

VALUATION OF TAKEOVERS

Magnus Bild

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VALUATION OF TAKEOVERS



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Preface

This report is a result of a research project carried out at the department of Accounting and Managerial Finance at the Economic Research Institute (EFI) at the Stockholm School of Economics.

This volume is submitted as a doctor's thesis at the Stockholm School of Economics.

The Institute is grateful for the financial support provided by Stiftelsen Bankforskningsinstitutet, KPMG Bohlins, Per V A Hanners stiftelse, and Tore Browaldhs stiftelse.

As usual at the Economic Research Institute, the author has been entirely free to conduct and present his research in his own ways as an expression of his own ideas.

Stockholm in April 1998

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Accounting and
Managerial Finance

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The inspiration for this thesis came in Paris during the spring of 1989 when, new to the world of doctoral studies, I attended a conference on takeovers. Some time later, the ideas and thoughts conceived in Paris took shape, and a research outline was born. I did not foresee then how long this research project would take, nor how many people I would be indebted to in the end.

First of all, I would like to thank Professor Lars Östman at the Stockholm School of Economics, who has been chairman of my thesis committee from the start. With infinite patience and the ability to see potential structures, Lars read and commented on all my drafts, pointed out the weaknesses, twisted the perspective around, and raised the level of abstraction. Without his unfailing support, this thesis would never have been completed.

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The collage on the front page consists of headlines concerning takeovers from the *Financial Times*.

Maria De Liseo proofread the thesis and her suggestions have made my English more readable.

Finally, I am immensely grateful to my wife, Ulrica. Without her love, encouragement, patience and understanding this thesis would not have reached the printed format.

Despite the contributions made by all these people, deficiencies may still remain. If so, they are entirely my own.

Magnus Bild

Stockholm
April 1998

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1 Introduction

1.1 Background

The phenomenon of corporate acquisition, where one company takes over the operations of another company, has become a frequent feature of business.¹ During the period 1971-1988, almost 12,000 Swedish companies were taken over, involving more than 1.25 million employees in the acquired companies, a number corresponding to almost 40 per cent of the labour force in the Swedish commercial sector at that time.²

Due to the frequency and size of corporate acquisitions, they have potentially considerable implications, positive or negative, for the companies involved and their stakeholders. The owners of the merging parties may experience changes in wealth, the managers of the companies involved might change positions as the companies are integrated³, the number of employees might be reduced in order to extract the merger gains, the original customers and suppliers may find their negotiation power weakened, the creditors can be exposed to a different risk, and for particular municipalities the general conditions may change as specific production units are enlarged or reduced.

1 The terms corporate acquisition, takeover and merger are used interchangeably in this study, although they have precise connotations in certain contexts (Sudarsanam, 1995).

2 The statistics are derived from the reports of The Swedish Competition Authority, which, as one of its responsibilities, monitors merger activity in Sweden, and SCB, The Swedish Bureau of Statistics. The Swedish Competition Authority presented data on all acquisitions until 1988. Thereafter, data was only provided for the larger takeovers, which explains why the statistics do not extend beyond 1988. No statistics have been published since 1990.

³ See Firth (1991) and Franks and Mayer (1994) for a discussion of this matter.

In these circumstances, it is not surprising that the outcome of corporate acquisitions has long been the focus of considerable attention in academic literature. Typical questions in this context are, and have been, 'Are corporate acquisitions successful?' and 'Which takeovers are successful and which are failures?'

There is a generally accepted theoretical framework for how investments, including corporate acquisitions, should be regarded, and their consequences assessed and evaluated. It is based on the theory of capital, which emphasises the value implications for the owner, and according to which value is constituted by the cash flows that the owner of a company can be expected to receive during his/her period of possession. By assuming that the value of a firm is equal to the sum of the individual values of its investment projects, the value implications of a particular investment can be assessed isolated from those of other investments undertaken by the firm. Hence, the theoretical approach manifests an incremental assessment, where the focal items are incremental cash flows resulting from the takeover decision. They are transformed to a present value by a discount rate, which takes into consideration the risk of the incremental cash flows and the time value of money. The ultimate decision criterion is that the present value of the incremental cash flows should exceed the purchase price for the target company. The procedure of valuing investment opportunities on the basis of their incremental cash flows is applicable *ex ante* as well as *ex post*, for example in a situation requiring a comparison between the actual outcome and the estimates.

The theoretical approach is fundamental for the logic of practical valuation models that are based on cash flows. These models can differ in terms of their detailed procedures; while some calculate the equity value directly (henceforth referred to as the 'equity approach' to corporate valuation), others estimate the equity value indirectly (henceforth referred to as the 'entity approach' to corporate valuation).⁴ These two kinds of models apply different cash flow definitions. In the equity approach, the relevant component is the cash flow that is available to the owner, whereas in the entity approach, the focal item is the company's cash flow before transactions with

⁴ The terms 'equity' and 'entity' are used by among others Copeland et al (1995).

its capital providers. An application of the entity approach is provided by Copeland et al (1995). It has popularly been referred to as the 'McKinsey model', and has attracted considerable attention. The important similarity that must be emphasised, however, is that these models, although different on a detailed level, are closely related to each other and to the theoretical framework in that they base their logic on discounting expected incremental cash flows. Besides being fundamental to the cash-oriented valuation models, the theoretical framework for company valuation is also essential for valuation models that use, for example, the accounting concept of income, since their general consistency with the theoretical valuation framework is an important factor when their quality is assessed.

A prerequisite for the theoretical framework, and for the practical valuation models that are based on it, is that the incremental cash flows associated with a particular decision can be separated from the receipts and payments associated with other decisions (Gold, 1976; Segelod, 1995). The literature on capital budgeting has recognised this issue, and in general terms, has discussed situations where separation problems may impede an application of the proposed valuation models. However, the question does not seem to have been elaborated empirically (Johansson, 1961; Honko, 1971; Hemmingsen, 1973; Neale and Holmes, 1989; Segelod, 1995).

Still, empirical observations indirectly point at the presence of separation problems. In particular, some studies have reported that valuation models based on incremental cash flows appear to be most frequently used for capital appraisal purposes *ex ante*, but that they are proportionately less common in a postaudit setting, where calculations seem to be made in the format of accounting ratios for the entire company, if, that is, such assessments are performed at all (Ingham et al, 1992). Taken together, the literature on capital budgeting points at the importance of separation problems. In some situations, their presence makes it reasonably troublesome to apply valuation models founded on incremental cash flows, and consequently, it is difficult to follow an investment decision in an incremental format throughout the valuation process, from capital appraisal to postaudit. In these circumstances, it is not surprising that some studies have observed the role played by accounting ratios that relate to the entire company. By using such ratios, the separation issue is eliminated as an explicit problem, since the

objective no longer is to follow particular investments isolated from each other, but rather to observe their composite development at the company level. Assuredly, accounting has more complex roles than serving as a valuation tool, although it is frequently used for that purpose. Hence, its relation to the theory of capital is essential.

The accrual principle is essential for accounting logic, and historical cost accounting is the dominating valuation procedure. The relation between the income and value concepts of accounting on the one hand, and its corresponding concepts in the theory of capital on the other, has attracted considerable attention in the literature. Based on simplified models of investments, conclusions have been presented concerning the situations in which differences between the two approaches are either small or considerable (Harcourt, 1965; Solomon, 1966; Kay, 1976).

It can consequently be established that the complex of problems discussed above has not been empirically elaborated in the literature. This is especially true with regard to the postmerger setting. In this respect, a practical application of a valuation model based on incremental cash flows would make a contribution by elucidating to what extent and in what situations the theoretical approach is troublesome to adopt *ex post*. Further, it would provide a description of the character of the separation problems. Within the framework of such a study, a second contribution can be made through empirical analyses of the postmerger development of the cash flows that constitute value according to the theoretical framework. The characteristics of the incremental cash flows have an impact on the present value of an investment decision, and hence on the judgement of its attractiveness, inasmuch as the present value increases, *ceteris paribus*, the larger the incremental cash flows, the earlier they emerge, and the less risky they are. Finally, yet another empirical contribution can be made by linking the observed incremental cash flows to the incremental accounting income during the postmerger period, a procedure that would add to the discussion on the relation between measures founded on the theory of capital and those based on accounting theory. The valuation of goodwill is of particular relevance in this context.

This background and complex of problems relates to corporate valuation in practice. However, it is equally relevant for the design and interpretation of research studies regarding the outcome of corporate acquisitions and hence for the two typical research questions posed at the beginning of this section: 'Are corporate acquisitions successful?' and 'Which takeovers are successful and which are failures?'

In the literature on takeovers, the theoretical approach to corporate valuation is described as the ideal research method (Halpern, 1983; Mueller, 1987), but it does not seem to have been adopted empirically. The issue of separation is certainly one explanation for this, but in a research context other reasons can also be discerned. These include difficulties in accessing the necessary internal company data, a circumstance that impedes statistical inferences regarding the success or failure of takeovers. Previous studies have instead predominantly used aggregated data relating to the entire company, and by comparing merging samples that have experienced takeovers and control samples that normally have not, they have attempted to distinguish the incremental effects of corporate acquisitions.

The studies fall into three main groups, which can be referred to as the market studies, the accounting studies, and the interview studies. The market studies have observed the stock market's reaction to a takeover announcement, and via conventional assumptions regarding the stock market's insight in a company, they have presented conclusions on the expected outcome of takeovers.⁵ The accounting studies have usually founded their conclusions on the difference in consolidated postmerger profitability between the merging sample and the control sample.⁶ The interview studies have focused on the acquiring and acquired managers' opinions concerning the success or failure of acquisitions that they have experienced.⁷

⁵ See, for instance, Franks et al (1977), Eckbo (1983), Dodds and Quek (1985), or Sudarshanam et al (1996).

⁶ See, for instance, Meeks (1977), Mueller (1980), Cosh et al (1980), or Kumar (1984). For research that has used consolidated cash return, see Healey et al (1992), or Manson et al (1994).

⁷ See, for instance, Kitching (1973) or Hunt et al (1987).

The first purpose has a dual function inasmuch as it is both an independent purpose, and a fundament for the elaboration of the second purpose, which is:

to analyse the knowledge concerning the outcome of corporate acquisitions by combining a comprehensive survey of previous research with the observations originating from the first purpose of this thesis.

1.3 Organisation of the thesis

This study is divided in three parts. Part one relates to the first purpose, and consists of three chapters. In the second chapter I present the theoretical framework for the empirical study, the delimitations applied and the particular empirical questions that are related to the first purpose. Further, the methodology of the empirical study is outlined and discussed. Chapter 3 comprises a presentation of the takeover cases, and in chapter 4, I analyse the findings that are related to the empirical questions and present the empirical conclusions regarding the first purpose.

Part two elaborates the second purpose and surveys earlier research on the outcome of corporate acquisitions. Part two consists of chapter 5, where I review studies that have used accounting data, and chapter 6 which comprises studies that have used market or interview data as the fundament for conclusions regarding the success or failure of takeovers.

In part three, I discuss the relation between measures based on the theory of capital on the one hand, and measures based on accounting on the other hand, with reference partly to the conclusions regarding their application in a practical valuation context, partly to the conclusions concerning their implications for research studies on the outcome of corporate acquisitions.

Part one

Part one comprises the first purpose of this thesis. It elaborates empirically the relation between measures based on the theory of capital on the one hand, and measures based on accounting on the other hand in a practical corporate valuation setting.

Part one is divided into three chapters. Chapter 2 contains the theoretical framework for the empirical study, the applied delimitations and the particular empirical questions that relate to the first purpose. Further, the methodology of the empirical study is outlined and discussed. Chapter 3 comprises a presentation of the investigated takeover cases, and in chapter 4, the findings regarding the empirical questions are analysed and the empirical conclusions regarding the first purpose are presented.

2 The methodology of the empirical study

In this chapter, I present and discuss the methodology that underlies my empirical study of incremental cash flows that are associated with corporate acquisitions. The chapter is divided into five sections. In section 2.1, the theoretical framework of the empirical study is presented. In section 2.2, I delimit the research area and formulate four empirical questions. In section 2.3, some essential concepts for elaborating these questions are defined. Section 2.4 is devoted to the methodology and describes the more detailed phases of work that follow from it. In section 2.5, some critical aspects of the applied methodological design are discussed in the light of the first purpose.

2.1 Framework

Through an acquisition, one company (the acquirer) obtains control over another company's (the target) operations, either directly, through a purchase of the target's assets, or indirectly, through an acquisition of its shares. A takeover is the most far-reaching alternative for expansion within a company's set of growth opportunities, which can be described as a continuum ranging from organic growth to takeover. Between these two extremes, alternative forms of expansion exist, such as agreements of co-op-

eration, strategic alliances, minority ownership and joint ventures (Olve, 1988).

The motives for takeovers have been the subject of several studies, theoretical as well as empirical (see, for instance, Walter and Barney, 1990). The motives that have been proposed are different, and relate to the acquirer's corporate strategy objectives (Sudarsanam, 1995). In the theory of capital, it is asserted that the prime motive for acquisitions ought to be strictly financial, that is, to create value for the shareholders through a rational investment decision (Wallsten, 1985). The other proposed motives are either regarded as compatible with the theory of capital, and as such, subordinated means for attaining the prime motive, or as inconsistent with the value creation motive (Halpern, 1983).

The value concept of the theory of capital is hence an essential point of departure for the assessment of takeovers. It is a subjective abstraction derived from a utility line of argument, where consumption is regarded as a proxy for utility. As cash (in many situations) is a prerequisite for consumption, the capital value is based on the cash flows that the owner can be expected to receive during his/her period of possession (Hicks, 1946). These expected future cash flows are discounted by a cost of capital to a present value, a procedure which takes into consideration the eventuality that the cash flows might be associated with risk, and the fact that a cash flow in the near future is worth more, *ceteris paribus*, than a distant receipt.¹

The concepts of the theory of capital are fundamental for both the equity and entity approach to corporate valuation. The most common version of the equity approach is the (so-called) dividend model, henceforth referred to as the *DIV model*. There, the net dividends (*DIV*), that is, dividends less new issues of equity, that the equity owners are expected to receive in future periods of time (t) are transformed to a present value of equity, $V(E)$, by a discount rate (r_E) that mirrors the owners' opportunity cost of capital. The *DIV model* is often regarded as an appropriate benchmark in corporate valuation (Skogsvik, 1995). It is written in mathematical form in expression

¹ Early and significant contributions to the theory of capital were made by, among others, Fisher (1906), Lindahl (1939) and Hicks (1946).

[2.1] below. The notation is based on the logic that the capital value is estimated at the beginning of year zero (0) and that the future cash flows are to be received at the end of each year.² It is further assumed that the discount rate is constant, that is, that the term structure is flat.³

$$V(E)_0 = \sum_{t=1}^{\infty} \frac{DIV_t}{(1+r_E)^t} \quad [2.1]$$

Some authors have suggested an alternative specification of the valuation model. They apply a more extensive definition of *DIV* by letting it represent the cash flows that are expected to be available to the equity owners. This approach can be labelled the *FTE model*. *FTE* is an abbreviation for “flow to equity” and is defined as the company’s cash flow after changes in working capital, investments, and financing payments related to financial debts. The FTE model is formalised in expression [2.2].

$$V(E)_0 = \sum_{t=1}^{\infty} \frac{FTE_t}{(1+r_E)^t} \quad [2.2]$$

The FTE model is equivalent to the DIV model, that is, they result in the same equity value, provided that the cash flows that are not distributed to the equity owners yield a return that is equal to the cost of equity (r_E).

In particular situations it might be interesting to assess the value creation periodically, through a division of the horizon into shorter parts, and derive an income concept from expression [2.1]. This notion of income can be defined as the maximum amount of cash that can be consumed during a

² It can be noted that the present value in expression [2.1] is based on an infinite horizon. An alternative approach is to define the value of equity as the present value of the net dividends to the owner during a limited period of time, plus a terminal value at the end of that period. However, provided that the terminal value is a function of the net dividends beyond the applied horizon, the value of equity according to the alternative approach can obviously be shown to be mathematically equal to the one formalised in expression [2.1].

³ The numerator is often written as $E(D\tilde{I}V)$ to signify that the variable *DIV* is stochastic and that the numerator represents an expected value. For reasons of convenience, I will throughout this thesis simplify all expressions to the format given in expression [2.1].

period of time without eroding the opening capital value (Hicks, 1946). An income concept of this kind has been described as ‘economic’, ‘ideal’, ‘true’ and ‘theoretical’ in the literature; I have chosen to use the term ‘economic income’. By analogy, the present value in expression [2.1] will sometimes be referred to as ‘economic value’. The ratio of economic income and economic value is labelled economic return, and is equal to the cost of capital given that no unexpected gains or losses occur during the period.⁴

In terms of the value concept of expression [2.1], a takeover can be assumed to create value for the shareholders in two principal ways, either through an addition to the cash flows that the shareholders are expected to receive, or through a reduction of the cost of capital. The first source of value creation could arise, for example, from economies of scale or scope for an industrial company. The second source of value creation could emerge if the takeover reduces the risk, provided that the shareholders cannot accomplish a similar risk-reducing diversification by themselves. Otherwise, an acquisition does not, according to financial theory, create value for the shareholders through a reduction of the cost of capital. In this context, it is recognised that a takeover that reduces the probability of default would theoretically increase the wealth of the shareholders (Halpern, 1983).

