THE RISKS AND RETURNS OF MANAGEMENT BUY-OUTS

Evidence from the Netherlands

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1 Introduction

During the last decades, the Management Buy-Out (MBO) has become a popular phenomenon, both in practice and in literature on corporate finance and corporate restructuring. One of the examples still appealing to one's imagination is the famous 1988 RJR Nabisco buy-out in the United States with spectacular biddings and a final buy-out price of more than $ 24 billion. In the Netherlands, which (in absolute as well as relative terms) has been and still is one of the largest MBO markets in continental Europe, the number of MBOs increased from 12 in 1984 to around 60 per year at the end of last century (Van der Wurf 2001). This development would have been impossible without a steady growth in the supply of capital provided by banks, venture capitalists and many other financial institutions. However, the development of a mature buy-out market depends on several factors and requires more than just one simple explanation. Many attempts have been made to solve (a part of) this puzzle and since the emergence of the buy-out market in the late seventies many articles, books and papers have been written on the issue. The following paper focuses on one particular theory that aims to explain the rationale behind and the popularity of MBOs. Starting from the well-known risk-return trade-off, this theory tries to solve the puzzle by arguing that (on average) positive abnormal returns, in other words excess returns, are achieved after the MBO transaction has taken place. If true, the theory may be a viable explanation for MBO popularity. So, by doing empirical research, we intend to answer the following question:

Do investments in Dutch Management Buy-Outs result in excess returns?

This paper is structured as follows. First we have to explain the concept “Management Buy Out”; this will be the subject of Chapter 2. In this second chapter we also give a small overview of the historical development of MBOs, and discuss the different forms of buy-outs. Finally, this chapter goes into several theories that each try to explain the motives for
engaging in MBO-transactions. In Chapter 3, the theory that explains the popularity of MBOs from the risk-return perspective will be studied in depth. Two papers will be discussed in that chapter: one that discusses the subject using the model used by British researchers, and a second paper that describes the approach of a British-Dutch research team. Chapter 4 attempts to answer the above question with an empirical research project covering 33 Dutch MBOs. Finally, in Chapter 5 we discuss our main conclusions and give some suggestions for further research.

This paper does not claim to give a universal explanation for the popularity of MBOs; we only hope to find evidence for excess returns. If so, these excess returns may provide an interesting theory to explain this popularity.
2 Corporate Restructuring

2.1 Introduction
In this paper we define an MBO as a transaction in which one or more members of the incumbent management team obtain a controlling interest in a (subsidiary of a) firm for which they are employed after which they intend to continue operating this subsidiary or firm for own account and risk, at least partly. The reasoning behind this definition is explained by Herst (1990, pp. 9-13).

Although the MBO may be a very old phenomenon, the first buy-outs that started to attract attention emerged in the sixties in the United States. From the first half of the nineteen-seventies on, the buy-out emerged in the United Kingdom and a little later in continental Europe as well. As can be seen in Figure 2.1, the Netherlands can be considered as one of the most developed MBO-markets of continental Europe.

![Figure 2.1: Number of MBOs in continental Europe in the eighties. Source: Bruining and De Jong 1991](image)

From the 1980s onwards, the MBO became increasingly popular and attracted international attention. The MBO has been and still is an important instrument for corporate restructuring and the gaining of independence in many countries such as the United States, the United Kingdom, France and the Netherlands. This chapter examines the development of the Dutch
MBO market including a discussion of the recent turbulent environment of MBOs against the background of corporate restructuring.

2.2 Defensive MBOs
The past period witnessed a massive corporate restructuring of the industrial sector of the Dutch economy. Before the 1970 oil crises the Dutch economy was very healthy and a wave of acquisitions and mergers took place. This resulted in the rise of the conglomerate: examples are Bruynzeel, OGEM, Philips, Rijn-Schelde-Verolme and Unilever. The earnings of these conglomerates grew in a spectacular way, also because they merged with and/or acquired other firms with sizeable profits. The idea behind conglomerization was that, by means of diversifying into other industries, a conglomerate would be able to reduce its risks. This is correct as far as unique or diversifiable risk is involved; for instance the risk of a fire in a subsidiary or strikes in a specific industry. However, conglomerization is of no avail when the (inter)national economy becomes depressed; this is called market or non-diversifiable risk. And this was exactly what happened after the oil crises. Both oil crises had a dramatic effect on the open Dutch economy. Many firms incurred enormous losses and had to reorganize or liquidate. Some of the conglomerates mentioned above (OGEM, Rijn-Schelde-Verolme) went bankrupt, but some subsidiaries were still profitable and tried to break away from their distressed parent companies. This led to the first MBO wave; examples are Stokvis (from the OGEM conglomerate) and Thomassen International (from the Rijn-Schelde-Verolme conglomerate). These MBOs are called defensive, because the necessity of restructuring was the main motive for engaging in an MBO transaction. Quite often an MBO turned out to be the last resort because other companies (mostly competitors that would benefit by the bankruptcy of the distressed conglomerates) were not interested at all, or only in a small part of the company. Furthermore, in many cases ties with the parent companies continued to exist after the transaction. Therefore, MBOs were quite often considered the best way to divest.

2.3 Offensive MBOs
Besides these defensive buy-outs from the second part of the nineteen-eignties onwards, the so-called offensive buy-out became increasingly popular. An offensive buy-out is a buy-out of which strategic considerations are the main motive. Quite different reasons may be involved, such as a focus on the core business activities of the parent company. Fact is that the buy-out market in the Netherlands continued to show a considerable growth, see Figure 2.2.
Figure 2.2: Number of MBOs in the Netherlands. Source: Van der Wurf 2001

Van der Wurf (2001) mentions three important factors that facilitated this growth:
- a stable and mature private equity market,
- a tendency of investors to expand geographically,
- the existence of a relatively large amount of institutional capital and many institutional investors with large financial capacity (for instance pension funds).

More importantly, in Figure 2.3, the magnitude of the Dutch MBO market can be observed. This figure shows the amounts of money (in millions of Dutch guilders) invested in MBOs by Dutch venture capitalists and gives an indication of the growth of the MBO market.
Comparing Figures 2.2 and 2.3, we can see that the buy-out price per company showed substantial growth over the years.

Although related to the general economic situation, it is believed that the factors that stimulate the development of the buy-out market in the Netherlands, as mentioned above, will continue to exist in the near future. Some researchers, like Van der Wurf, think the public-to-private deal is one of the most promising sources of an MBO-transaction in the coming future. More on the PTP transaction in the Section 2.5.1 below.

2.4 Terminology

Up to now, we concentrated on MBOs. However, besides the term “Management Buy-Out”, there are several other terms in use. These terms are often confusing to the reader and the difference with an MBO is sometimes small. The most common difference of these other types with the MBO is that a set of outside entrepreneurs acquires the company or division. This does not change most of the essential characteristics of the “traditional” MBO. For instance, normally the combination of financing methods is about the same, but the proportions of these financing methods may differ (as for example is the matter with a Leveraged Buy-Out). For the sake of convenience, authors sometimes refer to these other types using the term “Management Buy-Out” in general, but other names are applied too. In
this thesis we shall only use the term MBO. The transaction types discussed below overlap each other in many cases and are sometimes used interchangeably.

