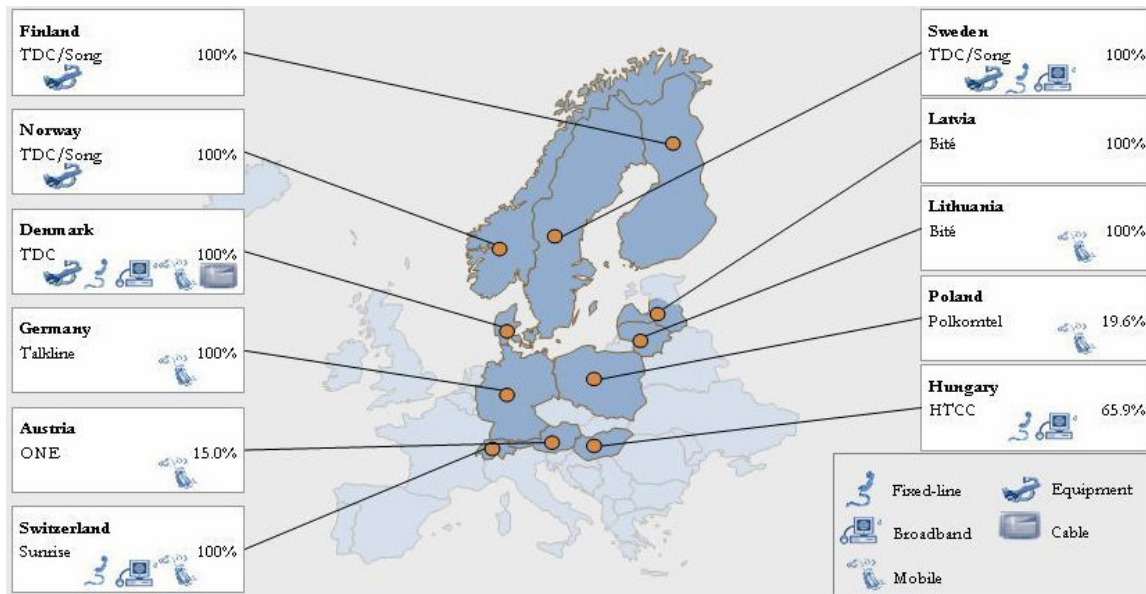
Company	EBITDA margin			EBITDA growth			EBITDA-Capex margin		
	2005E	2006E	2007E	2005E	2006E	2007E	2005E	2006E	2007E
Belgacom	40.6%	35.2%	34.3%	-7.5%	-4.5%	-4.3%	27.8%	24.9%	24.1%
BT Group	28.5%	28.2%	28.3%	-1.5%	0.3%	0.8%	13.0%	12.9%	13.4%
Deutsche Telekom	33.7%	32.7%	34.3%	3.8%	0.2%	7.0%	18.2%	13.2%	17.7%
Eircom	35.2%	33.6%	33.5%	-2.3%	5.2%	4.3%	20.4%	19.4%	19.8%
France Telecom	37.6%	36.7%	37.5%	2.8%	3.9%	3.8%	25.2%	23.3%	24.1%
KPN	39.6%	38.3%	38.4%	-2.7%	-1.3%	0.9%	27.9%	24.3%	22.4%
OTE	36.5%	37.7%	40.0%	20.8%	7.9%	9.0%	24.0%	17.3%	23.2%
Portugal Telecom	39.1%	35.6%	36.2%	7.3%	-5.6%	3.7%	24.3%	21.2%	22.8%
Swisscom	42.6%	41.6%	41.6%	-5.8%	-3.7%	-1.4%	31.4%	27.7%	27.7%
Telecom Italia	41.8%	43.3%	43.7%	-13.8%	6.5%	2.3%	24.5%	27.4%	29.3%
Telefonica	40.5%	37.1%	37.0%	19.1%	24.5%	3.6%	26.7%	23.1%	23.8%
Telekom Austria	41.4%	40.4%	40.3%	22.1%	-1.4%	0.0%	26.2%	26.2%	26.6%
TeliaSonera	31.4%	33.6%	35.1%	-35.6%	8.9%	4.9%	18.2%	19.7%	21.7%
Telenor	33.1%	34.2%	34.5%	14.4%	19.5%	5.7%	13.0%	13.0%	16.5%
<i>TDC</i>	<i>27.2%</i>	<i>27.8%</i>	<i>28.0%</i>	<i>3.4%</i>	<i>2.8%</i>	<i>2.4%</i>	<i>15.2%</i>	<i>15.6%</i>	<i>15.9%</i>
Mean (excl. TDC)	37.3%	36.3%	36.8%	1.5%	4.3%	2.9%	22.9%	21.0%	22.4%
Median (excl. TDC)	38.3%	36.1%	36.6%	0.6%	2.1%	3.7%	24.4%	22.2%	23.0%
Mean close peers	39.1%	37.8%	37.9%	-5.9%	-0.4%	0.0%	26.3%	24.5%	24.5%

Source: Bloomberg, Broker Reports

A.4 Recent Telecom M&A activity

Date	Target	Target Country	Bidder	Enterprise Value EUR bn	EV/ EBITDA	EBITDA margin of target
Nov 05	TDC	Denmark	NTC	12.9	6.6	28%
Jul 05	Iceland Telecom	Iceland	Institutional investors	0.9	8.8	38%
Jul 05	Turk Telecom	Turkey	Saudi Oger	9.9	6.6	37%
Jun 05	Wind	Italy	Weather Investments	12.1	7.8	32%
May 05	Bezeq	Israel	Apax Partners/Saban Cap.	3.7	5.6	38%
Apr 05	Cesky Telecom	Czech Rep.	Telefonica	7.7	6.2	47%
Aug 04	Telekom Austria	Austria	Swisscom	10.5	6.5	38%
Mar 02	Sonera	Finland	Telia	7.3	11.8	26%
Jul 01	Eircom	Ireland	Valentia	2.5	5.6	30%

A.5 TDC Geographic Footprint



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