In the entity approach to corporate valuation, the equity value is calculated indirectly as the difference between the market value of the firm’s capital employed, $V(CE)$, and the market value of the company’s debts and other non-equity securities, $V(D)$. Capital employed is defined as the difference between the value of total assets and the value of operating liabilities, that is, operating short-term and long-term liabilities. $V(CE)$ is derived by discounting the expected future free cash flows (FCF) that are available to the capital providers by the average cost of capital (r_{Wacc}). This approach can be labelled the *FCF model*. It is written in mathematical form in expression [2.3] below.

⁴ Lee (1985) refers to any unexpected items as ‘windfall gains or losses’ and adds them to the economic income of the particular period. His presentation is based on Lindahl (1939).

$$V(E)_0 = \sum_{t=1}^{\infty} \frac{FCF_t}{(1+r_{Wacc})^t} - V(D)_0 \quad [2.3]$$

FCF can be described as the cash flows that would have been available to the equity owners if the company had not carried any financial loans. It is defined according to table 2.1 below.

Table 2.1 The definition of FCF

Income after depreciation
+ financial revenues
Operating income
- standard tax rate on operating income
+ depreciation
± changes in working capital (except cash and short term financial debts)
- investments in operating assets
Free cash flow (FCF)

One important distinction in relation to table 2.1 is between actual investments and required investments, that is, the size of investments that is needed to maintain a prescribed level of future cash flows. In case the actual investments are lower than the required investments, it can be argued that the free cash flows observed are in reality unavailable to the financiers, since the capacity to generate future cash flows is decreased. In short, the problem can be overcome either by entering lower future cash flows, or by replacing the actual investment figures with the required investment figures.

The discount rate (r_{Wacc}) represents the average cost of capital after tax and is calculated as in expression [2.4]. The cost of equity (r_E) is the same as in expressions [2.1] and [2.2]. The cost before tax of financial loans is written as r_D , and the corporate tax rate as τ_c .

$$r_{Wacc} = r_E \cdot \frac{V(E)_0}{V(CE)_0} + r_D \cdot (1 - \tau_c) \cdot \frac{V(D)_0}{V(CE)_0} \quad [2.4]$$

The two approaches to corporate valuation are described in most in corporate finance textbooks, see for instance Damodaran (1994). They will give the same equity value provided that the future capital structure is constant in market value terms. However, if the capital structure is expected to vary, it is also reasonable to expect that r_E will change over time. Hence, both r_E and r_{Wacc} will have to be updated under such conditions. Furthermore, it is necessary to assume that the company dividend policy choice does not affect value in order for [2.1] to be equal to [2.2] and [2.3]. (Levin and Olsson, 1995).

As mentioned above, takeovers are regarded as a special kind of investment in the theory of capital (see, among others, Halpern, 1983; and Neale, 1989). The literature on capital budgeting comprises approaches for evaluating capital projects in accordance with this view. Through the assumption of ‘value-additivity’, implying that the value of a firm is equal to the sum of the individual values of its investment projects, the value implications of takeovers for the shareholders can be assessed by regarding a particular investment project isolated from other projects in the firm. Put differently, the net present value of an investment project, which emerges as the difference between the present value of its expected cash flows and the initial cash outlay for the investment, corresponds to the value creation from the shareholders’ perspective. The same procedures that were used in the corporate valuation context can be applied for capital budgeting purposes.

Three fundamental premises underlie the equity value that was set out in expressions [2.1] to [2.3]. The first requirement is that the consequences of a particular decision can be separated from those caused by other decisions. Secondly, that a reasonably accurate projection can be made of the time pattern of the expected future cash flows during the entire life of the investment, and thirdly that an estimate of the opportunity cost of funds during the life of the investment can be performed (Gold, 1976; Segelod, 1995).

The first premise, namely separation, concerns whether the effects of a particular investment decision can be demarcated as regards location, size and point in time. If this can be accomplished, it would be possible to *separate* the cash flows associated with a specific investment decision from the receipts and payments associated with other decisions. On the other hand, if it proved to be impossible to carry out the demarcation, the cash flows of the particular investment decision would be *non-separable*. The meaning of the separation idea, however, is not always easy to apply in a real situation. For example, a number of decisions might be inter-related; the later ones might be functions of the earlier ones, and would therefore not be considered without their accomplishment. In such a situation, the question is whether the effects of each individual decision are to be separated, or if the set of decisions should be treated jointly.

The separation issue has been recognised in the capital budgeting literature⁵ (Johansson, 1961; Honko, 1971; Hemmingsen, 1973; Neale and Holmes, 1990; Segelod, 1995). Johansson, although delimiting his study from these issues, mentioned the problem of interdependence between different investments and the difficulties in identifying the incremental cash flows for particular investments in integrated production processes. Honko pointed out that an investment easily blends with its environment and becomes part of an entirety where its incremental cash flows are troublesome to identify. Hemmingsen, in his discussion of the absence of postaudits of capital investments, established that it is impossible *ex post* to separate the cash flows of particular investments. Neale and Holmes, in their survey, found that firms experienced difficulties in disentangling the costs and benefits of an investment, but that the company representatives did not tend to focus on this problem. Segelod questioned whether the relevant cash flows can be isolated at all.

However, the issue of separation does not seem to have been elaborated thoroughly in the literature on capital budgeting. Although this is surprising in the light of the recognised importance of the problem, it is not unexpected due to the difficulties in accessing relevant data for an empirical study. The

⁵ Some scholars use the terms “disentanglement problem” or “interdependence problem” instead of separation.

mere fact that the researchers cited above have refrained from an issue that they have recognised as important, is a clear indication of the complexity of the issue.

The separation problem that was described above, and that could be labelled '*the demarcation aspect of separation*', is due to the demarcation of the effects of a particular decision from the effects of other decisions in the company. In this context, it must be noted that in a postaudit situation, other types of separation problems might arise, which could be referred to as '*the causality aspect of separation*'. They are not related to the logic of the capital budgeting approach, but potentially manifest in those situations where deviations between a postaudit and the ex ante estimate are to be analysed. In such situations, it might be difficult to separate the deviations resulting from actions taken by the company itself, from the deviations that were beyond its control, such as changes in the general business climate. Since studies of postaudits are relatively rare in the literature, comparisons between estimates and postaudits are also uncommon, and therefore the causality aspect of separation has hence not been subject to many thorough empirical analyses. The two aspects of separation are related to each other in that the deviations between estimates and postaudits cannot be meaningfully elaborated until the incremental cash flows have been clearly demarcated.

A critical issue as regards separation is whether the acquirer had a detailed and quantified takeover plan, whose consequences were possible to foresee. The presence of such a plan would mitigate the separation problems, since only effects that could have an impact on valuation and price would be considered. As a consequence, the separation problems ex ante would not be at hand. Furthermore, no problems would arise ex post, provided that the acquirer was able to observe deviations from expectations stated in the takeover plan.

However, previous research has reported that takeover plans do not always exist, or that they are often not thorough enough. This may be due to the time factor and to the need for secrecy. Decisions have to be made quickly, leaving little time for planning. In order to prevent information leakage, the seller cannot allow the acquirer to conduct a complete and detailed investigation. Consequently, the level of uncertainty about the postmerger period

can be considerable and lead to crude estimates of the future. Although experienced acquirers could be assumed to be familiar with takeover difficulties, and hence able to foresee them in their takeover plans, it seems reasonable to presume that separation problems are generally at hand during the postmerger period.

There are reasons to believe that the issue of separation is more relevant for corporate acquisitions than for other capital investments. At least this ought to be the case for acquisitions where synergies are expected to be extracted. In certain aspects such takeovers are more complex, and are more likely to have widespread effects than other investments, including also takeovers made by investment companies. This circumstance will probably have a negative impact on the possibility to separate the effects of corporate acquisitions in the way the theoretical valuation models presume, both *ex ante* when assessing the cash flow generation of a potential target and *ex post* when following up its performance in the postmerger period. This is indicated in Pohlman et al (1988), who found that the difficulty in accurately forecasting operative cash flows was more marked for expansion investments, among them takeovers, than for replacement investments. Further, it can be assumed that the separation problem is of growing importance in a complex business world with a substantial number of interdependent events and effects. However, like the literature on capital budgeting, the literature on corporate acquisitions sheds little light on the issue of separating incremental cash flows.

The second premise that underlies the equity value concerns the time pattern of the cash flows. It affects the attractiveness of an investment, in the sense that the outcome of an appraisal is dependent on when the cash flows appear. Obviously, the earlier the positive cash flows emerge, *ceteris paribus*, the higher the value of the project. In empirical studies, managers have been found to regard the definition and estimation of cash flows as the most troublesome and most important phase in the capital budgeting process (Gitman and Forrester, 1977; Pohlman et al, 1988). Yet, this complex of problems has received relatively little attention in the literature compared with, for instance, procedures for project selection.

The cash flow and its pattern is also important for the third premise. According to financial theory, the discount rate is dependent on the risk associated with the cash flows. The empirical literature on corporate acquisitions does not seem to have thoroughly investigated this issue. One contributing factor is likely to be the difficulties associated with obtaining relevant data. For instance, empirical measurements of the risk premium are not trivial.

In expressions [2.1] to [2.3], the equity value was defined on the basis of forecasted net dividends or free cash flows. It can likewise be derived by using accounting ratios, and also in this context it can be calculated both directly and indirectly. The direct procedure can be labelled the abnormal earnings model, henceforth referred to as the *AE model*. It is written in mathematical form in expression [2.5].⁶ There, the value of equity is defined as the sum of the book value of equity at the valuation date, $BV(E)_0$, and the present value of the expected future abnormal earnings (*AE*). The latter is derived by periodically multiplying the opening book value of equity by the difference between the accounting return on equity (*ROE*) and the equity owners' opportunity cost of capital (r_E). *ROE* is defined as the ratio between net income for a particular period and the book value of equity at the beginning of that period.

$$V(E)_0 = BV(E)_0 + \sum_{t=1}^{\infty} \frac{BV(E)_{t-1} \cdot (ROE_t - r_E)}{(1+r_E)^t} \quad [2.5]$$

One observation that can be made from expression [2.5] is that the market value of equity equals the book value for those companies where *ROE* is expected to correspond to the cost of equity during each future period of time. Another observation is that a takeover that leads to higher values of *ROE* in all future periods *ceteris paribus* increases the value of equity. Expression [2.5] is closely linked to expressions [2.1] and [2.2]. In fact, it has

⁶ See Skogsvik (1995) for a discussion of this approach.

been demonstrated that these three direct approaches to corporate valuation give the same value of equity, given certain conditions (Levin, 1998).⁷

The same equivalence in value can also be established for the indirect approach to corporate valuation. The FCF model will give the same equity value as expression [2.6] below (Levin, 1998). There, the value of equity is calculated as the difference between the market value of the firm's operations and the market value of its debts and other non-equity securities. The value of the firm's operations is defined as the sum of the book value of capital employed at the valuation date, $BV(CE)_0$, and the present value of the expected future economic value added (*EVA*).⁸ The latter is derived by periodically multiplying the opening book value of capital employed by the difference between the return on capital employed (*ROCE*) and the weighted average cost of capital (r_{Wacc}). *ROCE* is defined as the ratio between accounting income before financial expenses, but after standard corporate taxes, and the book value of capital employed at the beginning of that period. Capital employed is defined as the difference between total assets and operating liabilities, that is, operating short-term and long-term liabilities. This approach can be labelled the economic value added model, henceforth referred to as the *EVA model*.

$$V(E)_0 = BV(CE)_0 + \sum_{t=1}^{\infty} \frac{BV(CE)_{t-1} \cdot (ROCE_t - r_{Wacc})}{(1 + r_{Wacc})^t} - V(D)_0 \quad [2.6]$$

One observation that can be made from expression [2.6] is that the market value of the firm's operations equals the book value if *ROCE* is expected to correspond to the average cost of capital during each future period of time. Another observation is that a takeover that leads to higher *ROCE* in all future periods, *ceteris paribus*, will increase the value of equity.

In financial accounting reports, *ROCE* is often defined before corporate taxes. Expression [2.6] is applicable even in that context, since *ROCE* after

⁷ E.g. clean surplus accounting and dividend policy irrelevance.

⁸ It is recognised that *EVA* is a trademark in USA owned by Stern&Stewart.

tax is usually just a fraction of ROCE before tax. Hence, an increase in ROCE before tax will imply an increase in ROCE after tax. However, it must be recognised that this relation might not always be valid. For example, when the company has expenses that are not tax-deductible, and/or revenues that are not taxable, this relation does not apply.

ROE and ROCE illustrate the components that create or destroy equity value. It has to be recognised, however, that the value consequences as described by ROE or ROCE only provide a partial picture of value creation. An acquisition that results in an improved ROE in all future periods will, *ceteris paribus*, increase the value of equity. However, the takeover decision might increase the risk for the shareholders. This would cause the cost of equity to be adjusted upwards, and the equity value consequently to be reduced. Changes in ROCE should be interpreted analogously.

In a corporate valuation context, the accounting ratios are used differently than the measures derived from the theory of capital (Ingham et al, 1992). While the latter are formed on an incremental basis, the former focus on the development of the consolidated entity that emerges as a consequence of the takeover. In one sense it can be asserted that the separation issue is not an explicit problem when consolidated accounting ratios are used, since the objective then is no longer to follow particular investments on an individual basis, but rather to observe their composite development at the company level. However, it must be recognised that this could make individual investments considerably more difficult to follow.

The accounting consequences of a takeover are partly a function of the incremental cash flows that the acquisition generates; consequently, the time patterns of these cash flows are essential for the accounting return. In addition to this, the consolidated accounting outcome is a function of several accounting considerations, regarding such issues as the choice of a consolidation method, depreciation schedule for potential goodwill items, and the treatment of expected payments due to restructurings of the postmerger operations.

The dominant method for business combinations is the *purchase method*, in accounting standards as well as in practical situations⁹. It is based on the logic that in a takeover, the acquiring group is regarded as a going concern, while the target's operations are considered to be disrupted (Hendriksen, 1982, p. 495). Consequently, the amalgamation is seen as a prolongation of the acquiring group, rather than as a new entity being created through a takeover decision. The assets and debts of the acquiring entity are hence accounted for in the consolidated balance sheet at the book values they had in the acquirer's balance sheet, while the identifiable assets and debts of the target are entered at their fair value, which is decided by reference to the acquirer's intended use of these assets and debts.¹⁰ In case of a difference between the purchase price for the shares of the target, and the acquirer's stake in the fair value of the identifiable assets and debts of the acquiree, a goodwill item will be recognised in the consolidated balance sheet.

The alternative method for business combinations, the *pooling method*, is less common now than some decades ago. This is due to the restrictive conditions for its use that are prescribed by prevailing accounting standards.¹¹ The pooling method is based on the logic that both the acquirer's and the target's operations can be regarded as going concerns as the merger is accomplished, and hence a revaluation of the target's assets and debts is not performed. The notion of goodwill, therefore, is not an issue in relation to the pooling method.

The goodwill item that might arise from the use of the purchase method is, technically speaking, a residual amount arising from the fact that only a part of the purchase price for the target's shares can be attributed to identifiable assets and debts of the target. The more economic meaning of the goodwill item is that it represents an 'anticipation of future economic benefits' that are related to the takeover.¹² Several origins of these benefits have been

⁹ The discussion of different consolidation methods relates to so-called indirect acquisitions, where the acquirer buys the shares of the target.

¹⁰ The description of the purchase method is derived from the effective International Accounting Standard (IAS) 22.

¹¹ E.g. IAS 22, paragraph 16.

¹² The quotation refers to IAS 22, paragraph 41.

proposed, including synergies between different assets, the target's reputation, its excellence in research, and the quality of its management.

The recognition of a goodwill item at the effective date of the acquisition is one essential issue, its treatment in the following consolidated accounting reports is another. The traditional position has been that the advantages represented by the goodwill item will result in future cash flows, but that these cash flows will diminish over time. Consequently goodwill should be depreciated, normally on a straight-line basis over its useful life. Further, the effective IAS 22 prescribes that the 'unamortized balance of goodwill should be reviewed at each balance sheet date', on the basis of which it might be necessary to reduce the amount.

The above description expresses the current standard as it is presented in the effective IAS 22. It is not representative of all countries at all points of time. It should also be noted in this context that many companies have not complied with the effective standards, mainly because the depreciation of goodwill lowers their consolidated income during the postmerger period.