### 2.4.1 Leveraged Buy-Out (LBO)

The LBO is a buy-out where considerable levels of debt are raised in order to finance the deal. Normally, the providers of this debt capital are closely involved in negotiations with the vendor (Ross, Westerfield and Jaffe 2002). Cases of highly leveraged LBOs where up to 90% is financed with debt are realized. From the eighties of the last century onwards, buy-outs with high leverage were quite popular. One of the examples that appeals to one's imagination is the famous RJR Nabisco buy-out in 1988 with spectacular biddings and a final buy-out price of more than $24 billion. Buy-outs of which the larger part is financed with debt can only be done if companies issue bonds with low ratings. These so called junk bonds or high yield bonds, require the firm to pay high interest rates. Of course there is a lot of risk associated with the extensive use of debt in financing a buy-out and the interest burden of highly leveraged companies is sometimes enormous. Nevertheless, the growth of the junk bond market from the early eighties on has stimulated the growth of the LBO-market and vice versa. But since the high default ratios in the late eighties and beginning of the nineties, see Figure 2.4, managers have become rather sceptical concerning the use of too much junk bonds for financing a buy-out.

![Figure 2.4: Default ratio of junk bonds. Source: E.I. Altman and V. Kishore, “Defaults and Returns on High Yields Bonds: Analysis through 1994,” New York University Salomon Center, Leonard N. Stern Business School.](image-url)
In the US, 30% of the market for junk bonds related to buy-outs (Wright, 1994). In the Netherlands the Capital Protection Law restricts the use of too much debt in financing buy-outs. This law forces the MBO-managers to maintain acceptable levels of minimum net worth in order to protect the existing shareholders and creditors (Bonnet, Bruining and Herst, 1998).

2.4.2 Leveraged Management Buy-Out (LMBO)

An LMBO involves an LBO in which one or more members of the incumbent management team realize the transaction. These managers obtain a controlling interest in the company. Normally these buy-outs are referred to as LBO or MBO (Krieger 1990) and these terms are frequently used interchangeably.

2.4.3 Management Buy-In (MBI)

In some cases, the (entrepreneurial) skills of the incumbent managers are insufficient to realize the buy-out. Then another possible transaction is the so-called Management Buy-In (MBI). An MBI is involved when a manager or management team from outside the company realizes the buy-out. Actually an MBI looks like an MBO very much with, according to Krieger (1990), one crucial difference. The incumbent managers of an MBO or LMBO typically have considerable knowledge of the company to be bought out. Therefore, the risk of failure is lower. However, in an MBI the buying team does not dispose of the same in depth knowledge. Sometimes MBIs are hostile bids on companies quoted on the stock exchange (Krieger 1990, Wright 1994).

2.4.4 Joint Buy-Out

In other cases, one of the keys to a successful buy-out is the specific knowledge of the company that management possesses. However, high investment needs and volatile market conditions may cast doubt on the attractiveness of the company as an independent one. Then, instead of an MBO or MBI, one can decide for a joint buy-out by incumbent managers and external partners. The parent company may also become such a partner. Reasons for a partial buy-out are an interesting trading tie between the parent and the company, or a feeling of responsibility of the vendor/parent company (Wright 1994).
2.4.5 Investor Buy-Out (IBO)
When a company or division is sold to a group of external investors, an Investor Buy-Out or IBO is involved. Not internal managers but this group of investors gets the (partial) ownership of the new independent company (Bruining 1992).

2.4.6 Management and Investor Buy-Out (MAINBO)
If specific management skills or specific knowledge of the company as well as high investment needs are a prerequisite for a successful buy-out, then internal managers may look for participation of external investors in the buy-out team. The result of this co-operation is a MAINBO: a Management and Investor Buy-Out.

2.4.7 Employee Buy-Out (EBO)
If one or more employees realize a buy-out by obtaining a majority of the company’s equity, we generally speak of an Employee Buy-Out or EBO. If, on the other hand, top or middle managers obtain the majority, normally the term MBO is used (Bruining 1992). Quite often, a buy-out team includes employees in the transaction by stimulating them to participate in the company’s equity. Although several buy-outs have proven that letting employees participate (at least to a certain degree) in the transaction can be quite rewarding and sometimes even a vital element for having a successful buy-out, this does not automatically imply that an EBO is involved (Long 1978, Van Ek 1991, Broos 1991). For a buy-out to become an EBO it is necessary that employees realize the transaction.

2.4.8 Buy-In Management Buy-Out (BIMBO)
Sometimes, external managers and incumbent or internal managers form a team in order to realize the transaction. Then a BIMBO is involved: a combination of an MBI and an MBO. A BIMBO may become relevant when specific management knowledge of the company is necessary, but not all internal managers are willing to participate in the transaction. Then one or more external managers are necessary to realize the deal.

2.5 Sources and exit types of MBOs
Buy-outs originate and buy-outs end; there is nothing peculiar about that, although some MBOs stay in hands of the buying management for a long time. Much research is done on the subject of the longevity of (management) buy-outs. Kaplan (1991) found a median of 6.82 years for his sample of going privates (going privates are companies that are listed on a stock
exchange and are delisted after the buy-out). More interesting may be the question *where* these buy-outs come from and *how* they end. These issues will be discussed in the following Sections 2.5.1 and 2.5.2.

### 2.5.1 Sources of MBOs

Buy-outs can come from quite different sources. In continental Europe one of the most important sources are *local divestments*. Just like local divestments, *foreign company divestments* are yet another important source of buy-outs. As we have seen above, these transactions are not necessarily buy-outs of the defensive type but can also result from strategic reorientation. Another source are *private businesses or family owned companies* that are bought out. A possible reason for a buy-out of a family business may be the absence of capable successors to continue managing the company in the future. The popularity of *privatisation* as a source of buy-outs is declining, although, in for instance Eastern Europe, there is still a lot of potential for privatisation. One of the fastest growing sources is the so-called *going private* or *Public To Private* (PTP) deal. These transactions are very popular in the United States and, to a lesser extent, in the UK and continental Europe. The existing stockholders of a listed company are being bought out by a group of managers of the firm. The main characteristic of this transaction is that external stock ownership is exchanged for internal stock ownership. The company will eventually be de-listed and a closed (private) company will quite often replace the former limited liability company. In the Netherlands, this type of buy-out is very rare. One of the reasons for this is the conservative use of leverage used to finance a buy-out in the Netherlands (Bruining 1992). However, some researchers see the PTP-deal as very promising in times of low stock prices, particularly for small caps (Van der Wurf, 2001; NVP, 2001). Fact is that, until now, only a few of such PTP-transactions and delistings have taken place in the Netherlands. There are some signs that this is going to change in the (near) future. One of these signs is the recently announced delisting of Free Record Shop, see Dagblad De Limburger (a Dutch newspaper) December 21, 2001. A last source for buy-outs is *receivership* (Burrows and Wright, 2000). See Figure 2.5 for more information on sources of MBOs in continental Europe.
2.5.2 Exit forms

A couple of years after the MBO-transaction most venture capitalists want to sell their part in the MBO in order to capitalize their stake. In some cases, management itself wants to realize its stake in the company. There are several possibilities for an exit. A first possibility is an Initial Public Offering (IPO) in which the company is listed (again) on a stock exchange. If the climate on the stock market is not attractive, the number of flotations decreases. This is logical because, compared to prosperous times on the stock markets, a flotation will bring in less capital. Another exit-form is a trade-sale. Here the buy-out firm is sold to another (third) group. In continental Europe (and in the Netherlands) trade sales are the most important means of exiting a buy-out. Another possibility is a secondary management buy-out or buy-in. Here the buy-out process starts all over again. A last, and rather sad, exit form is receivership. In continental Europe, trade sales are the most popular exit-form while in the United Kingdom flotations are more important.