The accounting treatment of restructuring activities during the postmerger period also has an impact on the consolidated income. In this context, three alternative accounting procedures can be considered: the future restructurings are charged against the consolidated income as they are expected, or the restructurings influence the income statement as they occur, or the future restructurings could be estimated at the acquisition date and therefore a restructuring reserve appears in the initial consolidated balance sheet. The choice of procedure will affect the development of the consolidated income over time.

2.2 Delimitations and empirical questions

With the above framework as a starting-point, I formulate four empirical questions that take into consideration the different aspects of the intended contribution of this thesis that are comprised in the first purpose. In this

context, it is essential to recall that the first purpose has a dual function in that it is both an independent purpose, and a fundament for the elaboration of the second purpose. This has an impact on the formulations of the empirical questions.

An essential presumption in the theory of capital and in the capital budgeting approach to takeovers, concerns the separability of the incremental cash flows, an issue that is recognised in the literature but not empirically elaborated. The first aspect of the first purpose comprehends an empirically founded discussion of the practical usefulness of the capital budgeting approach in terms of describing to what extent and in what situations it is troublesome to separate the incremental cash flows of takeovers from the effects of other decisions taken by the companies involved. In this context, I delimit the study to the demarcation aspect of separation for two reasons. First, it is principally more interesting than the causality aspect, as it is directly linked to the logic behind the capital budgeting approach. Second, the causality aspect is more demanding as regards the character of the empirical material, since it requires that acquiring companies make detailed ex ante estimates with, for instance, explicit reference to the forecasted macro-economic development, and that the participating companies are willing to provide documentation concerning their capital budgeting process. In the light of previous research, thorough takeover plans and ex ante estimates cannot normally be expected to be found. Consequently, when separation issues are henceforth discussed, it should be understood that they implicitly refer to the demarcation aspect of separation. Given this background, I formulate the first empirical question within the scope of the first purpose as follows:

1. Which difficulties are at hand when the postmerger incremental cash flows of corporate acquisitions are to be separated from cash flows arising from other decisions taken by the companies involved?

The second aspect of the first purpose comprehends a detailed empirical description of postmerger incremental cash flows associated with a takeover. The characteristics of incremental cash flows have not been thoroughly described in the literature, and it would be a contribution to generate

empirical knowledge on them as regards their location, composition, relative size and temporal pattern.

Location refers to whether the merger effects occur in the target group or outside it. *Composition* refers to a division of incremental cash flows into different categories: operational, investment related and financial. It makes it possible to link the empirical observations explicitly to both the equity and entity approaches to corporate valuations. The *relative size* reflects the importance of various items of incremental cash flows. This aspect is necessary for establishing the *temporal pattern* of incremental cash flows, which influence how values are generated in economic as well as in accounting terms. For instance, the temporal pattern is of importance for a much debated accounting issue, namely the depreciation of goodwill.

Three potential temporal perspectives can be applied on this issue; one alternative is to study the expectations before the deal becomes effective; another alternative is to focus on some part of the postmerger period; a third alternative is to carry out an ex post analysis, a procedure which in its original sense cannot be accomplished until the acquired company has been divested. Both purposes of this study reflect the postmerger outcome of corporate acquisitions, and as a consequence, the actual postmerger development will receive more attention than the expectations that were at hand before the deal. The third alternative is for obvious reasons difficult to carry out. Consequently, the second alternative will be emphasised more than the other two.

I have chosen to delimit my analysis to a postacquisition period of five years, which in a practical valuation setting brings to the fore a need to estimate a terminal value at the horizon. Considering the issues that this thesis deals with, I believe that the complex of problems that might be associated with such an estimate is not fundamentally different than those aspects that are related to a study of incremental cash flows and their separability during a defined period of years. For this reason, I delimit the study from explicitly elaborating the issue of terminal values. Consequently, I will not be able to classify the takeovers I study empirically as successes or failures. Thus, I formulate the second empirical question within the scope of the first purpose as follows:

2. What are the characteristics of incremental cash flows that are associated with takeovers as regards their location, composition, relative size and temporal pattern?

The third aspect of the first purpose comprises an empirical analysis of the relation between incremental cash flows and incremental accounting income during the postmerger period. Both measures tie to the value of equity via expressions [2.1] to [2.6]. With consistent assumptions, a valuation based on incremental cash flows will give the same equity value as one based on incremental income. However, during a particular period, the income figure may deviate from the cash flow figure. Such differences can be of great importance in a business community where short-term ratios sometimes play a significant role. The relation between the measures is also interesting since previous empirical research has demonstrated that capital budgeting methods are mostly used in a valuation setting before a takeover decision is made, and replaced by aggregated accounting ratios ex post. In this context, the incremental accounting income is decisive for the consolidated accounting income and return.

3. What is the relation between incremental cash flows and incremental accounting income during the postmerger period?

Another aspect of the first purpose, which is not explicitly stated but yet of principal interest in this context, is how the buying companies treat incremental cash flows and their separability in the capital budgeting process, both before the deal becomes effective and during the postmerger period. An empirical description of this issue would contribute to the elaboration of the first purpose by offering a different perspective than the one behind the first three empirical questions above, since I use information from the companies' own assessments and also apply more of an ex ante perspective. I therefore formulate the fourth empirical question within the scope of the first purpose as follows:

4. How do buying companies treat incremental cash flows and their separability in their capital appraisals and postaudits of a takeover?

Finally, the study is delimited to domestic takeovers made by Swedish firms. There are three motives for this choice. First, foreign acquirers and targets operate under different conditions than domestic ones. For instance, foreign subsidiaries can be assumed to be more independent, which may impact the study of the separation problems. Second, an inclusion of foreign activities would introduce additional accounting issues, such as translating the accounts of foreign subsidiaries. Third, it is presumably more difficult to access relevant data on foreign companies.

2.3 Definitions

In relation to this research issue, several concepts need to be defined. The terms *takeover*, *corporate acquisition* and *merger* are used interchangeably. The parties that are directly involved in the takeover are the *legal acquirer* and the *legal target*, where the former obtains control over the latter's operations, either through a direct purchase of the individual assets, or through an acquisition of the shares, whereby the assets are indirectly taken over. In the latter case, the borderline for a takeover is passed when the legal acquirer secures voting power in the legal target.

The legal acquirer could have subsidiaries even before the accomplishment of the particular takeover, and the acquisition might have implications for them, in which case the term *acquiring group* will be used to denote that particular group of companies where the parent company is the legal acquirer. By analogy, a group governed by the legal target is referred to as the *target group*. These two concepts will be defined in more detail below, but before that, several other concepts need to be explained.

The date from which the legal acquirer consolidates (part of) the target group is referred to as the *acquisition date*, and the business combination that is then established is denoted the *combined entity*.¹³

The starting point for the empirical study is to regard takeover decisions in accordance with the theory of capital, which on a detailed level implies that conventional principles for capital budgeting will be adopted. The theory of capital states that the value of an asset, here a target company, is constituted by the future cash flows that the investor can be expected to receive during the period of possession provided that the takeover is accomplished. In this context, the investor is represented by the acquiring group. This choice of investor focus implies that what should be observed are the cash flows that from the acquiring group's perspective would not have occurred without the takeover.

However, it is difficult to know what would have happened without the takeover. A number of possible scenarios include the acquirer postponing the takeover, acquiring a different target, or expanding organically. In a research context, these alternatives are not possible to isolate and quantify. Therefore, I will compare the actual postmerger development to what would have happened if the acquirer had not undertaken any other decision to compensate for the takeover that did not occur.

The *incremental cash flows* from the acquiring group's perspective consist of all cash flows in the acquiring group and the target group that originate from the takeover decision, except for internal dispositions within the combined entity.¹⁴ The last criterion is important, since it means that the sum of the takeover's incremental cash flows is unaffected by internal transactions in any one direction, which is motivated by the fact that, for instance, group contributions that are transferred between the acquiring group and the target

¹³ The legal acquirer will not necessarily consolidate the entire target group. There might be situations where the acquiring group has an indirect stake which is less than 50 per cent of the voting power in one of the subsidiaries of the legal target.

¹⁴ There might be implications of a takeover at higher organisational levels than the one of the legal acquirer, in the event that it is a subsidiary in a larger group. Such effects are not included in my definition of incremental cash flows, since I decided to delimit the number of organisational levels subject to investigation.

group do not lead to a better present value of the takeover decision from the perspective of the acquiring group.¹⁵ A consequence of this definition of incremental cash flows is that they are attributed to the group where they were generated, and not to the group where they ended up. In this context, it is important to stress that incremental cash flows that can be observed for a particular period are not necessarily immediately available for the legal acquirer, since part of them can have been generated in the target group and still physically remain there. Such cash flows are included in the target group's incremental cash flows the period they emerge. This distinction is important in the light of the location dimension that was discussed in the context of the second empirical question.

The definition of incremental cash flows applied here deserves further attention. Due to the character of the present study, the selected definition of incremental cash flows needs to allow for interpretations in connection to both the equity and entity approaches. Consequently, my definition of incremental cash flows comprises all cash flows, operational as well as financial. This treatment is also consistent with some of the results in the market studies which demonstrate that the choice of financing for a particular takeover might affect the stock market's reaction to the bid.¹⁶

My definition of incremental cash flows does not generally comprise transactions where a receipt in one part of the combined entity corresponds to a payment elsewhere. However, these particular transactions, including group contributions and internal financial transactions, can signal important information about the financial effects of corporate acquisitions. Therefore, in certain contexts, I discuss their properties, although I do not include them in the incremental cash flow concept.

Some comments need to be made about internal trading. It has the same general characteristics as the above transactions in that the receipt in the selling company corresponds to the payment in the buying company. How-

¹⁵ This is true in situations where the tax benefits associated with group contributions are counter-balanced by equally large sacrifices, e.g. in terms of forfeited opportunities to create losses carried forward.

¹⁶ See section 6.1.4.

ever, for a particular year, receipt and payment may differ. This is the case when the entities involved in internal trading recognise the income in different years, which has an impact on taxation. To the extent that internal trading is not based on market prices, it leads to an unfair division of the profit between the parties, which calls for an adjustment of its effects. However, for deals that are settled on a market price basis, there is no need for an adjustment, and their implications will be reflected in the incremental cash flows of both the acquiring and the target group.

The definition of incremental cash flows associated with a takeover is built up of merger related cash flows that appear in the acquiring group and the target group. These entities, however, cannot be assumed to be constant over time; they change as companies enter and leave the groups, as illustrated in figures 2.1 and 2.2 below. The groups are portrayed in figure 2.1 immediately before the acquisition. Figure 2.2 describes the situation some years after the takeover, when both the legal acquirer (AJ) and the legal target (TJ) have each divested one subsidiary (a_2 and t_2), and purchased one new company (a_3 and t_3).

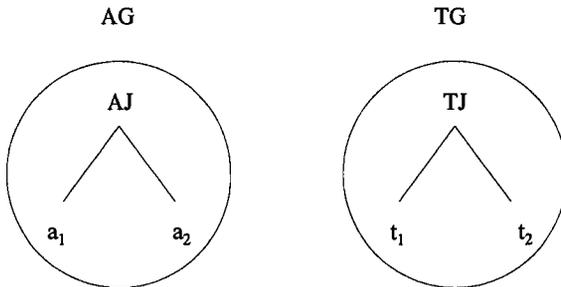


Figure 2.1 The acquiring group (AG) and the target group (TG) immediately before the acquisition. AJ denotes the legal acquirer and a_1 its subsidiaries. TJ denotes the legal target and t_1 its subsidiaries.

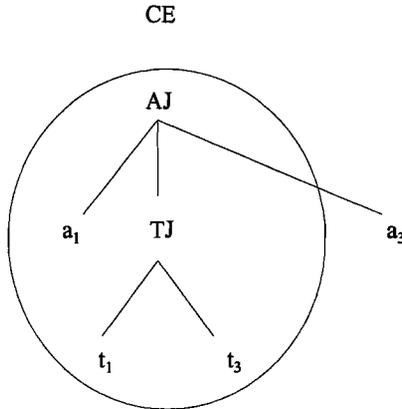


Figure 2.2 The combined entity (CE) some years after the acquisition. It should be observed that the composition of the acquiring group and the target group has changed compared to figure 2.1. AJ denotes the legal acquirer and a_i its subsidiaries. TJ denotes the legal target and t_i its subsidiaries

The changes in the groups' compositions bring to the fore the question of how subsequent reductions and enlargements of the groups should be regarded. The basic criterion is whether the changes were predictable when the price for the target was set and whether they were likely to affect that particular price.

The more exact definition of the *acquiring group* is that it initially consists of the legal acquirer and those companies it consolidated at the acquisition date (i.e. AJ, a_1 and a_2). However, later enlargements of the acquiring group, as more companies are added (i.e. a_3), are only taken into consideration if they meet the basic criterion described above. Companies that have left the acquiring group after the acquisition date (i.e. a_2), are included until the date when they are no longer consolidated by the legal acquirer. The more exact definition of the *target group* is that it initially consists of the legal target and those companies it consolidated at the acquisition date (i.e. TJ, t_1 and t_2). Companies that are added to the target group after that point in time (i.e. t_3) are included in the definition provided that they meet the basic criterion.

Companies that have left the target group after the acquisition date, are included until the date when they are no longer consolidated by the legal target (i.e. t_2).

When a company is moved within the combined entity, that is between the acquiring group and the target group or vice versa, the location of the incremental cash flows will be affected. In order to provide a fair view of where the takeover effects resided, I have chosen to regard the company in question as belonging to the group of its origin.

The considerations that underlie the definition of incremental cash flows are also applicable for the definition of the *incremental accounting income*. The difference between the concepts is due partly to a timing difference, and partly to the fact that they do not comprise the same items. The timing difference occurs when receipts and revenues, or payments and expenses, do not arise during the same period. The difference in items included is explained by goodwill and capital transactions with the firm's capital providers.

2.4 Methodological design

The methodological design of this study was considered in the light of the first purpose and the four empirical questions related to it. My aim of making empirical contributions on a rather detailed level, meant that a case study was the best way to achieve the first purpose. The sample consisted of seven domestic takeovers by Swedish firms, the incremental cash flows of which I followed over a maximum postmerger period of five years.¹⁷ In the following section, I explain how I selected the seven cases, and how I typically carried out the work associated with the four empirical questions. In

¹⁷ I am aware that the term 'sample' has a precise connotation in the discipline of statistics, but in this thesis, it refers to the set of companies that is included in a particular study, either in my own empirical one, or in the literature regarding the outcome of takeovers.

this context, it is also important to discuss several essential methodological considerations. This is done in section 2.5.

2.4.1 The selection process

My starting point in the selection process was to establish a list of acquisitions that was considered possible to study. In that context, I consulted the quarterly reports ‘Mergers and Acquisitions’ issued by The Swedish Competition Authority between 1983 and 1990.¹⁸ With the purpose of focusing on takeovers that had presumably involved rather complex postmerger processes, I decided to consider only those acquisitions that met the following requirements:

- The legal acquirer must, in the case of an indirect takeover, acquire at least 90 per cent of the shares in the legal target. A smaller share might impede the extraction of synergies that require entities to be moved around. This is because, according to the Swedish Companies’ Act, an ownership share below 90 per cent requires that all decisions must also benefit the minority owner.
- The acquisition must be of a strategically related nature since such takeovers probably include more restructurings and synergies than unrelated ones. In the latter case, the parties’ operations are more distant and the benefits of integration less apparent.
- Both the legal acquirer and the company whose shares it acquires must be Swedish, since domestic takeovers are probably more integrated than international acquisitions. In the latter case, the target group’s degrees of freedom is normally higher.
- The selected acquisitions must be made by different legal acquirers since that would probably enhance the likelihood of variations in the empirical observations.

¹⁸ The Swedish Competition Authority was previously known as the National Price and Cartel Office, and then National Price and Competition Board. Among other things, this authority monitors merger activity in Swedish industry.

In addition to the above requirements it was necessary to choose takeovers that could be assumed to make a five-year postmerger analysis possible. Consequently, I limited my search to takeovers that were accomplished between 1983 and 1989.

This procedure generated a list consisting of 74 acquisitions. The next step in the selection process was to exclude takeovers that for some reason would be less appropriate to study. In this context I received valuable advice from senior faculty members at the Stockholm School of Economics (SSE) who have extensive experience and substantial knowledge of Swedish industry.¹⁹ From the initial 74 acquisitions, 16 were excluded.²⁰ The remaining 58 were ranked based on the quality of the personal contacts that the senior fellows at the SSE had with the acquiring group.

The first company on the ranking list was contacted by mail. It received two letters, one written by one of the senior fellows in order to establish the first contact, and the other written by me in order to explain the objectives of the study and the conditions for the company's potential participation. The first company agreed to take part, and was used as a pilot study as regards the four empirical questions.

After the completion of the pilot study, the next seven firms were contacted using the same procedure that was applied for the pilot case. Of the seven, six agreed to participate, and one declined due to massive reorganisation

¹⁹ The faculty members who were active in this process were Professor Lars Östman, Professor emeritus Sven-Erik Johansson, and Doctor honoris causa Sten Wikander

²⁰ There were several reasons for this procedure, e.g. takeovers that were driven by governmental ambitions to find a new industrial structure (Avesta/Nyby-Uddeholm), acquisitions that were motivated by family reconstructions (Nynäs Petroleum/Nynäs Industri), purchases that were made by a Swedish holding company controlled by a foreign limited company (Outokumpu Svenska/Wirsbo Bruk), takeovers that was just one step among several others towards a new structure for the acquirer (Electrolux Autoliv/Stilindustri), acquisitions where the target company was later divested (Electrolux/Beijer Byggmaterial) and purchases where the target later on went bankrupt (CeWe/Thermia and Tetab). It may seem as a contradiction that two acquisitions made by companies in the Electrolux group were even considered in an early phase although I wanted a variety of legal acquirers. However, the legal acquirer was not the same company in these particular takeovers, and hence it would have been possible to study both provided, of course, that they had met my other requirements.

and a lack of key personnel that had experienced the takeover process. Consequently, the four empirical questions were elaborated on material comprising seven takeover cases.

2.4.2 Set-up and procedure

After receiving a positive answer to the letter described in the section above; I established telephone contact with the company representative during which four main issues were dealt with. First, the content of the letter was discussed and clarified, if necessary. Second, I asked the representative to send me legal and operative annual reports regarding the postmerger period for the entities that were affected by the acquisition. Third, a date for a meeting was scheduled. Fourth, I informed the representative that I would send him a list of semi-structured questions, and contact him some days before the meeting to explain anything that was unclear.²¹

During the period between the initial telephone conversation and the meeting, I studied the material that I had received from the company representative and made a list of such questions that I needed to discuss, in addition to the semi-structured ones that had already been mailed to the company.

The meeting typically took place at the offices of the legal acquirer. During the meeting, I took notes and tape-recorded our discussions. In addition to answering my questions, the company representative provided me with internal company postmerger data, and written memoranda regarding the usage of capital appraisals and postaudits. In one case, I also visited the office of the legal target, since the contact person believed that the managers of the target had knowledge that was essential for my study, an opinion that proved to be correct. I regarded this procedure as an exception motivated by the character of that particular deal, and it was not considered for the other six cases.

²¹ All company representatives were men.

In all the cases, several unsolved questions remained after the meeting, most of which could normally be sorted out through additional telephone calls, or by providing extra written material. For one case, however, three meetings were necessary before I considered the material to be sufficiently comprehensive.

In terms of the four empirical questions that underlie the first purpose, the detailed work proceeded along the following lines. The first three questions were treated together, and separate from the fourth one. The elaboration of the fourth question built on the internal material, both written and oral, that I was given access to. The elaboration of the first three questions started with a calculation of the part of the incremental cash flows that resided in the target group. The necessary information was gathered from the accounting reports, both legal and operative ones, and complementary information provided by the company representative. The cash flows of the target group were calculated indirectly, that is, they were derived from the target group's income statements and balance sheets. The related separation problems were listed continuously. This procedure was repeated for the incremental cash flows that resided in the acquiring group, in which context I was dependent on the information provided by the company representative. Finally, I studied the takeover's effects on the consolidated accounting reports.

The accuracy of the incremental cash flow figure that resulted from the above procedure, was checked in various ways. As regards the target group's annual cash flow, the figure was compared to the yearly change in the target group's liquid assets; concerning the cash flows in the acquiring group, the amounts were checked to see that they corresponded to receipts or payments.

2.5 Critical aspects of the methodological design

In this section, I discuss a number of aspects of the methodological design that are critical for judging whether I have the prerequisites for fulfilling the first purpose, and consequently, for how the conclusions of this study should be interpreted. The issues elaborated in sections 2.5.1 to 2.5.6, are not discussed in order of relative importance, but rather in an order that facilitates the discussion as a whole. The aspects of methodological design discussed below are:

- the appropriateness of the case study approach,
- the case selection procedure,
- the number of cases,
- the length of the postmerger period,
- the quality of the sources of information, and
- the procedure of separating incremental cash flows.

2.5.1 The appropriateness of the case study approach

Is the case study approach the most appropriate in the light of the first purpose and the related four empirical questions? It is possible to argue that the methodological design is more suitable for the first three empirical questions than it is to the fourth, in that the first three require empirical data based on internal company material and hence a case study approach, while answers to the last one would be obtained more suitably through a questionnaire or a large series of interviews.

The methodological design is based on my regarding the four empirical questions as being part of the same entirety, where the fulfilment of one particular question is less important than the fulfilment of the entire purpose. Consequently, I believe that there is good reason to use the same empirical material for all four questions. The case study approach is the most

suitable, since it is also compatible with the fourth empirical question, whereas a questionnaire or a large series of interviews are not suitable alternatives with regard to the first three empirical questions.

2.5.2 The case selection procedure

The sample is restricted to seven cases, and it is essential that each case contains a set of features that allows it to contribute to the elaboration of the first purpose. In this context, it may seem that I cannot fully determine the composition of the sample, partly because a study that uses internal company data is dependent on the firms' willingness to participate, partly because I cannot observe all relevant features of a particular acquisition *ex ante*. From an external observer's perspective, a number of relevant features are visible and possible to analyse in advance, but many more are hidden and undetectable from a distance. The visible features include, among other aspects, who bought whom, the acquired number of shares, the parties' nationality and the strategic relation between them. The hidden features comprise, for instance, the degree of postmerger integration and the presence of separability issues.

The fact that I could not be familiar with all characteristics of the cases *ex ante*, could be compensated for in a later phase of the research process by asking the representatives of the companies that agreed to participate whether the particular takeover contained the features that I was interested in. If it did not, I could have decided to withdraw that case from the study. Such a measure was never necessary, although I considered it in the one case that proved to be a direct takeover and not an indirect one. However, I judged that including also this particular takeover was compatible with the first purpose. In other words, I did have some control over the features comprised by the seven cases.

As I mentioned in section 2.4.1, I decided to concentrate on takeovers that were believed to contain complex postmerger processes, and that I compiled an initial list of potential cases on this basis. By studying the course of

events in complicated acquisitions, I would hopefully be able to generalise some observations to the set of takeovers characterised by less complicated postmerger processes. However, the search for complex postmerger processes implies an inherent conflict between the first two empirical questions: the elaboration of the first one, which concerns the separation issue, calls for complicated postmerger processes, while the proceedings regarding the second one, which concerns the characteristics of incremental cash flows, are to some extent dependent on favourable measurement conditions.

Several of the takeover cases that I studied represent industries whose activities are capital intensive, a fact that is important to bear in mind when analysing the observed patterns of incremental cash flows. In four of the seven cases, the parties belong to an industry, which to a larger extent than the other industries represented, can be assumed to be characterised by more cyclical cash flows, partly due to variations in world market prices of raw material, and partly due to the substantial but irregular level of investment expenditures.

2.5.3 The number of cases

An important issue to comment on is why the sample consists of seven cases rather than any other number. First, it must be pointed out that the sample size was not fixed before the selection process started, but was due to a number of other considerations.

Given the character of the first purpose, I intended from the very beginning to elaborate a rather limited number of cases in depth. After carrying out the pilot study and one more case, I realised that the research procedure was rather laborious and that the marginal effort of successively including one more case was unlikely to decline as it does in more statistically oriented studies. Based on that insight, I decided to expand the sample size as long as I believed that yet another case would contribute to the study.

It is evident that the sample size was decided on very subjective grounds, and that it is impossible to know whether a larger sample would have been an advantage. It is essential to remember that it probably would have been possible to include more takeovers, since 50 acquisitions on my ranking list had not been invited to participate. However, in the beginning of the selection process, these remaining companies were ranked lower than those finally included in the sample, due to less developed personal contacts. Hence, it is unclear what their contribution might have been.

2.5.4 The length of the postmerger period

The desire to observe the temporal pattern of incremental cash flows made it necessary to follow each takeover during a period of postmerger years. The difficulty in this context was to decide on the length of that period. On the one hand, it must be sufficiently long for the relevant and principally interesting cash flows to appear; on the other hand, the longer the period the greater the risk that the prospects of identifying these cash flows deteriorate. The length of the postmerger period was decided with reference to what seems to be the most frequent time period, that is, five years, in previous studies on the consolidated outcome of corporate acquisitions.²²

It may seem a hazardous task to follow incremental cash flows for a period as long as five years. However, it was possible for five of the seven cases, as will be apparent in chapter 3; further, the length of the period could not have been shortened without eliminating some of the principal empirical observations that will be presented in chapters 3 and 4. It must be remembered that several of the takeover cases represent industries whose activities are capital intensive, and whose fixed assets have a relatively long useful life. In this respect, a five-year analysis of the postmerger effects is rather short.

In a study such as this, where a limited period of time is employed for both the selection of cases and the analysis of the postmerger financial effects, it

²² See chapter 5.

is important to consider whether the years under study are somehow exceptional. The postmerger periods range from 1984 to 1992, during which time the general business climate in Sweden experienced a rise and a subsequent decline. This should be remembered when analysing the observed patterns of incremental cash flows.

2.5.5 The quality of the sources of information

One important issue concerns the quality of my sources of information, which consisted of legal annual reports, annual operative reports, internal memoranda, and oral information from the company representatives. The quality of these sources is essential for the elaboration of the four empirical questions and for the interpretation of the conclusions regarding the first purpose. I analyse this issue following a structure that is inspired by the discipline of history. Jarrick and Söderberg (1993) stress that each source must fulfil four basic requirements, namely contemporaneity, independence, unbiased, and reality.

The internal company material that was used in this study was either written or oral. The former comprised operative annual reports, internal memoranda, ex ante calculations and postaudits. The oral input came from the contact person in each company. Both sources were necessary in their own right, since they contributed in different ways to the information gathering. Further, the sources could support each other; in some situations the oral sources informed me about the existence of various internal written material, and in other situations the statements of the company representatives could be checked against what was available in writing.

Regarding the oral sources, I distinguish between “eye-witnesses”, that is, company representatives who took part in the acquisition process, and “recent interpreters”, that is, those who were not personally involved in the takeover. In four of the cases, the company representative could be classified as an eye-witness; in the remaining three, they were recent interpreters.

The *requirement of contemporaneity* means that, ideally, a particular source should have been established at the same time as the event it describes. In this sense, quick notes from the relevant period of time are more precious than descriptions given months or years later. An individual assessment must be made of each source in order to clarify in what ways it has been negatively affected by the time that has elapsed.

The requirement of contemporaneity is met by some of the sources, while others fail in this aspect. The written sources have a clear temporal connection to the event they describe. To a lesser extent, this is true for the verbal information provided by the eye-witnesses. While they took part in the acquisition process, they cannot naturally remember every detail. The verbal information given by the recent interpreters fails to meet the requirement of contemporaneity. They did not take part in the acquisition process, and what they could tell me beyond indisputable and well-documented facts, was based on other sources. In this context, one could question whether studying takeovers with a five-year postmerger record is optimal, compared with following the cases in real time. The latter would probably be possible to carry out, but the obvious drawback is that the length of the postmerger period cannot be guaranteed.

The *requirement of independence* means that the value of a source declines the more it borrows from another source. Obviously, the recent interpreters are dependent on what they have heard from the eye-witnesses and on what they have read in the written sources. The ranking order of my sources in connection to this criterion is the same as for the requirement of contemporaneity.

The *requirement of unbiased* means that a source, ideally, should be free from subjective judgements. One question, thus, is whether a company representative attempts to provide a version that puts himself and the company in a brighter light. Two things are especially important in this context. First, the nature of the selection process as such. While there is an apparent risk that only executives representing successful takeovers were willing to take part, I have not found any such tendencies. Seven of eight proposals to participate were accepted, and in the managers' opinions, some of the takeovers were successful and others were not. The selection process, therefore, can be

considered to be one of the strengths of this study. The fact that the respondents were interested in participating implies that they were motivated to contribute in a constructive way, which would make them more talkative, and more importantly, more inclined to provide relevant material.

Second, the credibility of the company representatives could be low if they were lying or hiding certain details. This risk ought to be small, since the executives had agreed to participate, and hence understood the character of the study; moreover I had assured them that all information provided would be treated anonymously. Nevertheless, I planned the study with this risk in mind. The questions were distributed some weeks in advance, allowing the respondent to find relevant material and/or someone else who could attend the interview. All verbal information was checked against written sources to the extent it was possible. Personal opinions were naturally offered, but, they have a value in themselves. I have found no indication of deliberate lies or hiding of information. However, some verbal information proved to be false, but that was typically related to minor details.

The quality of a particular meeting is dependent on the manager's willingness to answer the questions, and to assist in the gathering of additional information. In all cases, the person who received the initial letter had some connection to the senior fellows at the Stockholm School of Economics who had established the contact. In three cases, the respondent was the same person that received the offer to participate, and in the other four cases, the respondent was a person chosen by him. Willingness, therefore, was a common feature.

Connected to the question of unbiased, is the question of whether I have interpreted the answers correctly. To deal with the uncertainty in this respect, I took notes and tape-recorded each meeting, a procedure that reduces the risk of omitting any information given. Further, the answers I needed were normally short and quite often numeric, and therefore quite easy to document.

The written reports that I used were predominantly operative and not legal. Like the oral material, they could be subject to personal judgements and other imperfections. One example is the standard costs for central admini-

stration that in one particular case was allocated to the target company, possibly leading to a biased estimate of its incremental cash flows. However, it was regarded as beyond the scope of this study to control the objectivity of the operative reports; it should be recognised, therefore, that this might have an impact on the interpretation of my results.

To summarise, I believe that my sources meet the requirement of unbiased, since my primary source is written material and/or material regarded as uncontroversial. It would be reasonable to regard it as being relatively unbiased.

The *requirement of reality* means that an assertion that does not seem probable must be rejected. Two aspects in particular help to fulfil this requirement: firstly, the indisputable fact that the events discussed actually had happened, and secondly, the fact that the sources could be compared to each other.

Table 2.2 summarises the discussion regarding the quality of my sources. X means that a source meets a specific requirement, an empty cell means that it fails, and (X) that the source is somewhere in between the above two extremes.

Table 2.2 The extent to which the sources of this study meet the requirements formulated by Jarrick and Söderberg (1993)

Requirement	Oral sources		Written sources
	Eye-witnesses	Recent interpreters	
Contemporaneity	(X)		X
Independence	(X)		X
Unbias	(X)	(X)	(X)
Reality	X	X	X

Another aspect of the critical treatment of the sources concerns their relation to the four empirical questions. The first three questions mainly rely on written sources, while the elaboration of the fourth question, to a larger extent, is dependent on oral sources. This leads me to conclude that the quality of the sources is lower for the fourth question.

2.5.6 The procedure of separating incremental cash flows

It would be reasonable to question whether I have studied the relevant effects of takeover decisions. In section 2.1, it was mentioned that an analysis should take the acquirer's takeover plans into consideration, but that such plans could not always be expected to exist. Since I refrained from fully investigating these plans, I do not have complete information on which cash flows were expected. My approach starts at another end. I followed the postmerger development and analysed which of the events observed were due to the takeover decision. It is worth emphasising that where no takeover plans exist, this is the procedure to be followed.

Despite the efforts that have been taken to validate the data of the empirical study, it must be recognised that I might not have succeeded in finding all the incremental cash flows that were associated with a particular takeover. The definitions in section 2.3 were not always easy to apply. For instance, it proved difficult to clarify whether later enlargements of the target group were intended when the original deal was settled. In some cases, I was therefore forced to include subsequent acquisitions in the figures of the target group. One consequence of this is that enlargements of the acquiring and the target groups are treated differently. The inclusion of subsequent acquisitions by the target groups facilitates the observation of incremental cash flows, but provides a less rich body of material for the separation issue.

Further, the estimate of the incremental cash flows that resided in the acquiring group was dependent on the accuracy of the information provided by the company representatives. Finally, some takeover effects may not have been possible to logically separate. For example, the acquiring group

might have experienced postmerger changes in sales, without even considering the possibility that the takeover had caused that change. These aspects of incremental cash flows and their separability should be kept in mind when the conclusions of this study are evaluated.

3 Empirical observations regarding the first purpose

This chapter reports, for each takeover case, the empirical observations regarding the four empirical questions within the first purpose stated in section 2.2. Analyses of these observations, and conclusions based on them, will be presented in the next chapter.

The central concept of the first purpose is incremental cash flows. In section 2.3, I defined them as ‘all cash flows in the acquiring group and the target group that originate from the takeover decision, except for internal dispositions within the combined entity’. As one point of interest is where they were located, I discuss separately the incremental cash flows that occurred in the target group and in the acquiring group. It is important in this context to note that cash flows between the target group and the acquiring group are not included in their respective measure of incremental cash flows, since such transactions do not affect the present value of the takeover from the acquiring group’s perspective. Nevertheless, I describe these internal transactions in an individual section, since they indicate whether the target group contributed to, or burdened the acquiring group in a financial sense, through, for example, group contributions and dividends. As regards internal trading within the combined entity, its size will be discussed in relation to the incremental cash flows of the acquiring group.