2.6 The motives for management buy-outs

As already pointed out in this chapter, there are many possible motives for taking a (subsidiary of a) firm into an MBO. In this section, we aim to answer the following question: What is the rationale for engaging in an MBO transaction? In other words, what are possible explanations for an MBO-transaction coming into existence? In current literature, there are several theories that try to answer this question. Below, some important hypotheses will be discussed: tax considerations, agency theory, protection against a hostile take-over,
information asymmetry, the MBO as a last resort and increased financial performance and the risk-return trade-off.

2.6.1 Tax considerations
According to some researchers, post-buy-out tax savings are the strongest incentive for a buy-out (Lowenstein 1985). Due to the extensive use of leverage in financing the buy-out, interest payments on debt are considerably higher after the transaction than before. Because interest is deductible from the company’s profits, substantial tax benefits can be created in this way: a so-called tax shield. Lowenstein also argues that possibilities for increased depreciation (after the buy-out) may result in another tax gain. Lowenstein’s research was done on MBOs that were listed on a stock exchange before the transaction took place. He reasons that these tax benefits are used to pay the premium that is normally offered above the market price of listed companies before the offer is done. Kaplan (1989) shows that the value of the tax incentive amounts from 21% (minimum) up to 143% (maximum) of the premium paid to pre-buyout shareholders. From his research on British buy-outs Van der Wurf (2001) also concludes that, after the MBO, the tax-burden of companies decreases considerably and generates cost advantages. All above mentioned research was done on companies that were listed on a stock exchange before the MBO took place. However, the above results can easily be related to the Dutch situation where relatively few delistings have taken place, because in the Netherlands interest is deductible from profits too, irrespective of listed companies are involved or not. The Dutch “Wet op de Vennootschapsbelasting” (= Law on Corporate Taxes) allows unrestricted deductibility of interest paid over debt on corporate taxes, and therefore net profits will be higher. Bruining (1992) also recognizes the fact that tax savings lead to higher profits after taxes. Paying the financing costs out of the (fiscally) increased profits is indeed an argument for engaging in an MBO transaction. However, as Singh (1990), Kieschnick (1987) and Bruining argue, it is hard to conclude that tax savings are the prime reason for engaging in an MBO transaction. The problem is that the firm’s management first has to come up with the sufficient cash flows to pay interest and debt repayment before it can deduct interest payments. Another argument for taxes not to be the prime reason for engaging in an MBO is that, due to the fact that most loans have to be paid back, this tax incentive comes to an end. Furthermore, an MBO is not the only way to make use of interest deductibility; leasing for instance is another way. However, there is no doubt that tax incentives may be an important factor and should not be underestimated.
2.6.2 Agency theory

2.6.2.1 Theory

Another reason for the popularity of MBOs relates to the agency-theory of Jensen and Meckling (1976). This theory concentrates on the delegation of decision authority from the principal to the agent within an organization. The relationship between shareholders and management of a company can also be described as a principal-agent relationship. Because management has an information lead over the shareholders, it is possible that management (the agent) uses this lead in its own advantage rather than in the advantage of the shareholders (the principal). In this way, conflicts of interest between agent and principal may arise, and agency costs will be made. Usually, four types of agency costs can be distinguished: contracting costs, monitoring costs, bonding costs and a residual loss. Contracting costs are the costs to be made for drawing up the contracts between management and shareholders in such a way that the probability of conflicts is minimized. Monitoring costs are costs that will arise because stockholders have to supervise the work of managers to see if they acted (for example made decisions) in the interest of the shareholders. Bonding costs are the costs incurred to show and convince the shareholders that management has acted in their interest. However, management may make decisions that deviate from the optimal decisions desired by shareholders; the resulting loss is called residual loss. It may be that management acts in its self-interest rather than maximizing the firm’s market value for instance by accepting projects that do not add sufficient value. An example is the free-cash flow problem. If there are residual cash flows for which no sound project is found and management receives compensation incentives for growth instead of market value, there is a risk of taking on inferior projects for the sake of growth (resulting in a decrease in shareholder value).

2.6.2.2 Solution: MBO

An MBO may end the conflicts between the shareholders and management. As we have seen above, management takes part in the MBO with a substantial equity stake. In this way, managers become shareholders: the agents are transformed into principals. Optimizing profits and shareholder value no longer conflict with optimizing management’s own goals. In other words, acting in self-interest is now tantamount to acting on behalf of the shareholders. The idea is that where agent-principal conflicts and agency costs are substantial, an MBO can become a tool to get rid of this problem and lower agency costs. Jensen (1986), Kaplan (1989), Bruining and De Jong (1991), Bruining (1992) and Van der Wurf (2001) all find evidence for this hypothesis. However as Bruining argues, after the MBO an important task
for management is to convince the firm’s employees (also agents) that they have to act in the interest of management (the new principal). This may result in new agency costs. He concludes that on balance, after an MBO agency costs will decrease. This is the general opinion in most of the research done on this subject.

2.6.3 Protection against a hostile take-over

According to Kieschnick, another theory for explaining the popularity of MBOs is its use as a means to protect the organization against a hostile take-over (Bruining 1992). There are, however, several other possibilities for companies to protect themselves against hostile take-overs. Particularly in the Netherlands, there is a tremendous number of “tricks” to protect a firm against a hostile take-over, for instance certification of stocks or issuing preferred stock. So on first sight, protection against a hostile take-over cannot be the prime motive for an MBO-transaction. But if a subsidiary is for sale and management thinks an MBO is the best alternative, protection against a hostile take-over becomes a plausible argument. In this way management also secures its own job. After an MBO, most companies appear to protect themselves against take-overs, which is a sign of good prospects of which management wants to reap the fruits (Van der Wurf 2001). Concluding, according to Kieschnick and to Bruining (1992), the buy-out of a company by management as a form of take-over protection must be seen more as a result of a calculated chance of success of an MBO then as a prime motive for engaging in an MBO-transaction.

2.6.4 Information asymmetry

Lowenstein (1985) argues that the management team that buys out the company has more information of the business than any other (group of) person(s) and therefore, management is able to pay a relatively low price to the existing shareholders. In other words, the buy-out price is lower than the market value of the company. This enables the management team to make a considerable profit. According to Lowenstein, information asymmetry can be considered an important motive for engaging in an MBO-deal. On the other hand, Kaplan (1989) did not discover convincing evidence to support this hypothesis. He finds that stock ownership of management indeed grows considerably. But top management's equity stake increases less (from a median of 1.48%% to 4.41%) than the stake of lower management (from 1.19% to 9.96%). This is a remarkable outcome if one assumes the buy-out price to be too low. According to Kaplan, it should be higher management that prefers undervalued stock while lower management would prefer a higher salary over undervalued stock. This is
because it is top management that leads the company, has the information advantage and realizes the MBO. It is reasonable to assume that the top managers want to take full advantage of this situation and participate the most in the buy-out. Lower management does not have a direct influence on the direction and the results of the firm, and would therefore prefer a higher salary to (undervalued) stock. Besides, becoming a shareholder would also imply an increased risk. Another fact put forward by Kaplan that does not support the information asymmetry hypothesis is the substantial selling of stock by managers who give up their holding of stocks in the company after the MBO. On average, this amounts to 10% of equity. Given the fact that these managers are well informed about the low buy-out price, they should not be willing to give up their stake. Singh (1990) also refuses to accept this hypothesis as a prime rationale for a buy-out and does not find substantial value creation with buy-outs because of information asymmetry.