A second point of interest regarding incremental cash flows is their composition. I present data concerning three different levels of the concept. The first level is linked to the FTE model for corporate valuation and includes

the incremental cash flows after financial transactions (FTE). The second level is related to the FCF model for corporate valuation and includes the incremental cash flows after investments (FCF). The third level represents the incremental cash flows from operations (CFO). While it does not explicitly relate to any valuation model, it is introduced in order to facilitate analyses of the postmerger development. For example the difference between the target group's CFO and FCF is informative as regards the pattern of the investment activities and to what extent they were self-financed. The degree of self-financing is defined as the ratio between CFO and investment expenditures. The exact definitions of the three levels of the incremental cash flow concept are provided in appendix 3.1.

A third point of interest is the relative size of incremental cash flows. I have chosen to express all cash items as percentages of the legal acquirer's acquisition cost for the legal target in order to facilitate comparisons between the characteristics of the different takeover cases. All cash flows are regarded from the perspective of the acquiring group, and hence positive and negative amounts should be interpreted accordingly.

A fourth point of interest is the temporal pattern of incremental cash flows. I provide graphical illustrations of the development over time, as regards the three levels of the incremental cash flow concept. It must be stressed that I have not applied the same scale in all diagrams in this chapter, since my objective has been to make each graphical presentation as illustrative as possible.

The third empirical question elaborates the relation between incremental cash flows and incremental accounting income. I delimit the comparison to the FCF measure. In this context, I use the sum of the FCF figures from both the target group and the acquiring group. The corresponding accounting income concept is defined in appendix 3.1 and is abbreviated AIO (incremental accounting income from operations).

In the background to each takeover case, the parties' pre-merger profitability will be presented in terms of the return on capital employed (ROCE). It is defined according to expression [3.1]. Capital employed (*CE*) is defined as total assets less operating liabilities, that is, operating short-term and

long-term liabilities. The numerator is defined after tax, where t_c denotes the corporate tax rate.

$$ROCE_t = \frac{\text{Income before financial expenses}_t \cdot (1 - t_c)}{(CE_t + CE_{t-1}) / 2} \quad [3.1]$$

The acquiring and acquired companies are treated anonymously throughout the study. In some cases, the companies' industry is clearly stated. However, if this information could help reveal the merging parties' identity, it has not been given.

I have chosen a coding system where a female name is given to the acquiring group and a male name is given to the target group. I sometimes refer to the acquiring group as "she" and the target group as "he". For a particular acquisition, the female and the male name starts with the same letter. I do realise that using female and male names may be controversial, and I must therefore emphasise that the procedure has been chosen to allow for a clear and convenient format of presentation. The female name has been assigned to the acquiring company due to the fact that the parent company, in a Swedish setting, is popularly referred to as the 'mother'. Unless otherwise stated, the names always refer to the group level. The adapted names and the year when the deal was consummated are given in table 3.1 below, together with the position of the interviewee at the time of the interview. In four cases, the interviewee held the same position through the entire postmerger period as when the bid was given. The typical position was either managing director or financial director, but in one case the financial director was replaced by his deputy. More detailed information regarding each case is provided in appendix 3.2.

Table 3.1 Coded company names used in this study, year of summation and position of the interviewees

Case	Acquirer	Target	Merger year	Interviewee's position
A	Anne	Alfred	1986	Financial director
B	Beatrice	Benjamin	1986	Managing director, financial director
C	Christine	Charles	1984	Managing director, financial director
D	Daisy	David	1984	Financial director
E	Elizabeth	Edward	1984	Managing director
F	Felicia	Frederick	1988	Deputy financial director
G	Gwen	George	1987	Financial director

This chapter is structured as follows. The seven takeover cases are assigned one section each, from 3.1 to 3.7. Each one of these sections is structured along the four empirical questions that underlie the first purpose. The empirical questions are elaborated in the order they were presented in section 2.2.

3.1 Anne's acquisition of Alfred

3.1.1 Anne and Alfred as stand-alone companies and the motives for the acquisition

Anne's shares were listed on the Stockholm Stock Exchange. Alfred was privately owned. The companies operated in the same capital intensive industry, but Alfred's production was more refined than Anne's. Anne was both more profitable and larger than Alfred, her turnover was almost four times as high and the number of employees was twice as large. Some absolute figures regarding the parties the year before the takeover are given in table 3.2 below.

Table 3.2 Anne and Alfred the year before the acquisition

	Anne	Alfred
Return on average capital employed (per cent)	15.4	13.1
Sales per employee (SEK 000s)	753	436

Anne had an overall strategy of focusing on refined niche products of high quality, and market dominance. The purpose of this strategy was to avoid operationally risky product areas. Her motives for the acquisition of Alfred were partly to expand the range of refined products in order to reduce suppliers' prices, and partly to benefit from his packaging operations which, to some extent, competed with the higher segments of Anne's own production.

Anne intended to finance 2/3 of the acquisition of Alfred with stock, and 1/3 with a combination of foreign loans and her commercial paper programme. However, Alfred's former owners did not exchange their shares to the extent that Anne planned, which necessitated cash purchases directly at the Stock Exchange and a compulsory redemption. In the end, slightly more than half of the acquisition was financed by stock, and the remaining part by debts. Consequently, the cash payments relating to the financing of the deal proved to be larger than expected for the legal acquirer.

The decision to acquire Alfred more or less implied that Anne decided to make subsequent takeovers. During the second and third year after being taken over by Anne, Alfred made two indirect and one direct acquisition of international competitors. The total investment sum for these three competitors amounted to 49 per cent of Anne's acquisition cost for Alfred. The largest subsequent acquisition of them all, however, was made by Anne and not by Alfred. The company in question was listed on the London Stock Exchange, and to mitigate the selling shareholders' tax effects, Anne had to be the legal acquirer. Legally the company belonged to Anne, but operationally it was under Alfred's control and co-ordinated with him. As a direct consequence of these subsequent acquisitions, Alfred became market leader of a particular refined product in Europe.

3.1.2 Empirical question 1: Separation of incremental cash flows

The course of events that took place in Alfred was rather complicated during the postmerger period that I studied. From a separation point of view, four phenomena were particularly marked.

The largest separation problem related to an event that occurred 18 months after the takeover. The background was that Anne owned another subsidiary, Adam, an investment company with a considerable amount of cash and unrestricted equity. Anne wanted to access these funds, but could not do so without material tax disadvantages. The selected procedure implied that Alfred's assets and liabilities were sold to Adam at book value. Adam became an operating company and all his excess cash was then transferred to Anne through a group contribution. The tax effect of this transaction was cancelled out by remaining losses carried forward in Anne, a saving amounting to 129 per cent of Anne's acquisition cost for Alfred.

The only possible way to proceed was to follow the original Alfred until the transaction with Adam took place, and then to focus on the new Adam. In this context, I regarded the above tax synergy as unrelated to the acquisition of Alfred, since according to Anne's financial director it could have been extracted by moving the operations of some other subsidiary to Adam. Further, at the end of the postmerger period, the joint Alfred and Adam paid a large dividend to Anne which presumably was attributable to the substantial amount of cash that was originally tied up in Adam, and not to the cash generation in the original Alfred.

Another separation problem related to the subsequent acquisitions that were made by Alfred and Anne. These rather large takeovers concerned international targets which operated quite independently of Alfred and Anne during the postmerger period. The separation problems that occurred mainly involved financial transactions.

A third separation problem, although of considerably less importance than those presented above, occurred as one unit was moved from Anne to Al-

fred. This transfer changed the location of the incremental cash flows, making it necessary to adjust the size of the target group's incremental cash flow.

Finally, Anne financed the acquisition of Alfred partly within her general commercial paper program. This implies that it was not possible to discern the size of the takeover financing as time elapsed, since it was not obvious whether the loan was constant or decreasing. Consequently, the periodic financing payments were difficult to assess accurately.

3.1.3 Empirical question 2: Characteristics of incremental cash flows

3.1.3.1 Incremental cash flows located in Alfred

The temporal patterns of Alfred's incremental cash flows during the postmerger period are depicted in figure 3.1 below. The three levels of the incremental cash flow concept show basically the same course of events during the postmerger period, namely that the cash flows deteriorated during the first part of the period and improved during the latter part. Further, the fifth year did not reach the levels of the first postmerger year.

The average yearly CFO amounted to 24 per cent of Anne's acquisition cost for Alfred and was positive during each postmerger year. FCF, on the other hand, was negative for three of the five years, and the average yearly amount corresponded to minus 4 per cent of Anne's acquisition cost. FTE was close to FCF but on average somewhat more negative. The average yearly amount equalled minus 9 per cent of Anne's acquisition cost.

The relation between the average yearly figures for CFO and FCF indicates that during the postmerger period, Alfred managed to self-finance around 86 per cent of his net investments. Further, the distance between the curves demonstrates that the size of Alfred's net investments varied from year to year. They were most important in the middle of the postmerger period, when Alfred made three subsequent acquisitions which had a direct impact

on the investment figure. Further, these additional takeovers affected the CFO observed immediately after the deals came into effect.

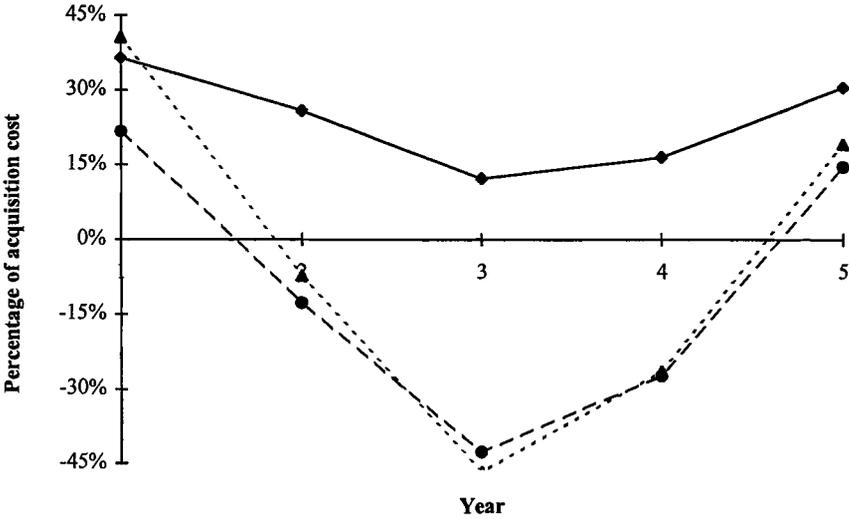


Figure 3.1 The incremental cash flows that resided Alfred during the postmerger period, expressed as CFO (unbroken line), FCF (dotted line) and FTE (broken line).

When comparing FCF to FTE, it is clear that Alfred had very little involvement with external capital providers, the exception being in the first year when a large amortisation was carried out. Instead, financing transactions took place with the acquiring group, as will be demonstrated in section 3.1.3.3.

It must be remembered that the reported figures also include the synergies that originated from a stronger negotiation power towards suppliers and which resulted in more favourable purchasing prices for certain expensive production equipment. These synergies, which were nevertheless deemed by the company representatives as being negligible in terms of overall financial

effects of the takeover, appeared in Alfred or his subsidiaries and are thus implicitly included in the above three levels of incremental cash flows.

3.1.3.2 Incremental cash flows located in Anne

Alfred operated rather independently after the acquisition, and was not integrated to any substantial extent into the acquiring group. The company representatives stated that all effects of the takeover occurred in the target group, and that there were no incremental cash flow implications for Anne, besides those aspects of the financing of the deal described in section 3.1.3.1.

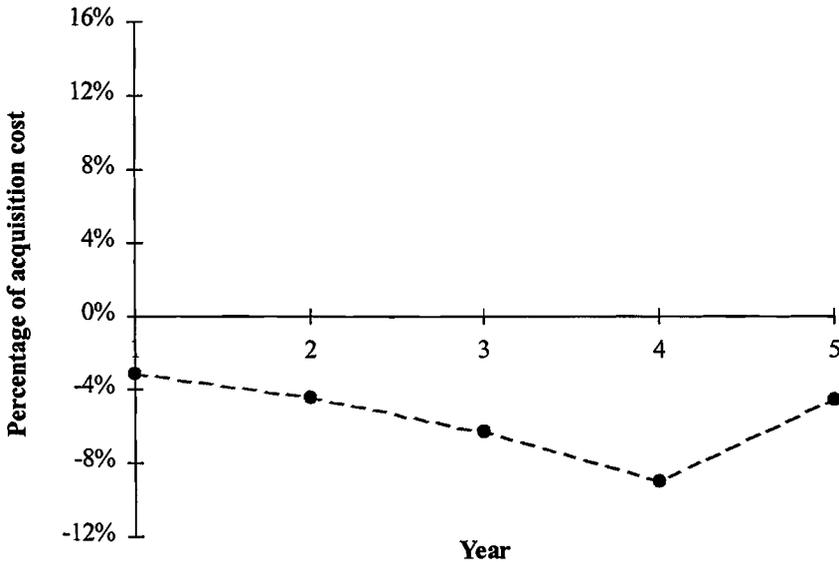


Figure 3.2 The incremental cash flows that resided in Anne during the postmerger period expressed at the FTE level.

Figure 3.2 shows the cash flow patterns of the incremental cash flows that resided in Anne during the postmerger period. They consisted of payments related to the financing of the deal and hence affected the incremental cash flows only at the FTE level. The curve of the acquiring group's incremental FTE rests on the simplification that the loan that financed the acquisition was constant during the postmerger period. This assumption was necessary, since the financing was a part of Anne's general commercial paper program, and hence not possible to distinguish. The fluctuation in figure 3.2 is therefore a function of changes in the interest rate. Under these conditions, the average yearly size of the incremental cash flows residing in Anne amounted to 6 per cent of Anne's acquisition cost for Alfred.

3.1.3.3 Internal cash transactions within the combined entity

The temporal pattern of the internal net financial transactions between Alfred and Anne is presented in figure 3.3. It demonstrates that the direction and size of these transactions varied during the postmerger period. Alfred contributed financially to the others for three of the five years, the exception being the second and third years when he received internal support to finance the acquisitions that he subsequently made. The average yearly size of Alfred's internal net financial contribution amounted to roughly 5 per cent of Anne's acquisition cost for him.

The fifth year contained the largest figure, which was explained by the huge dividend that Alfred paid to Anne that year. As was pointed out in section 3.1.2, this dividend was presumably attributable to Anne's acquisition of Alfred's brother Adam and should consequently be disregarded. However, it is difficult to decide the proper adjustment, and I have therefore chosen to include the observed transaction in figure 3.3. Had I instead omitted the entire amount, the internal net financial transaction during the fifth year would have been close to 0 per cent of Anne's acquisition cost for Alfred. Further, such an adjustment calls for the conclusion that Alfred, during the postmerger period as a whole, was a financial burden for the acquiring group.

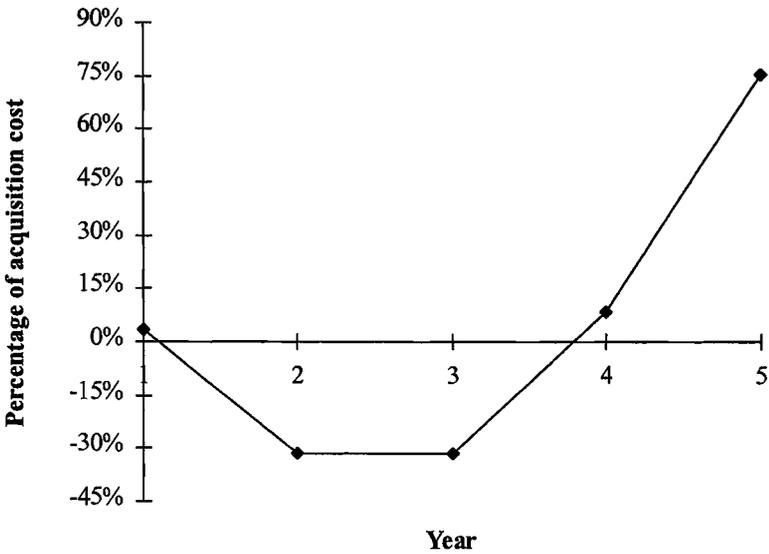


Figure 3.3 The development of the internal net cash transactions between Alfred and Anne during the postmerger period.

The dominating items that underlie figure 3.3 were group contributions and dividends. Alfred gave group contributions from the second year after the deal was settled and started to pay dividends one year later.

Finally, Alfred's financial transactions with the acquiring group were more important than those with external parties, both during each individual year and during the postmerger period as a whole.

3.1.4 Empirical question 3: Incremental free cash flow and incremental accounting income

In figure 3.4 below, the incremental free cash flows of the acquiring group and the target group are added together, and compared to the sum of the groups' incremental accounting income figures.

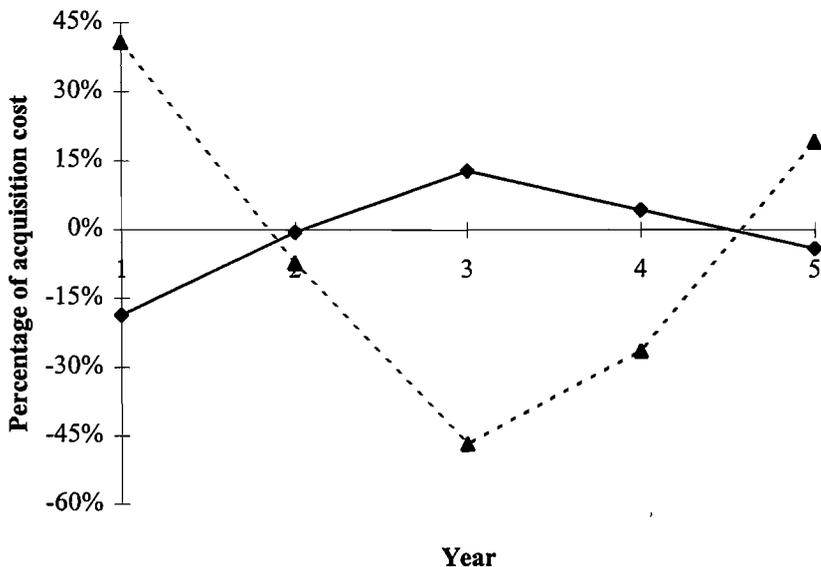


Figure 3.4 The incremental free cash flows (FCF) of Anne and Alfred added together, and compared to the sum of their incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line.

It is clear in figure 3.4 that AIO and FCF were associated with different temporal patterns. In fact, during each postmerger year they developed in opposite directions; the differences were particularly large during the first

and third year. As regards the first year, the main reason was that certain assets were divested to an amount exceeding that of new investments. Another explanation was that the restructuring expenses did not correspond to any payments during that period. In the third year, substantial investments were made, and FCF consequently fell short of AIO.

AIO showed a more stable temporal pattern than FCF. Further, the average AIO during the five-year period was minus 1 per cent of Anne's acquisition cost for Alfred. The figure was close to three percentage points higher than the corresponding average for FCF.

The purchase price for Alfred's shares exceeded his book value of equity. The difference amounted to roughly 52 per cent of Anne's acquisition cost for Alfred; it was mainly attributed to identifiable assets and was depreciated linearly over 25 years. The smaller part of the difference was booked as goodwill on consolidation and depreciated linearly over ten years. These items affected the AIO figure, and explained part of the difference between the average figures for AIO and FCF.

Alfred was smaller than the rest of the amalgamation, both in terms of turnover, and in terms of contribution to the consolidated income. The incremental accounting income corresponded to 6 per cent of the consolidated operating income during the postmerger period.

3.1.5 Empirical question 4: Anne's treatment of the time pattern and separability of the incremental cash flows

Anne used two estimates, the first of which followed an incremental logic and aimed to describe whether the acquisition of Alfred would yield an acceptable accounting return. The hurdle applied was the performance of the companies within the acquiring group. Her second approach was of a total nature in the sense that it focused on the combined entity and rested on the condition that the acquisition of Alfred would not reduce the earnings per share.

Anne based her estimate on what she regarded as Alfred's normal accounting income and adjusted it for such merger related revenues and expenses that she could foresee. She did not explicitly consider the temporal pattern of the estimated income, and the separation issue was not actualised due to the approaches chosen.

Anne did not postaudit the acquisition of Alfred. The financial director stated that "the buyer is satisfied on the behalf of the shareholders".

3.2 Beatrice's acquisition of Benjamin

3.2.1 Beatrice and Benjamin as stand-alone companies and the motives for the acquisition

Beatrice and Benjamin were competitors in a capital intensive industry and subsidiaries of listed Swedish companies. Beatrice was larger than Benjamin, her turnover was 5.4 times higher, the number of employees 6.3 times larger, but she was less profitable. Some absolute figures regarding the parties the year before the acquisition are given in table 3.3 below.

Table 3.3 Beatrice and Benjamin the year before the acquisition

	Beatrice	Benjamin
Return on average capital employed (per cent)	10.4	13.9
Sales per employee (SEK 000s)	697	803

Beatrice had long been interested in Benjamin, and this time she had three motives. First, to gain access to technology or a production process that she lacked, second to strengthen her position on the Scandinavian market, and third, to obtain a better balance in customer structure, by complementing her larger customers with Benjamin's smaller customers.

Beatrice's purpose was to integrate Benjamin completely into one of her own product areas, but expected no substantial synergies to result from this.

3.2.2 Empirical question 1: Separation of incremental cash flows

The fast and complete integration of one of Beatrice's product areas and Benjamin made it impossible to follow the incremental cash flows of this particular acquisition. Benjamin's group was broken up, his foreign subsidiaries were sold internally to his new brothers in order to create national tax groups, and his real property was divested. The legal Benjamin became a commission agent as soon as it was legally possible. All unrestricted equity in Benjamin was transferred to Beatrice as dividends or group contributions. After these procedures, Benjamin had no function besides name protection. Hence, Beatrice's acquisition of Benjamin is an illustrative example of the separation problem. The effects of the particular acquisition were not possible to separate, except for those aspects commented upon in the next section, since they were mixed with the other activities of the business area into which Benjamin was integrated.

3.2.3 Empirical question 2: Characteristics of incremental cash flows

Despite the impossibility of separating the effects of Beatrice's takeover of Benjamin, some aspects regarding potential incremental cash flows deserve attention. First, the purchase was financed by an unconditional shareholders' contribution from Beatrice's parent company. Second, after the takeover, Beatrice made material investments in Benjamin. The investment sum was twice as high as Beatrice's acquisition cost for Benjamin. Third, the originally acquired Benjamin was not complemented by subsequent acquisitions outside Beatrice's group, and neither was any part of his operations externally sold off. However, Benjamin initially divested a company internally

for a price corresponding to 12 per cent of Beatrice's acquisition cost for him, but he kept the operative responsibility for that company.

3.2.4 Empirical question 3: Incremental free cash flow and incremental accounting income

It was not possible to follow the incremental accounting income associated with Beatrice's acquisition of Benjamin. However, some relevant comments can be made. First, the accounting income was affected by goodwill depreciation. Beatrice intended to use a straight five-year schedule, but wrote down the remaining balance against unrestricted equity during the third postmerger year. The original goodwill item amounted to almost 8 per cent of Beatrice's acquisition cost for Benjamin. Second, the incremental income that was due to the acquisition of Benjamin was presumably rather small compared to the income generated by the other parts of the combined entity. This was due to the fact that Beatrice was considerably larger than Benjamin during the last pre-merger year, in terms of turnover, the relation was more than five to one.

3.2.5 Empirical question 4: Beatrice's treatment of the time pattern and separability of the incremental cash flows

Beatrice made an ex ante calculation of the acquisition of Benjamin in a format derived from the capital budgeting tradition, and estimated the incremental cash flows in the following way:

- Earnings before depreciation, interest and taxes
- investments
 - increases in working capital
 - taxes on earnings before interest
 - ± restructurings and synergies
 - = Cash flow associated with the takeover of Benjamin

The temporal pattern of the expected annual cash flows was based on a prolongation of historic trends and the figures generated were discounted by a cost of capital in order to obtain a present value. The cost of capital was set according to the intended capital structure of the combined entity.

After a request from the board, Beatrice postaudited the acquisition of Benjamin. For obvious reasons, the analysis focused on the amalgamation, that is, the combined Beatrice and Benjamin. The conclusion was that the outcome was acceptable, but it was not possible to decide to what extent this was due to the operations that originated from Benjamin. Hence, the ex post calculation did not address the separation issue although its importance was recognised in the conclusion.

3.3 Christine's acquisition of Charles

3.3.1 Christine and Charles as stand-alone companies and the motives for the acquisition

Christine was a sub-subsidiary of a listed Swedish company. Charles, her competitor, was a profit centre within a subsidiary of a co-operative Swedish group and not a legal person. They operated within a capital intensive industry. Christine was larger than Charles; the turnover was 1.4 times higher and the number of employees was 1.4 times as large. Some absolute figures regarding the parties the year before the acquisition are given in table 3.4 below.

Table 3.4 Christine and Charles the year before the acquisition

	Christine	Charles
Return on average capital employed (per cent)	24.2	N/A
Sales per employee (SEK 000s)	558	592

Christine's motives for the acquisition were to acquire production capacity and to obtain a better market dispersion. She had capacity problems and the cheapest solution was to acquire Charles, who had spare capacity. Christine estimated that the market would be less disturbed if she acquired existing capacity rather than creating new capacity. The companies were geographically complementary to each other, a fact that was important in the light of high distribution costs.

Since Charles was not a legal person, the acquisition had to be direct. The takeover was financed by Christine's parent company and took the form of a ten-year loan with straight-line amortisation. One year after the acquisition, half of the loan was transformed to shareholders' equity.

3.3.2 Empirical question 1: Separation of incremental cash flows

The separation of the incremental cash flows associated with Christine's acquisition of Charles was troublesome in some aspects. First, Charles' administrative functions were centralised, which meant that part of the resources that were necessary for his operations were paid for by the acquiring group. The exact amount had to be estimated, since the administrative expenses of the combined entity were not broken down on particular units.

Second, since the acquisition was also driven by a geographical motive, the transportation costs were reduced by developing an efficient system for serving the customers from the most appropriate factory. The exact saving

was not possible to observe, and therefore had to be estimated on the basis of changes in transportation costs.

Third, part of Charles' sales were hard to separate. Most of the goods were delivered directly to the customer, and only small series that had to be kept in stock passed a wholesaler. Three years after the takeover, all Christine's and Charles' wholesale activities were gathered in one profit centre. Consequently, the part that emanated from Charles was mixed up with what had originally belonged to Christine.

Finally, as Charles was a profit centre, the accounting information system was restricted to the operative aspects of his operations, and did not inform about the financing side. Consequently, the presentation of the target group's incremental cash flows comprises two of the three levels, namely CFO and FCF.

3.3.3 Empirical question 2: Characteristics of incremental cash flows

3.3.3.1 Incremental cash flows located in Charles

The temporal patterns of Charles' incremental cash flows during the post-merger period are depicted in figure 3.5 below. It does not show any consistent patterns; the two cash flow concepts, CFO and FCF, developed differently over the years. CFO was improved continuously and was positive during four of the five years, the exception being the very first year. The average yearly CFO amounted to slightly more than 12 per cent of Christine's acquisition cost for Charles. FCF, on the other hand, fluctuated more, but it never became positive. Its average yearly size corresponded to minus 17 per cent of Christine's acquisition cost for Charles. This implies that during the postmerger period, Charles managed to self-finance almost 41 per cent of his net investments.

The distance between the CFO and FCF curves demonstrates that Charles' net investments did not vary considerably, but rather grew gradually except for a slight decline during the fourth year.

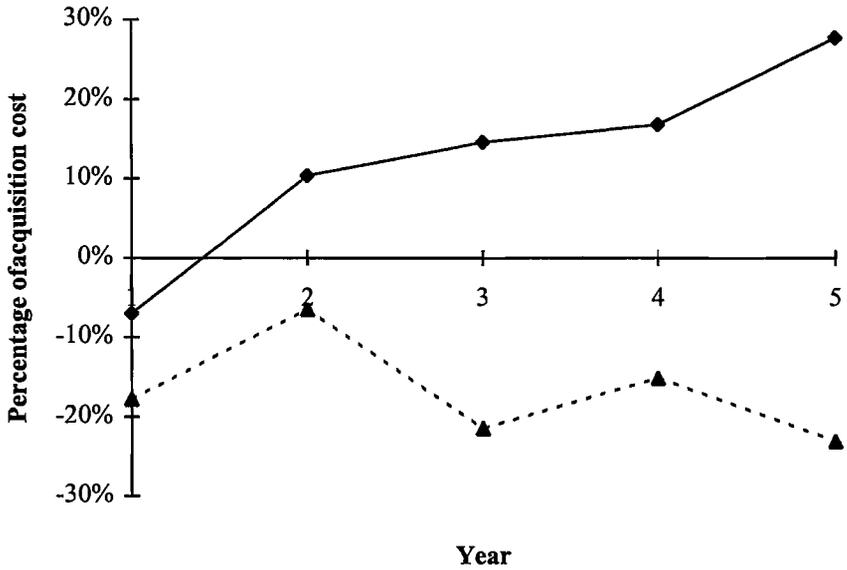


Figure 3.5 The incremental cash flows that resided in Charles during the postmerger period, expressed as CFO (unbroken line) and FCF (dotted line).

It must be remembered that the figures regarding CFO and FCF include synergies, half of which were said to have appeared in Charles. The total cash flow due to synergies, on a before-tax basis, was estimated at 5 per cent annually of the price Christine paid for Charles' operations.

3.3.3.2 Incremental cash flows located in Christine

One merger consequence occurred in the acquiring group, but also affected Charles to some extent, namely the centralisation of his administrative functions. The company representative estimated that this improved Charles' cash flow by slightly less than 8 per cent annually in terms of Christine's acquisition cost for Charles.

Further, part of the transportation synergies that followed the deal appeared outside Charles. The total cash flow due to synergies was estimated at 5 per cent annually, on a before-tax basis, of Christine's acquisition cost for Charles, half of which was estimated to have appeared in Charles.

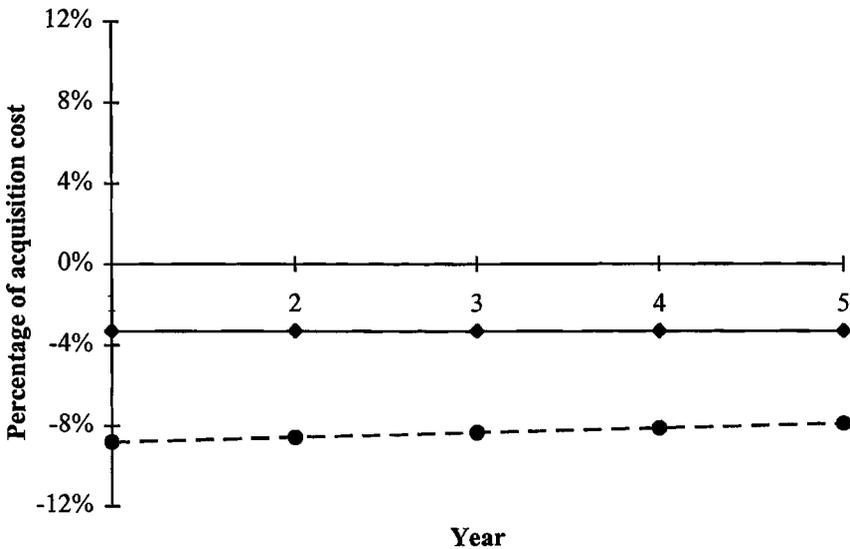


Figure 3.6 The incremental cash flows that resided in Christine during the postmerger period expressed as CFO (unbroken line) and FTE (broken line).

Finally, the financing of the acquisition that Christine arranged with her parent company had the form of a ten-year loan with straight-line amortisa-

tion. The average yearly size of the financing payments amounted to around 6 per cent, on a before tax basis, of Christine's acquisition cost for Charles.

Figure 3.6 above shows the cash flow patterns of the incremental cash flows that resided in Christine during the postmerger period. CFO includes the effects of the centralised administrative functions and the synergies, and FTE comprises, in addition to the CFO items, the payments related to the financing of the deal.

3.3.3.3 Internal cash transactions within the combined entity

As was mentioned in section 3.3.2, the financing aspects of Charles' operations were not possible to detect, and therefore, the incremental FTE cannot be described. It is, however, apparent that the acquiring group must have supported him financially in some way, since he was not able to self-finance more than 41 per cent of his capital investments, as reported in section 3.3.3.1 above.

3.3.4 Empirical question 3: Incremental free cash flow and incremental accounting income

In figure 3.7 below, the incremental free cash flows of the acquiring group and the target group are added together, and compared to the sum of groups' incremental accounting income figures. It is clear in figure 3.7 that AIO and FCF were associated with different temporal patterns; in some years they developed in opposite directions. The differences were particularly large during the last part of the postmerger period. From year three onwards, Charles made large investments, which each year exceeded the annual depreciation figure. Consequently, the difference between AIO and FCF increased.

AIO had a more stable temporal pattern than FCF. Further, the average AIO during the five-year period was 1 per cent of Christine's acquisition cost for Charles. The figure was close to twenty percentage points higher than the corresponding average for FCF.