2.6.5 The MBO as a last resort
As we have seen before, many MBOs were of the defensive type. Particularly in the end of the seventies and the beginning of the eighties as well as in times of recession many MBOs of this type have been realized. For many conglomerates, MBOs appeared to be a last resort to sell a (subsidiary of a) firm because there were no other buyers than management itself. So more than a choice, an MBO was a necessity. If an MBO is the only option to survive, no hard reasoning is necessary to conclude that this is a rationale for an MBO.

2.6.6 Increased financial performance and the favourable risk-return trade-off
Various reasons have been put forward to explain the better performance of MBOs compared with their industry competitors, and some of them have been mentioned above. Most MBOs indeed do appear to generate increased financial performance after the transaction. There is little debate on this matter among most researchers and considerable evidence can be found in (early) literature; for instance: Bruining 1992 and Bull 1989. However, realizing an MBO may be very risky. In fact, this risk is the “price” that has to be paid for the high return. But if investments in MBOs nevertheless result in positive abnormal returns, these returns can be considered to be a possible explanation for MBO popularity among managers as well as venture capitalists, and therefore as a strong rationale for MBOs. Bruining, Herst et.al. (1993) and Thompson, Wright and Robbie (1992) investigate this risk-return trade-off for MBOs and find evidence for positive abnormal returns (they use the term excess returns to emphasise
that the abnormal returns they found are positive) in the Netherlands and the United Kingdom. In the next chapter we shall look into this theory more extensively.

2.7 Conclusions
This chapter discussed several basic principles of an MBO. We defined the term Management Buy-Out and we paid attention to different types of buy-outs. Furthermore, a historical perspective of the development of the Dutch buy-out market can be found in this chapter. As we have seen, buy-outs come from different sources and have different underlying reasons. Finally, we tried to outline some of the theories mentioned by several authors aiming to explain the rationale behind the MBO transaction. One has to keep in mind that although an individual theory may not fully explain the rationale of MBOs, that does not mean that this theory is useless. An MBO may very well be the result of a combination of theories. The last theory we discussed was the alleged favourable risk-return trade-off. As it is the subject of this paper, the next chapter will go deeper into this theory.
3 The favourable risk-return trade-off, existing literature

3.1 Introduction
As we have seen at the end of the previous chapter, positive abnormal returns may be a plausible explanation for the popularity of MBOs. In this chapter we discuss research done on this issue. Can the attractiveness of MBOs be explained in terms of the risk-return perspective? In other words, can excess returns be achieved by means of MBOs? Before answering this question in the next chapter with the help of our own research using Dutch data, we shall give a short overview of two papers devoted to this subject. In the first section of this chapter, we are going to look into a problem of doing research on the risk-return trade-off of MBOs. Then two papers on the risk-return trade-off will be discussed. First Bruining’s PhD thesis (1992), in which he compares certain financial ratios of buy-out firms with industry averages and combines the results with an analysis of risk reducing measures taken by buy-out managers. In this way Bruining investigates the risk-return trade-off for Dutch MBOs. This paper serves as the starting point for a paper of a British-Dutch research team consisting of Bruining, Herst, Robbie and Wright (1993). Secondly, we will discuss a paper written by Thompson, Wright and Robbie (1992). For British MBOs, they used rates of return achieved in exited buy-outs and compared these rates with the performance of the market as a whole.

3.2 The problem of risk and return with MBOs
To answer the question whether MBOs show positive abnormal results, ex-post returns can be derived from changes in market values taking into consideration dividends, interest payments, etc. By using the standard deviation we can measure risk. These ex-post returns and standard deviations can be used to form expectations concerning ex-ante returns and risks. This model relies heavily on market values (Bruining, Herst, et. al. 1993 and 1995). Unfortunately, these market values are a serious problem when MBOs are involved. Before the buy-out takes place, the subsidiary is a part of the parent company. If the subsidiary is not listed on the stock exchange, its market value is impossible to determine apart from the market value of the parent. Therefore it is impossible to determine market values and apply the above model to calculate risk and return.
3.2.1 Alternatives
Other ways of computing the risk-return variables have to be used. First, it is possible to compare financial ratios of buy-out firms with industry averages. If we combine these results with an analysis of the risk reducing measures MBO-managers take, we may come to a conclusion regarding the risk-return trade-off of MBOs, see Section 3.3.
A second way of investigating whether the attractiveness of MBOs can be explained in terms of the risk-return perspective is to use rates of return achieved in exited buy-outs and compare this evidence with the performance of the market as a whole. This research method is used in Section 3.4.

3.3 Firm and industry ratios and risk reducing measures, Bruining’s research
In the Netherlands sellers, buyers and investors usually are very cautious, if not conservative, in making financial matters public. Therefore, it is hard to obtain reliable information concerning Dutch MBOs, particularly when MBOs are of a relatively small size. Market values of Dutch MBOs are unavailable. Therefore, measuring risk and return in the traditional way is not possible in this country.
One can imagine calculating financial ratios after the MBO transaction has been completed, and compare them with the ratios of the same firm or subsidiary calculated before the completion of the transaction. However, the problem is that the required information concerning the period before the completion of the MBO usually is not available. So in the Netherlands it is impossible to compare ratios before and after the MBO-transaction in order to answer the question whether abnormal returns exist.

3.3.1 Financial ratios and industry ratios
But what is possible is to compare the MBO firm’s financial ratios with industry ratios. This is exactly what Bruining (1992) as well as Bruining, Herst, Robbie and Wright (1993) did. Next, we discuss their research projects.

3.3.1.1 Data and Methodology
In his PhD thesis Bruining compared 16 financial ratios of 73 medium sized and small Dutch MBOs with their industry averages. He calculated ratios to measure liquidity, solvability and profitability. In this way it is possible to find out whether MBOs performs better than the industry averages. In their paper on the risk-return trade-off Bruining, Herst, Robbie and Wright (1993) summarized Bruining’s work. They selected three of the ratios that are strongly
related to earnings and return. These were the cash flow ratio (CFR), the return on investment (ROI) and the return on equity (ROE). The ratios were calculated in the following way:

\[
\text{Cash Flow Ratio (CFR)} = \frac{\text{net profit after taxes plus depreciation}}{\text{total debt}}
\]

\[
\text{Return On Investment (ROI)} = \frac{\text{earnings before interest and taxes}}{\text{total assets}}
\]

\[
\text{Return on Equity (ROI)} = \frac{\text{net profit after taxes}}{\text{equity}}
\]

For the 73 small and medium sized MBOs these ratios were compared with the industry median. The *median* instead of the arithmetic *average* was selected in order to prevent that extraordinary observations would influence the results too much. The comparison period was seven years. Some companies are compared with the industry medians over a period of two years, others over three years and again others over four years or more. But the observation periods overlap each other. Periods of two, three or four years are there because for some companies the annual reports were not available for each year.