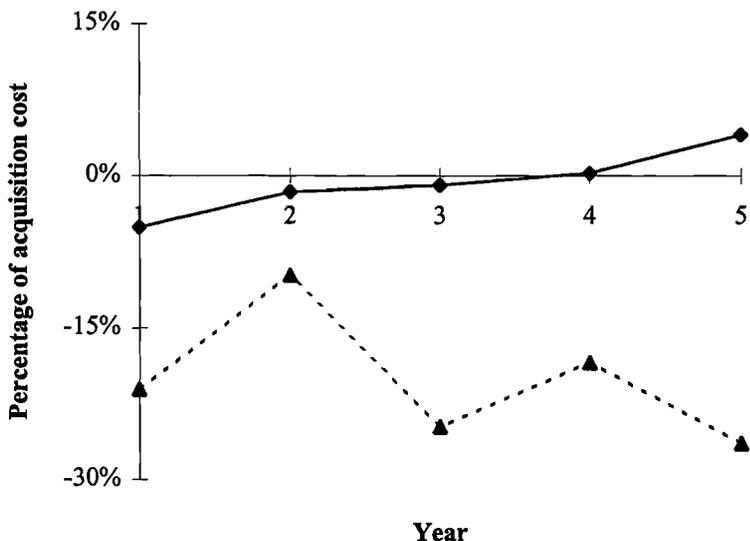


Figure 3.7 The incremental free cash flows (FCF) of Christine and Charles added together, and compared to the sum of their incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line.

In this particular case the acquisition was direct. The purchase price for Charles' assets exceeded the book value by slightly more than 20 per cent. The difference was depreciated linearly over five years, and affected the incremental accounting income. The depreciation figure was substantial, and corresponded, on average, to more than half the target's AIO.

The incremental accounting income that was due to the acquisition of Charles was relatively small, corresponding to less than two percent of the consolidated income.

3.3.5 Empirical question 4: Christine's treatment of the time pattern and separability of the incremental cash flows

Christine could not provide her capital budgeting approach, since the documentation about the model had disappeared, but she informed me that she had used a discounted cash flow valuation. The absence of the model made it impossible to scrutinise the extent to which temporal patterns and separation issues were recognised.

Christine did not postaudit the acquisition of Charles. The financial director stated that "the best measure of the outcome is probably that seven to eight years after the deal, we have succeeded in achieving our aims".

3.4 Daisy's acquisition of David

3.4.1 Daisy and David as stand-alone companies and the motives for the acquisition

Daisy was a listed Swedish company, and David was her competitor, listed on the Stock Exchange, but with a different industrial composition and more refined products. The companies operated in a capital intensive industry. David was more profitable, but smaller, than Daisy. Both turnover and number of employees were 20 per cent larger. Some absolute figures regarding the parties the year before the acquisition are given in table 3.5 below.

Table 3.5 Daisy and David the year before the acquisition

	Daisy	David
Return on average capital employed (per cent)	9.5	13.3
Sales per employee (SEK 000s)	622	579

Daisy, who had an overall strategy of becoming more dominant on the market, had identified potential companies to acquire. It was a coincidence that David was the first to be taken over. The purchase resulted in a market expansion and partially in an integration forward. The structural changes and the extraction of synergies had to wait for two more years until Daisy bought another company she had long been interested in.

Daisy concentrated David's operations by initiating a sell-off of his power division one year after the takeover. The price corresponded to 15 per cent of her acquisition cost for David.

Daisy intended to finance 60 per cent of the acquisition with a loan and 40 per cent with a nine-year convertible loan. This mix was later changed, since 7 per cent of the shares in David had to be acquired through a compulsory redemption. Consequently, the financing payments became larger than expected. Three years after the deal, the convertible loan was reduced by 2/3.

3.4.2 Empirical question 1: Separation of incremental cash flows

The course of events that took place in David was rather complicated. From a separation point of view, four phenomena were particularly marked.

The largest separation problem related to the subsequent acquisitions made by Daisy. Two years after the acquisition of David, she acquired yet another Swedish competitor. Initially, this affected David only in an operative sense

and legally he remained unchanged for yet another year. Then, he was given a legal structure identical to the operative one he had had all along after the acquisition. Part of the original legal target became a business area (the largest in the new group), and the remaining parts were broken up and added to the corresponding units emanating from the original Daisy. The operations of the target group were distributed to six different business areas. From that point on, the effects of the particular takeover decision under study could not be separated from the implications of the subsequent acquisitions, and I chose to delimit the postmerger period to the first three post-merger years.

Another separation problem related to synergies that followed the deal. The acquisition also included a geographical motive, since transportation costs could be reduced by developing an efficient system for serving the customers from the most appropriate factory. The synergies were not possible to quantify accurately, but an estimate of their total size was made by the company representative. Some of the synergies were said to have influenced David, while other appeared in the acquiring group. Further, David experienced what could be called indirect synergies that appeared as a consequence of the first of Daisy's subsequent acquisitions and were not possible to separate.

A third separation problem concerned two small internal sell-offs that David made after his inclusion in Daisy. The prices were market based and amounted in total to 4 per cent of Daisy's acquisition cost for David. This transaction changed the location of the incremental cash flows, making it necessary to adjust the size of the target group's and the acquiring group's respective incremental cash flows. Part of the divested operations was later sold externally by the internal buyer.

A fourth separation problem was associated with the fact that Daisy financed the acquisition of David partly within her general commercial paper program. This means that it was not possible to discern the size of the takeover financing as time elapsed, as it was not obvious whether the loan was constant or decreasing. Consequently, the periodic financing payments were hard to assess accurately.

3.4.3 Empirical question 2: Characteristics of incremental cash flows

As was pointed out in the foregoing section, Daisy was heavily restructured after the takeover. As a consequence, I was forced to delimit the postmerger period to three years.

3.4.3.1 Incremental cash flows located in David

The temporal patterns of David's incremental cash flows during the postmerger period are depicted in figure 3.8 below.

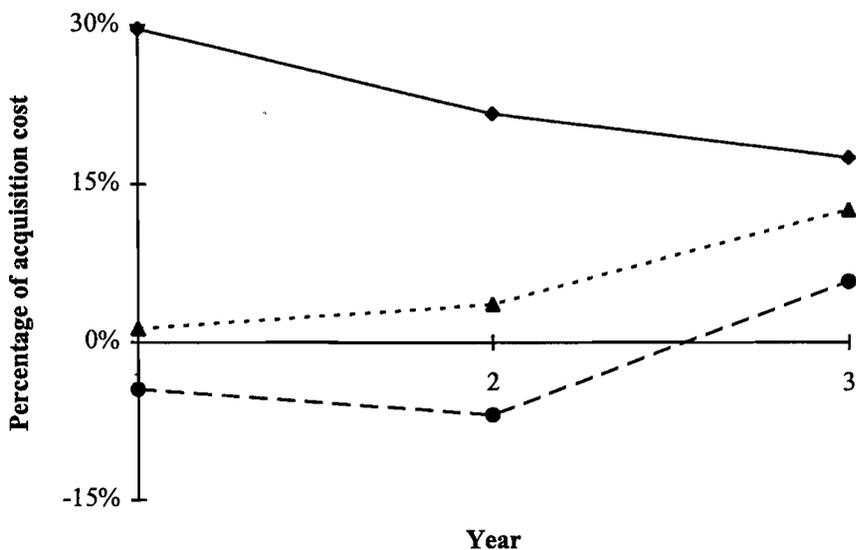


Figure 3.8 The incremental cash flows that resided in David during the postmerger period, expressed as CFO (unbroken line), FCF (dotted line) and FTE (broken line).

One interpretation of figure 3.8 is that David's operative cash flows were positive during each postmerger year in terms of CFO or FCF. The average yearly CFO amounted to slightly less than 23 per cent of Daisy's acquisition cost for David. The corresponding figure for FCF and FTE was 6 per cent and minus 2 per cent respectively. Further, the distance between the curves demonstrates that David's investment expenses in a relative sense were highest at the beginning of the postmerger period and then declined.

The temporal patterns were different for CFO and FCF, the former decreased annually during the period, while FCF showed the opposite development. This indicates that the cash generation of David's ongoing operations declined, but also that his net investments decreased relatively more. In terms of gross investments, the conclusion is even stronger than the figure shows, since FCF during the first postmerger year increased as a result of David's sell-off of his power division for a price corresponding to 15 per cent of Daisy's acquisition cost for him. This sell-off naturally affected the observed level of the operative cash flow during the remaining years of the postmerger period and might partly explain the negative trend of CFO. Further, the relation between the average yearly figures for CFO and FCF indicates that during the postmerger period, David managed to self-finance all his net investments.

The trends for FCF and FTE are similar. The distance between the two curves indicates that David had little involvement with external capital providers, which seems reasonable in the light of his ability to self-finance all his capital investments.

Finally, it must be remembered that the reported figures include the direct and indirect synergies that were commented upon in section 3.4.2.

3.4.3.2 *Incremental cash flows located in Daisy*

The incremental cash flows that resided in the acquiring group originated partly from synergies, and partly from the financing of the deal through

Daisy's commercial paper program. The synergies affected all three levels of the incremental cash flow concept, while the aspects of financing are only reflected in the FTE measure. Figure 3.9 illustrates the relative size of these items during the postmerger period.

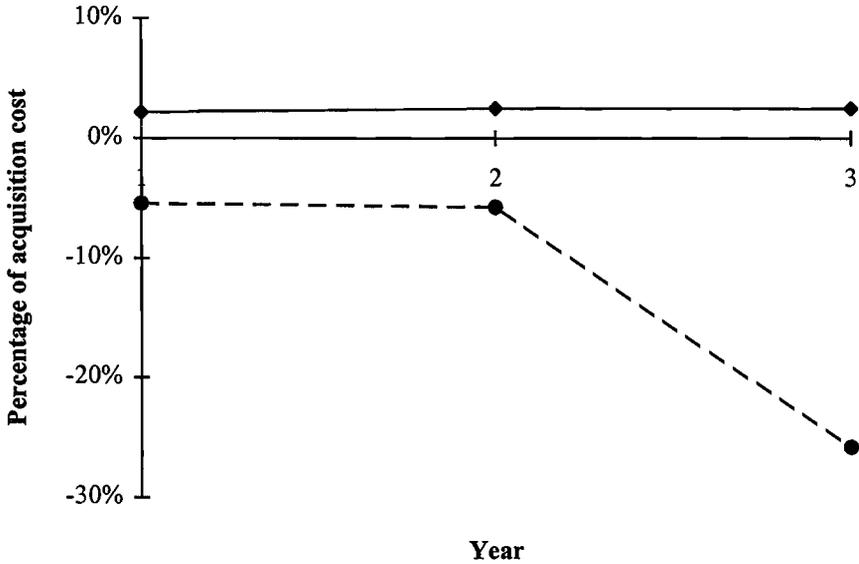


Figure 3.9 The incremental cash flows that resided in Daisy during the postmerger period expressed as CFO (unbroken line) and FTE (broken line). In this particular case, CFO is equal to FCF.

In this context, it must be stated that the values underlying figure 3.9 are estimates; the synergies were estimated by the company representative, and the financing payments were estimated by me based on the assumption that the loan taken to finance the deal was constant over the years. The development of FTE during the last year was explained by the redemption of the convertible loan that partly financed the takeover.

Internal trading took place continuously within the combined entity at market prices. David was a net seller to the acquiring group, and the average yearly net sales amounted to less than 1 per cent of Daisy's acquisition cost for him. The effects of these transactions are not included in figure 3.9.

3.4.3.3 Internal cash transactions within the combined entity

The temporal pattern of the internal net financial transactions between David and Daisy is presented in figure 3.10 below.

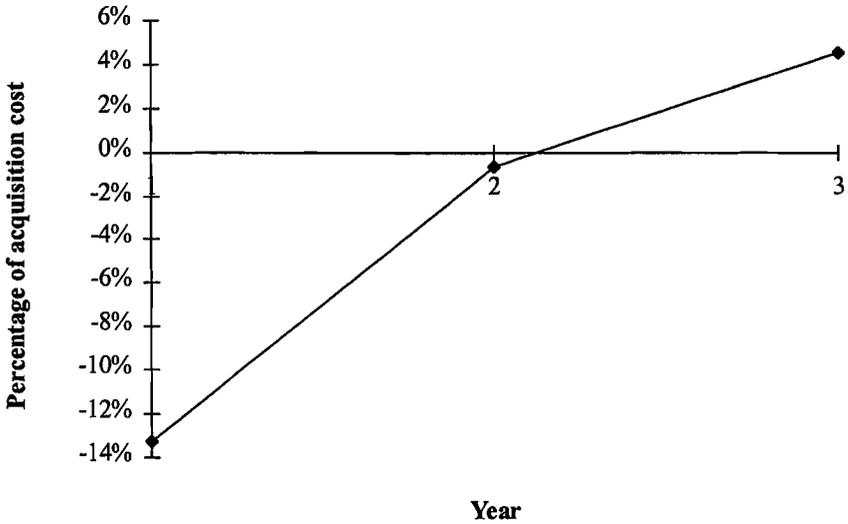


Figure 3.10 The development of the internal net cash transactions between David and Daisy during the postmerger period.

Figure 3.10 demonstrates clearly that Daisy initially contributed to the target group, but that the situation from her perspective improved gradually. The net internal financial transactions were rather small, except for in the first

year. The small size, around 3 per cent of Daisy's acquisition cost for David, can be explained by his positive incremental FCF, which seemed to eliminate his need for financial support in various forms. In fact, the internal net financial transactions made up the greater part of David's financing during the postmerger period as a whole, but with noticeable variations from year to year. Further, the main explanation for the relatively large transaction during the first postmerger year was a group contribution that David received from Daisy.

3.4.4 Empirical question 3: Incremental free cash flow and incremental accounting income

In figure 3.11 below, the incremental free cash flows of the acquiring group and the target group are added together and compared to the sum of groups' incremental accounting income figures. It is clear from figure 3.11 that AIO and FCF were associated with opposite temporal patterns. However, they were moving closer to each other as time elapsed. The difference was particularly large during the first year, when David made big investments totaling more than the depreciation figure.

The average AIO during the three year period was 24 per cent of Daisy's acquisition cost for David. The figure was slightly more than 16 percentage points higher than the corresponding average for FCF.

Goodwill on consolidation was not an issue in this takeover. The premium that was paid in comparison to the book value of David's assets and debts corresponded to 30 per cent of Daisy's acquisition cost for David. It was allocated to identifiable property, which was not subject to depreciation. Hence, goodwill did not cause any difference between AIO and FCF.

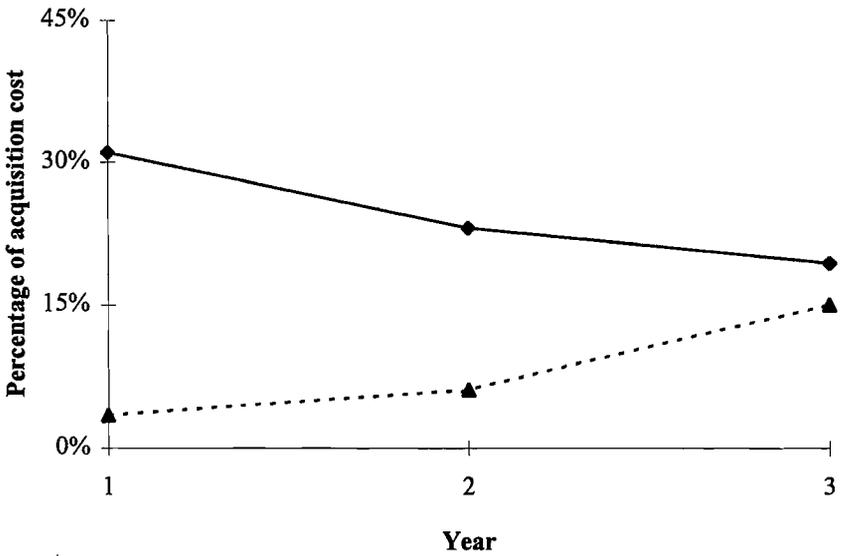


Figure 3.11 The incremental free cash flows (FCF) of Daisy and David added together, and compared to the sum of their incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line.

The incremental income that was due to the acquisition of David was significant compared to the income generated by the other parts of the combined entity. It corresponded to 37 per cent of the consolidated operating income during the postmerger period.

3.4.5 Empirical question 4: Daisy's treatment of the time pattern and separability of the incremental cash flows

Daisy did not perform a capital appraisal. The reason for this was that David was already a potential target in Daisy's strategic plans and when it became clear that he was for sale, she took the opportunity to acquire without further quantitative analysis.

As a consequence of the integration with other companies acquired by Daisy, events that impeded the study of five postmerger years, Daisy did not postaudit the acquisition of David. The financial director stated that "in a sufficiently long perspective everything will be right, unless you were structurally wrong".