3.3.1.2 Results

A sign test of the results was made, see Table 3.1. The amount of MBOs that performed worse than the industry median is put on the right of each column, the amount of MBOs that performed better is on the left of each column. Furthermore, a split up is made between small firms (s), medium sized firms (m) and total firms (t). *Medium sized firms* are firms having at least two of the following three requirements: sales less than 35 million Dutch guilders, less than 250 employees and total assets less than 17 million Dutch guilders. *Small firms* are firms that have sales less than 8 million Dutch guilders, less than 50 employees and total assets of less than 4 million guilders.
All three ratios turned out to be highly significant. A T-test was also applied to measure the scale by which the MBOs outperform their industry averages. In order to show the mean performance improvement of MBOs as compared to their industry Δ CFR, Δ ROE and Δ ROI are calculated. This is done for every year during the 7 year investigation period on a 95% confidence interval. Also a variance analysis was done on these differences.

The cash flow ratio (CFR) shows a mean performance improvement of MBOs somewhere between 3 % and 32 %, with the mean around 16 %. The return on equity (ROE) shows that the highest returns are achieved during the first years (26% and 23%), after these first two years the mean moves around 15%. The 95% interval shows an improved ROE between 2,5% and 40%. The ROI also shows the highest improvement in the first years. Δ ROI is around 4 % during the first four years and starts to decline afterwards. As can be seen by some negative signs in the confidence intervals of the ROI-results, some MBO firms also underperform the industry average.

Table 3.1: Financial ratios compared to their industry median, adapted from: “Performance Improvement After Management Buy-Out”, J. Bruining, Appendix 1, Chapter 5, pages 230-231.
So compared with the industry averages, MBO firms show higher CFRs and higher ROEs during the whole period. For ROI, higher results are particularly found in the first 3 to 4 years.

### 3.3.2 Risk reducing measures

Of course, one can argue that the improved performances are necessary to compensate for the higher than average risks associated with MBO transactions. But because an MBO typically involves substantial participation by managers, they have an increased incentive to take risk reducing measures (Jensen 1986; Green 1992). So management will try to decrease its personal risk, and this may result in a decrease in the firm’s risk as well. Furthermore, management control is of great importance for venture capital companies investing in MBOs. These companies aim at decreasing the risk of an MBO firm going bankrupt (Bruining and De Jong 1991).

Bruining, Herst, Robbie and Wright (1993) found evidence that in practice management takes risk reducing measures. They discovered clear associations between management measures that increase internal and external flexibility and improvement of economic performances for successful MBOs. Table 3.2 shows measures, taken by managers contributing to their research project, that improve external and internal flexibility.

<table>
<thead>
<tr>
<th>Internal flexibility</th>
<th>External flexibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>appointing functional specialists</td>
<td>direct lines of communication with customers and faster decision making</td>
</tr>
<tr>
<td>less primacy for production but more for marketing</td>
<td>better information for customer orientation, as well as for supplier and market orientation</td>
</tr>
<tr>
<td>decreasing contracting out</td>
<td>changes in selling methods, product specifications, pricing and service</td>
</tr>
<tr>
<td>shorter lines of communication between management and operations</td>
<td></td>
</tr>
<tr>
<td>more operating autonomy of middle management and other employees</td>
<td></td>
</tr>
<tr>
<td>more direct feedback mechanisms</td>
<td></td>
</tr>
<tr>
<td>less bureaucracy</td>
<td></td>
</tr>
</tbody>
</table>

*Table 3.2: Internal and External Flexibility. Source: Management Buy-Outs and the Risk-Return Trade-Off, Evidence from the UK and Holland, Bruining, et al., RIBES, 1993.*

Operational, structural and strategic flexibility all improve performances after the MBO. By making the organization as flexible as possible, management is able to reduce risk. Summarizing, we can observe that Bruining (1992) as well as Bruining, Herst, Robbie and
Wright (1993) find evidence for better performances of MBO firms compared to their industries. They also find that MBO managers take several risk reducing measures. The combination of these two results enables them to conclude that there exists a positive risk-return trade-off for Dutch MBO firms.

3.4 Rates of return achieved: United Kingdom (Thompson, Wright, and Robbie)

To see whether abnormal returns can be achieved by investing in MBO firms, it is also possible to use rates of return achieved in exited buy-outs and compare this evidence to the performance of the market as a whole. Of course a prerequisite is that sufficient reliable data are available. As noticed above, sometimes this is a problem.

3.4.1 Data and methodology

After having gathered information on 31 divisional UK buy-outs Thompson, Wright and Robbie (1992) compared their performance with the performance of the market as a whole. These buy-outs were realized between 1981 and 1987 and exited between 1984 and 1989. For a schematic presentation of the MBO time schedule see Figure 3.1.

<table>
<thead>
<tr>
<th>Entry date</th>
<th>Exit date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division</td>
<td>Private Company</td>
</tr>
<tr>
<td>time</td>
<td>t₁</td>
</tr>
</tbody>
</table>

Figure 3.1: Evolution of the MBO participation

Four different measures of excess return were used in their research. According to Kaplan (1990), the preferred measure is the excess return on total capital (where debt and equity levels and interest payments are included), which is defined as follows:
\[ 1 + (\text{Equity}_2^* + \text{Debt}_2 + \text{Interim Payments} - \text{Total Capital}_1) / \text{Total Capital}_1 \]

\[ \text{XR}_1 = \frac{1}{1 + \frac{R_f + \beta_a (R_m - R_f)}{1 + R_f + \beta_a (R_m - R_f)}} \tag{3.1} \]

where:

- \( \text{Equity}_2^* \) = the ending period market value of equity,
- \( \text{Debt}_2 \) = the ending period book value of debt,
- \( \text{Interim Payments} \) = payments to equity or debt between 1 and 2,
- \( \text{Total Capital}_1 \) = the beginning period book value of equity plus debt,
- \( R_f \) = the risk free rate of return (here the 3-month Treasury Bill rate of return),
- \( R_m \) = the market rate of return (here the Financial Times 500 stock index),
- \( \beta_a \) = the asset beta,

and subscripts 1 and 2 denote beginning and ending period (market or book) values.

The asset beta is defined as:

\[ \beta_e \]

\[ \beta_a = \frac{\beta_e}{1 + (1 - t) \cdot d} \tag{3.2} \]

where:

- \( \beta_e \) = the equity beta,
- \( t \) = the corporate tax rate,
- \( d \) = the debt/equity ratio.

The excess return on total capital is also re-estimated omitting interim payments to equity or debt entirely, resulting in their second measure of excess return \( \text{XR}_2 \):  

\[ 1 + (\text{Equity}_2^* + \text{Debt}_2 - \text{Total Capital}_1) / \text{Total Capital}_1 \]

\[ \text{XR}_2 = \frac{1}{1 + \frac{R_f + \beta_a (R_m - R_f)}{1 + R_f + \beta_a (R_m - R_f)}} \tag{3.3} \]
The reason for omitting interim payments is that in a number of cases these payments have to be estimated, because the necessary information is missing.

As an alternative to these two measures of excess return, the researchers calculated the excess return to equity. This resulted in two new measures, XR₃ and XR₄. XR₃ calculates the excess return to investors' equity using the post-float equity beta $\beta_e$:

$$XR_3 = \frac{1 + (\text{Equity}_2^* - \text{Equity}_1)}{\text{Equity}_1} - 1$$

$$1 + R_f + \frac{\beta_e (R_m - R_f)}{1}$$

where:

$\text{Equity}_1$ = the beginning period book value of equity (book value, because in this period there is no market value yet).

Finally, XR₄ is calculated; it assumes uniform equity betas of unity ($\beta_e = 1$):

$$XR_4 = \frac{1 + (\text{Equity}_2^* - \text{Equity}_1)}{\text{Equity}_1} - 1$$

$$1 + R_f + (R_m - R_f)$$

The reason for assuming $\beta_e = 1$ is that in a number of cases the betas are rather volatile.

### 3.4.2 Results

The results found by Thompson, Wright and Robbie (1992) are very promising. For XR₁ and XR₂ they found an average excess return of 1.45% and 1.35%. XR₃ and XR₄ showed excess returns of respectively 29.46% and 29.66%. Of course, the results of XR₃ and XR₄ are inflated by the effects of leverage, since these measures give the excess return to investors equity and high leverage is a characteristic of MBOs in the United Kingdom. Based on these results the researchers concluded that British MBOs show excess returns.
3.5 Conclusions

Many difficulties arise when the risk return trade-off of MBOs is subject of research. The reluctance of most banks, buyers, sellers and investors to provide information makes it almost impossible to get reliable data on MBOs in the Netherlands. This is a little easier in the United Kingdom, partly because of the more mature status of the UK market. Therefore, the two studies we discussed (one in the Netherlands and the other in the UK) use different approaches. Bruining (1992) as well as Bruining, Herst, Robbie and Wright (1993) find evidence of better performances of 73 Dutch MBO firms compared to the industry mean and for several risk reducing measures taken by the management teams of the MBOs. The combination of these two results enables them to conclude that there exists a positive risk-return trade-off for Dutch MBO firms. Thompson, Wright and Robbie (1992) were able to use (market) information of MBOs in their research, which enabled them to develop four measures of excess return. Their results are also encouraging. For a group of 31 UK buy-outs they found considerable evidence for excess returns. So both papers found evidence for a favourable risk-return trade-off. In the next chapter we shall try to apply the model used by Thompson, Wright and Robbie (1992) to a group of Dutch MBOs.
4 The risk-return perspective, some empirical evidence from the Netherlands

4.1 Introduction
In the previous chapter, we saw some evidence for excess returns as a possible explanation for the popularity of MBOs in the United Kingdom and the Netherlands. Unfortunately, because of a lack of data, the same research as has been done by Thompson, Robbie and Wright (1992) in the UK could not be applied to MBOs in the Netherlands. Therefore, as we have seen, Bruining (1992) developed another method to investigate the issue of abnormal positive returns among MBOs in that country. In this chapter, we are going to investigate whether similar results as found by Thompson et. al for the United Kingdom can also be found for the Netherlands. This means analyzing the attractiveness of MBOs in terms of the risk-return perspective by using rates of return achieved in exited buy-outs and comparing this evidence with the performance of the market as a whole.

This model can be applied to Dutch data because the Dutch-based ABN-AMRO Bank provided us with some valuable data. For the first time, it may be possible to carry out a research project similar to the project performed in the UK.

This chapter is divided into the following sections. First of all we try to explain on why we prefer the Thompson, Robbie and Wright in order to measure the excess return instead of the commonly used internal rate of return (IRR) measure (Section 4.2). Secondly we describe the data (Section 4.3) and the methodology (Section 4.4) used in our research. The results will be discussed in Section 4.5.

4.2 Market values or internal rate of return?
Many (if not most) banks and venture capitalists use the IRR (Internal Rate of Return) for evaluating their projects and investments. The ABN-AMRO Bank for instance, uses the IRR measure for evaluating its participations in MBOs. A reason for using this measure instead of a "market based" measure may be its handiness or its convenience. Another reason for using the IRR is the fact that it is "the way things are done" in the sector. Competitors use the measure and so does the ABN-AMRO Bank. But, for academic reasons discussed below, we opt for the method used by Thompson, Robbie and Wright (1992) in order to investigate the existence of excess returns. This is because the IRR has several drawbacks.
4.2.1 Drawbacks of the IRR

The IRR is the rate that makes the Net Present Value (NPV) equal to zero. In other words, the rate at which a company would be indifferent between accepting or rejecting the project. When evaluating an investment project by using the IRR, a company can calculate whether the project is profitable or not. If the IRR of an investment project (for instance an MBO) is higher than the firm’s cost of capital used to calculate the NPV, the project can be considered to be profitable. However, in literature several drawbacks of the IRR are discussed (see for instance Brealey and Myers 2000, pp. 101 – 108).

4.2.1.1 Lending or borrowing

First of all, there is the problem of lending or borrowing. The fact is that not all cash flow streams have NPVs that decline as the firm’s cost of capital (used for discounting purposes) increases. This is due to the fact that negative cash flows mean that we are in effect lending money, while positive cash flows mean that we are borrowing money. When we borrow money we prefer a low rate of return, when we lend money we prefer a high rate of return. In this way it may be that two identical cash flow streams with opposite signs result in the same IRR (so you would conclude that the projects are equally attractive) while the net present value calculation of these streams shows two different outcomes. Here, the IRR is clearly misleading.

4.2.1.2 Multiple internal rates of return

Secondly, it is possible that a project has multiple internal rates of return. This is due to changes in the sign of the cash flow stream. The more changes in the sign of the cash flow stream, the more different internal rates are possible (for example a cash flow stream of –100, +50, -50, +50 gives three IRRs). It is even possible that there exists no IRR at all, while there is a positive net present value at all possible discount rates!

4.2.1.3 Mutually exclusive projects

Thirdly, investment projects usually require different cash outflows at the start of the project. Then the IRR can be misleading too, because a higher IRR does not always mean a higher NPV in absolute terms.

4.2.1.4 Term structure of interest rates
Usually, short-term interest rates differ from long-term interest rates. So, the short-term firm’s cost of capital differs from the long-term firm’s cost of capital. “In these cases there is no simple yardstick for evaluating the IRR of a project.” (Brealey and Myers 2000, p. 108)

4.2.2 Use Capital Asset Pricing Model

Because of these arguments against the IRR, we prefer the method described in Section 3.4 above. That means using a model based on the Capital Asset Pricing Model (Kaplan 1990) like Thompson, Robbie and Wright (1992) did. In this way the MBO returns can be compared with the returns realized on comparable risky alternatives. This leads to a more objective measure of abnormal returns.

4.3 Data

To a large extent, the data used in this research are obtained from the Dutch based ABN-AMRO Bank. The ABN-AMRO provided us with a list of 34 Dutch MBOs in which the bank participated. All transactions were carried out in the Netherlands. Since one buy-out lacked some essential data, in our research we used 33 out of 34 MBOs. The MBO participations of the ABN-AMRO Bank are quite diverse in size and form, as the following figures will indicate.

The buy-out prices of the MBOs vary between under 1 million euros to over 50 million euros, with an average of around 14 million euros. The participation of the ABN-AMRO in these MBOs lies between just over 0% up to 60%, with an average of around 25%. For 3 MBOs it is not exactly known for what percentage the ABN-AMRO Bank participated. If we divide the companies up in sectors, we get Services, Trade, Industrials, and Technology-Media-Telecom (TMT), the residual being Others. The sector which is best presented in this sample, is Industrials with 12 MBOs followed by TMT (7), see Table 4.1.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology, Media, Telecom</td>
<td>7</td>
</tr>
<tr>
<td>Trade</td>
<td>5</td>
</tr>
<tr>
<td>Industrials</td>
<td>12</td>
</tr>
<tr>
<td>Services</td>
<td>4</td>
</tr>
<tr>
<td>Others</td>
<td>5</td>
</tr>
</tbody>
</table>

*Table 4.1: 33 MBOs split into sectors*
The average period between the buy-out transaction and the exit date is 4.33 years. One MBO-participation lasted even for 13 years while a few others only lasted one year. The way in which these buy-outs exited also differs. 17 of these participations were exited by means of a sale, 3 were exited by means of an Initial Public Offering or IPO, 4 companies went bankrupt and 1 exited by purchasing its own stocks. Of the remaining 8 MBOs it is not known how they exited. The entry dates of the MBOs lie between 1983 and 1997, the exit dates between 1986 and 2000. Further data, like the data used for calculating market returns, sector index-returns and -betas and risk-free rates are obtained from Datastream.

4.4 Methodology
Unfortunately, the available data do not contain debt figures and therefore it was not possible to calculate XR\textsubscript{1} and XR\textsubscript{2} (see formulas 3.1 and 3.3 as defined in Section 3.4.1): the two measures of excess return on total capital used by the British researchers.

4.4.1 Uniform equity betas of unity
As observed in Section 4.3, only 3 of the 33 MBOs under investigation have been exited by means of an IPO: a flotation on the stock exchange. Furthermore, the post-float equity betas of these MBOs are not available. Therefore, on the basis of the available data we can only calculate XR\textsubscript{4}:

\[
XR_4 = \frac{1 + (\text{Equity}_2 - \text{Equity}_1) / \text{Equity}_1}{1 + R_f + (R_m - R_f)}
\]

This performance measure calculates the excess return to equity generated between the MBO transaction (t\textsubscript{1}) and the exit date (t\textsubscript{2}) and recalculates it to a annual excess return measure. The formula makes the assumption of uniform equity betas of unity (beta = 1).

4.4.2 Betas unequal to one
However, it is also interesting to investigate how results would be if we assume betas to be unequal to 1. Therefore we also applied the following formula to our data:
1 + (Equity2* – Equity1) / Equity1

XR_s = ------------------------------------------ - 1

1 + R_f + \beta_n (R_m - R_f)

where all parameters are the same as in formula 3.5 and:

\beta_n = the equity beta; n can have the values –0.5; 0.5; 1.5; 2 and 3

One reason for assuming that in reality betas are higher than 1 is the increased leverage involved in MBOs. Increased leverage of a company usually means an increase in its risk profile, for instance as a result of a greater chance of insolvency or even bankruptcy due to the inability of making periodical interest payments and/or loan repayments. This may imply a higher beta for the equity of MBO firms. Assuming higher betas and consequently higher rates of return required by equity investors will result in tempering the mechanical effects of leverage. These mechanical effects may lead to inflated results in our measures of excess return.

We would like to observe that this extension of the model represented by formula 4.1 only changes the results in a linear way and merely aims to give more insight in how excess returns changes when other betas are assumed.

4.4.3 Sector differences

Besides looking at the whole sample at large, it may be interesting to investigate whether we observe performance differences between the individual sectors. Therefore, we use sector-betas in our formula. Sector betas were calculated by doing a straight least-squares regression:

R_{sector} = \alpha + \beta_s R_{market} + \varepsilon

where:

R_{sector} = monthly sector return (Datastream total return indices for selected Dutch sectors)

\alpha = intercept, rate of price change (percent per month)

\beta_s = sector beta

R_{market} = monthly market return using the “CBS koersindex” (a stock market index introduced by the Dutch Central Bureau for Statistics showing total returns
between 1982 and 2000, Datastream calculated)

\[ \varepsilon = \text{error term} \]

The indices used to calculate the sector returns were: D(utch) S(tocks) General Industrials index, DS Services index and DS Telecom-Media-Technology index. For the sector Trade we used a combination of different Datastream indices from which a tailor-made Trade index is composed.

The betas obtained by performing the regressions can be plugged into our formula for computing excess returns. Besides sector betas, sector betas plus and minus 1.96 and 2.58 times the standard error will be put in. In this way it is possible to construct a 95%- and 99%-confidence interval for the excess returns (assuming that the betas obtained are distributed in the normal way):

\[
XR_{6} = \frac{1 + (\text{Equity}_{2} - \text{Equity}_{1})}{\text{Equity}_{1}} - 1
\]

\[
= 1 + \text{R}_{f} + \beta_{s} (\text{R}_{m} - \text{R}_{f})
\]

where all parameters are the same as in formula 4.1 and:

\[ \beta_{s} = \text{sector betas and sector betas plus and minus 1.96 and 2.58 times the standard deviation respectively.} \]

4.5 Results

The results of this research will show whether or not these MBO-participations result in excess returns. As can be seen in the sections below, the results turn out to be quite positive. We shall discuss these results separately per formula.

4.5.1 Uniform equity betas of unity

The results of \( XR_{4} \) are shown in Table 4.2:

<table>
<thead>
<tr>
<th>Total (33)</th>
<th>45,41%</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMT (7)</td>
<td>-1,87%</td>
</tr>
<tr>
<td>Trade (5)</td>
<td>16,83%</td>
</tr>
<tr>
<td>Industrials/Manufacturing (12)</td>
<td>35,10%</td>
</tr>
<tr>
<td>Services (4)</td>
<td>239,60%</td>
</tr>
</tbody>
</table>
As can be seen, average annual excess return is no less than 45.41% for the whole group of 33 MBOs. This can be regarded as a very strong sign of excess returns. If we look more closely at the selected sectors we see that with 239.60% the Services sector performs extremely well. However, it should be taken into consideration that this category only exists of 4 MBOs and therefore one extremely good result can influence the outcome to a very large extent. For the Industrials/Manufacturing sector we obtain an excess return of 35.10%, but for the TMT sector a slightly negative abnormal return of -1.87%. The Trade sector shows an annual excess return of 16.83%.

### 4.5.2 Betas unequal to one

If we consider XR₅ where beta is -0.5; 0.5; 1; 1.5; 2 and 3 respectively, we see that the annual excess return on equity for the whole group (33 MBOs) varies between 61.19% when beta is -0.5 and 31.22% when beta is 3. So even if we assume beta to be three times as large as the market-beta ($βₘ = 1$), we still get a considerable excess return on equity! Except for (again) the TMT sector, all sectors show a positive annual excess return on equity for all equity betas. We can therefore say that increasing the beta of course lowers the excess return, but results remain fairly positive for all betas. For all results see Table 4.3.

<table>
<thead>
<tr>
<th>Beta:</th>
<th>-0.5</th>
<th>0.5</th>
<th>1</th>
<th>1.5</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (33)</td>
<td>61.19%</td>
<td>50.02%</td>
<td>45.41%</td>
<td>41.30%</td>
<td>37.61%</td>
<td>31.22%</td>
</tr>
<tr>
<td>TMT (7)</td>
<td>4.60%</td>
<td>0.09%</td>
<td>-1.87%</td>
<td>-3.67%</td>
<td>-5.32%</td>
<td>-8.29%</td>
</tr>
<tr>
<td>Trade (5)</td>
<td>24.13%</td>
<td>19.04%</td>
<td>16.83%</td>
<td>14.80%</td>
<td>12.93%</td>
<td>9.58%</td>
</tr>
<tr>
<td>Industrials (12)</td>
<td>46.24%</td>
<td>38.39%</td>
<td>35.10%</td>
<td>32.13%</td>
<td>29.44%</td>
<td>24.73%</td>
</tr>
<tr>
<td>Services (4)</td>
<td>300.10%</td>
<td>256.90%</td>
<td>239.60%</td>
<td>224.44%</td>
<td>211.05%</td>
<td>188.43%</td>
</tr>
<tr>
<td>Others (5)</td>
<td>22.24%</td>
<td>13.28%</td>
<td>9.56%</td>
<td>6.22%</td>
<td>3.22%</td>
<td>-1.99%</td>
</tr>
</tbody>
</table>

*Table 4.3: Results of XR₅: annual excess returns with betas unequal to one.*

### 4.5.3 Using sector betas

The sector betas obtained by performing regressions as formulated in formula 4.3 are depicted in Table 4.4. We omitted “Others” because this is not a separate sector but a collection of residual MBOs. Putting these betas in formula 4.3 probably gives us a more accurate
estimation of excess returns for the different sectors. Table 4.5 shows the results of this calculation using confidence intervals. TMT is the only sector that again shows negative abnormal returns for the whole confidence interval: from –1.86% (using the sector beta) to –2.50% for a 99% interval. For the other sectors, results are positive. Assuming a normal distribution and 99% confidence interval levels, excess returns are as follows: 16.98% for Trade (99%-interval: 17.63%-16.35%), 33.59% for Industrials (99%-interval: 34.90%-32.33%) and 243.37% for Services (99%-interval: 247.22%-239.64%).

<table>
<thead>
<tr>
<th>Sector</th>
<th>Lower 99% beta</th>
<th>Lower 95% beta</th>
<th>Regression-beta</th>
<th>Upper 95% beta</th>
<th>Upper 99% beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMT</td>
<td>0.82</td>
<td>0.86</td>
<td>1.00</td>
<td>1.13</td>
<td>1.17</td>
</tr>
<tr>
<td>Trade</td>
<td>0.81</td>
<td>0.85</td>
<td>0.97</td>
<td>1.08</td>
<td>1.12</td>
</tr>
<tr>
<td>Industrials</td>
<td>1.03</td>
<td>1.08</td>
<td>1.25</td>
<td>1.41</td>
<td>1.46</td>
</tr>
<tr>
<td>Services</td>
<td>0.77</td>
<td>0.80</td>
<td>0.89</td>
<td>0.97</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table 4.4: Sector betas and confidence intervals

<table>
<thead>
<tr>
<th>Sector</th>
<th>Lower bound (99%)</th>
<th>Lower bound (95%)</th>
<th>Sector beta Excess return</th>
<th>Upper bound (95%)</th>
<th>Upper bound (99%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TMT</td>
<td>-1.19%</td>
<td>-1.36%</td>
<td>-1.86%</td>
<td>-2.35%</td>
<td>-2.50%</td>
</tr>
<tr>
<td>Trade</td>
<td>17.63%</td>
<td>17.47%</td>
<td>16.98%</td>
<td>16.50%</td>
<td>16.35%</td>
</tr>
<tr>
<td>Industrials</td>
<td>34.90%</td>
<td>34.58%</td>
<td>33.59%</td>
<td>32.63%</td>
<td>32.33%</td>
</tr>
<tr>
<td>Services</td>
<td>247.22%</td>
<td>246.27%</td>
<td>243.37%</td>
<td>240.53%</td>
<td>239.64%</td>
</tr>
</tbody>
</table>

Table 4.5: XR₅, Excess sector returns

4.6 Conclusions

In order to answer the question whether investments in MBOs result in excess returns we based our research on a model also used by Thompson, Robbie and Wright (1992) in their research on buy-outs in the United Kingdom. For the UK these researchers found ample evidence for an affirmative answer to this question.

We preferred to apply their CAPM based model instead of using an alternative measure like the Internal Rate of Return (IRR). Although the IRR is widely used by many (investment) banks and venture capitalists, it has too many drawbacks as demonstrated in Section 4.2.1 above.
Starting from data on 33 Dutch MBO participations of the ABN-AMRO Bank, our research project shows clear results. For uniform equity betas of unity (beta = 1), we found an average annual excess return (XR₄) of no less than 45.41%: 15% higher than our British colleagues found in their research based on 31 UK MBOs discussed in Chapter 3. Even when, in Section 4.5.2, a higher beta was assumed (up to and including a beta of 3) the excess return was still more than 30% for the whole group of 33 MBOs.

Next, we divided our MBO sample into subcategories to see whether we would observe sector differences in the results. Although we did discover sector differences, we should keep in mind that the subcategories include only a small number of MBOs. However, noteworthy is the fact that the TMT sector shows a negative abnormal return for a beta of 1 up to and including a beta of 3. This is understandable if one knows that 3 out of the 7 MBOs in this category went bankrupt. Due to two extremely positive MBO transactions, the Services sector shows the best results: an average annual excess return of 239.60%, for beta = 1.

In Section 4.5.3 we tried to produce better estimates for sector excess returns by using sector betas in our formula and by applying a 99% confidence interval to it. Again the TMT sector shows highly negative excess returns for the whole interval, whereas all other sectors show positive excess returns. A possible explanation for the underperformance of the TMT sector may be its unsuitability for MBO transactions. Probably, TMT is not a stable sector where a steady stream of cash flows is generated to make interest payments and/or loan repayments.

Apart from the TMT sector, we are able to give an affirmative answer to the central question in this paper. Investments in Dutch MBOs in other sectors than TMT turn out to result in excess returns. We can therefore conclude that generally MBOs are attractive from a risk-return perspective.
5 Conclusions

As discussed in our introductory Chapter 1, we intend to answer the following question: **Do investments in Dutch Management Buy-Outs result in excess returns?** There are several other theories that explain the popularity and the rationale of MBOs. We discussed these theories in Chapter 2.

In Chapter 3, we looked into two publications trying to explain the upward trend in MBO numbers from attractive risk-return perspectives. The publications we referred to are an article published by British researchers and a paper presented by a combined British-Dutch research team. To see whether excess returns can be achieved by investing in MBOs, it is possible to use rates of return achieved in exited buy-outs and to compare this evidence with the performance of the market as a whole. This is what the British researchers did starting from 31 UK MBOs. A prerequisite for applying this method is that sufficient reliable data are available. Unfortunately, in the Netherlands these data are not available. Therefore, the British-Dutch research team had to find other methods to analyze their sample of Dutch MBOs. Despite the different approaches, both publications found evidence for the attractiveness of MBOs from a risk-return perspective.

In Chapter 4 we tried to apply the model used by the British researchers starting from data made available by the Dutch based ABN-AMRO Bank. As we have seen in this chapter, the answer to the question whether investments in Dutch Management Buy-Outs result in excess returns can be a simple yes. Considering several possible betas, excess returns varied from 45.41% (uniform equity beta of unity) to 31.22% (equity beta = 3) for the whole sample of 33 MBOs. In order to make a distinction between several sectors I calculated sector-betas. Putting these betas into the formula resulted in specific outcomes for the several sectors. With 99%-confidence, all sectors showed positive abnormal returns, except for the sector TMT that showed a minor negative abnormal return. These sector-results must be treated with cautiousness however, because the number of MBOs in each sector is too small to draw clear conclusions. From this empirical research we conclude that MBOs are attractive from a risk-return perspective. This result is in line with expectations derived from existing literature.

Questions that remain for further research are: does TMT (or other sectors) really perform worse/better than other sectors? And besides excess return on equity, do we also find excess return on total capital in the Netherlands?
References


• Dagblad De Limburger, Niets zo Leuk als een Eigen Tokootje Runnen, December 21, 2001.