3.5 Elizabeth's acquisition of Edward

3.5.1 Elizabeth and Edward as stand-alone companies and the motives for the acquisition

Elizabeth was the parent of a group that supplied components to the automobile industry. She was a sub-subsidiary of a listed Swedish company. Edward operated in the same industry, but was owned by the management. Edward was both more profitable and larger than Elizabeth; the turnover was 60 per cent higher and the number of employees were 2.6 times larger. Some absolute figures regarding the parties the year before the acquisition are given in table 3.6 below.

Table 3.6 Elizabeth and Edward the year before the acquisition

	Elizabeth	Edward
Return on average capital employed (per cent)	27.7	20.6
Sales per employee (SEK 000s)	606	373

There were three motives for the acquisition. Elizabeth wanted to broaden her product range, and gain access to a different production technique. Moreover, she aimed to internationalise her operations.

Elizabeth financed the takeover with an internal loan from her parent company.

3.5.2 Empirical question 1: Separation of incremental cash flows

Edward had a rather independent position within the combined entity during the postmerger period and the only apparent separation problem related to his European subsidiary. Rather soon after the takeover, Elizabeth realised that it was in bad shape. She took minor restructuring costs and divested the subsidiary in question some years later at a material capital loss.¹ The problem in this context was to attribute the correct amount of incremental cash flows to the acquiring group and the target group.

3.5.3 Empirical question 2: Characteristics of incremental cash flows

3.5.3.1 Incremental cash flows located in Edward

The temporal patterns of Edward's incremental cash flows during the postmerger period are depicted in figure 3.12 below. The three levels of the concept give the same overall information of the course of events during the postmerger period inasmuch as the incremental cash flows improved gradually. CFO was positive each year and its average yearly size amounted to 57 per cent of Elizabeth's acquisition cost for Edward. The corresponding figure for FCF and FTE was 23 per cent and minus 2 per cent respectively.

¹ The large capital loss was accompanied by a small cash inflow as Elizabeth received a relatively small amount when she sold the subsidiary.

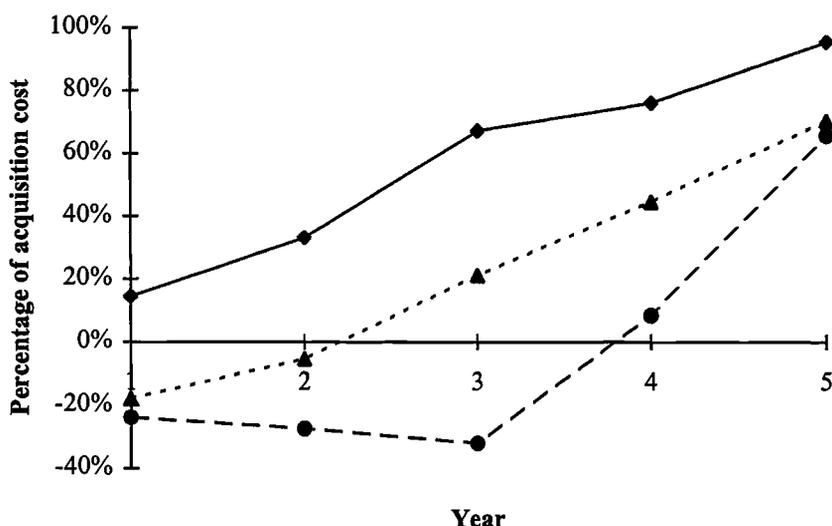


Figure 3.12 The incremental cash flows in Edward during the postmerger period, expressed as CFO (unbroken line), FCF (dotted line) and FTE (broken line).

The relation between the average yearly figures for CFO and FCF indicates that during the postmerger period, Edward managed to self-finance his net investments. FCF was positive for the last three of the five postmerger years. The negative FCFs at the beginning of the period were due to insufficient CFOs rather than exceptionally large net investments. In fact, the net investments were rather constant in relative terms over the years.

When comparing FCF and FTE, it is clear that Edward's transactions with external capital providers varied considerably over the years. This was due to the fact that in the middle of the postmerger period, he amortised an external loan and replaced it with an internal loan from Elizabeth, which will be apparent in section 3.5.3.3 below.

3.5.3.2 Incremental cash flows located in Elizabeth

The incremental cash flows that resided in the acquiring group consisted of those associated with the European subsidiary that was divested, and the interest payments related to the financing of the acquisition. The former affected all three levels of the incremental cash flow concept, while the aspect of financing only is reflected in the FTE measure. Figure 3.13 illustrates the relative size of these items during the postmerger period. The average yearly CFO amounted to more or less 0 per cent, and the FTE was equal to the interest rate on the constant loan after tax, that is, around 8 per cent.

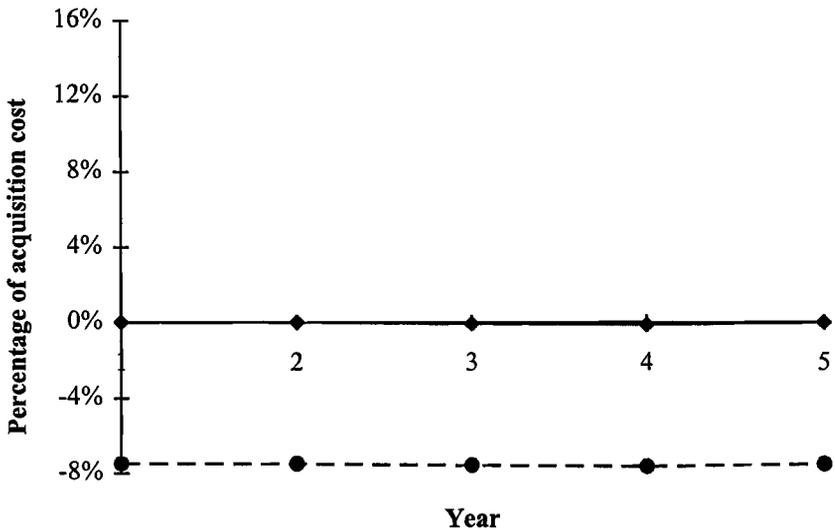


Figure 3.13 The incremental cash flows that resided in Elizabeth during the postmerger period expressed as CFO (unbroken line) and FTE (broken line). In this particular case, CFO is equal to FCF.

Internal trading took place continuously within the combined entity at market prices. Edward was a net seller to the acquiring group, and the average

yearly net sales amounted to 8 per cent of Elizabeth's acquisition cost for him. The cash effects of these transactions are not included in figure 3.13.

3.5.3.3 Internal cash transactions within the combined entity

The temporal pattern of the internal net financial transactions between Edward and Elizabeth is presented in figure 3.14 below.

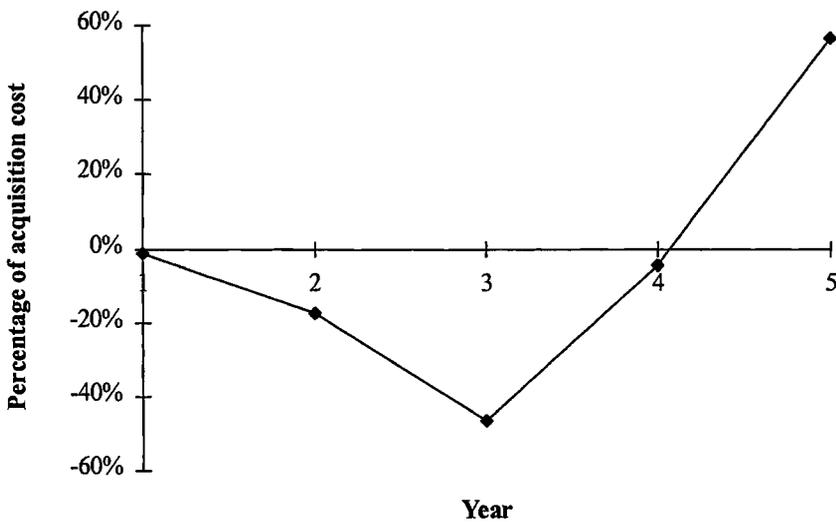


Figure 3.14 The development of the internal net cash transactions between Edward and Elizabeth during the postmerger period.

Figure 3.14 demonstrates that the size and direction of these transactions varied over the years. During the first four years, Edward was a financial burden for the others, although the situation changed after the third year. It was not until the fifth year that he made a net cash contribution.

It may seem surprising that Edward received a substantial amount of cash from the acquiring group at the same time as his operative cash flow was positive and increasing,² a situation which was most marked in the third and fourth years. The explanation is that during the early years of the postmerger period, Edward repaid a substantial part of his external financial loans and replaced them with internal loans. At the end of the period, when his operations generated larger cash flows than he needed, he amortised the internal loans and hence the trend in figure 3.14 was reversed.

However, the size of the internal net financial transactions is only partly explained by payments related to the internal loans. In addition to them, Edward paid group contributions during the first three postmerger years.

The average yearly size of the internal net financial transactions amounted to slightly less than minus 2 per cent of Elizabeth's acquisition cost for Edward.

3.5.4 Empirical question 3: Incremental free cash flow and incremental accounting income

In figure 3.15 below, the incremental free cash flows of the acquiring group and the target group are added together, and compared to the sum of groups' incremental accounting income figures. It is clear in figure 3.15 that AIO and FCF were associated with similar temporal patterns. However, their relation changed during the latter part of the postmerger period. The difference was most substantial in the last year, when the investment expenditures declined and came short of the depreciation charges. Further, the working capital decreased markedly during that particular year.

The average FCF during the five-year period was roughly 22 per cent of Elizabeth's acquisition cost for Edward. The figure was seven percentage points higher than the corresponding average for AIO.

² See figure 3.12.

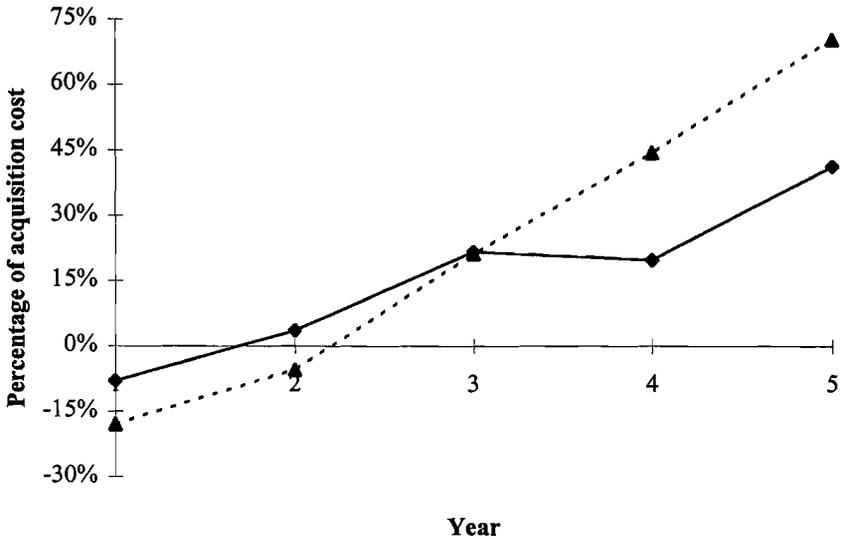


Figure 3.15 The incremental free cash flows (FCF) of Elizabeth and Edward added together, and compared to the sum of their incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line.

In this case, the goodwill on consolidation that arose was expensed in the income statement during the first postmerger year. It affected the AIO figure, but the impact was rather small. The goodwill item represented 3 per cent of Elizabeth's acquisition cost for Edward.

The incremental income that was due to the acquisition of Edward acquisition was significant compared to the income generated by the other parts of the combined entity. It corresponded to 57 per cent of the consolidated operating income.

3.5.5 Empirical question 4: Elizabeth’s treatment of the time pattern and separability of the incremental cash flows

Elizabeth’s method of investment appraisal was of a capital budgeting nature in that she regarded the acquisition of Edward as an investment project. However, she did not estimate the future incremental cash flows, but rather the accounting income that Edward was assumed to generate. She based her estimates on an assumed annual growth in earnings. Further, she related the expected income figures to Edward’s capital employed and evaluated ROCE (before tax) against the group hurdle, which was 20 per cent.

Due to the absence of restructuring plans, the question of separation was not an issue in the ex ante calculations.

At the board’s request, Elizabeth postaudited the acquisition of Edward. She followed the development of his ROCE and concluded that the acquisition was a failure. “If I could turn back the clock, I would not make this acquisition”, Elizabeth’s managing director said.

3.6 Felicia’s acquisition of Frederick

3.6.1 Felicia and Frederick as stand-alone companies and the motives for the acquisition

Felicia was a listed Swedish conglomerate. Frederick was the subsidiary of another listed Swedish conglomerate. Both companies were active in a process industry. Felicia was more profitable than Frederick: her turnover was 14.8 times higher and she had 24 times more employees than Frederick. Some absolute figures regarding the parties the year before the acquisition are given in table 3.7 below.

Table 3.7 Felicia and Frederick the year before the acquisition

	Felicia	Frederick
Return on average capital employed (per cent)	11.7	9.7
Sales per employee (SEK 000s)	768	1239

Felicia's objective was to expand her presence in a particular Swedish industry beyond her subsidiary Frank, and in this context Frederick was one of three potential companies to buy.

The motive for the acquisition was to extract synergies. Frank had been interested in buying Frederick several times. The companies' products were complementary, they used the same technology and they had the same customers.

Felicia financed the acquisition within her commercial paper programme.

3.6.2 Empirical question 1: Separation of incremental cash flows

The course of events that took place in Frederick was rather complicated after the acquisition. From a separation point of view, three phenomena were particularly troublesome.

The largest separation problem related to the fast integration between Frederick and the acquiring group. The companies involved in this process and their relation are shown in figure 3.16 below. During the first few months after the acquisition, Franklin and Frank were sold to Florence. Franklin then bought Florence's assets and debts, and at the same time Felicia sold Frederick. However, Franklin made an agreement to lease back the fixed assets from Frederick. During the third year after the initial takeover, Fiona bought the shares in Frank and Franklin from Florence and also bought the shares in Frederick from external parties. Finally, during the fourth year af-

ter the initial takeover, the assets and liabilities in Fiona were transferred to Frederick. Despite this complicated set of events, it was possible to trace the cash flow effects, since the operations of the original Frederick and Frank are relevant to follow regardless of their organisational belonging. However, the original Frederick and Frank cannot be separated from each other. Consequently, from now on all figures concern Florence's takeover of the joint Frederick and Frank.

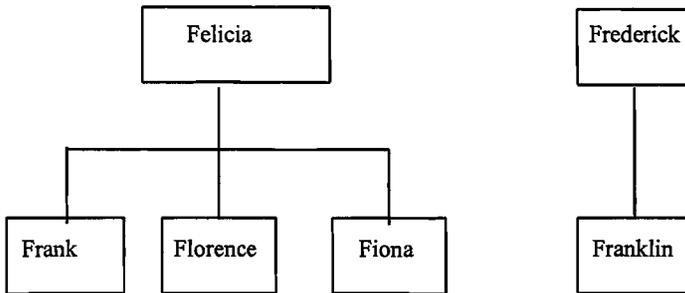


Figure 3.16 Part of the group structures of Felicia and Frederick before the deal.

The second separation problem was due to internal sell-offs that Frederick made in order to create national tax groups. He divested at book value to a price equivalent to 22 per cent of Florence's acquisition cost for him and Frank. This transaction changed the location of the incremental cash flows, hence making it necessary to adjust the size of the target group's incremental cash flows. Part of the divested operations was later sold externally by the internal buyer at a price corresponding to almost 75 per cent of the amount Frederick received.

Finally, the payments related to financing caused a separation problem. From Florence's perspective, the deal was financed by a shareholders' contribution from Felicia, but it was impossible to decide whether or not it was later repaid. However, it could be asserted that the relevant financing effects

are those manifest in Felicia. Even at this level the exact financing was troublesome since Felicia expanded her commercial paper programme and made several share issues around the acquisition date, without any explicit link to the purchase of Frederick.

3.6.3 Empirical question 2: Characteristics of incremental cash flows

It must be remembered that all incremental cash flows in this section relate to Florence's acquisition of the joint Frederick and Frank. The question of whether Florence paid a fair price for the two companies is fortunately not relevant for the presentation of the relative size and temporal pattern of various incremental cash flows in this section.

3.6.3.1 Incremental cash flows located in Frederick and Frank

The temporal patterns of the incremental cash flows of Frederick and Frank during the postmerger period are depicted in figure 3.17 below, which demonstrates that the operative cash flows varied and were relatively poor during the restructuring years at the beginning of the postmerger period. As regards CFO, the situation improved during the third year, while for FCF the improvement did not appear until one year later. FTE is very close to FCF over the whole period.

The observed CFO was positive each year and its average yearly size amounted to almost 13 per cent of Florence's acquisition cost for Frederick and Frank. As regards FCF and FTE, the average yearly size corresponded to minus 5 per cent and minus 6 per cent respectively.

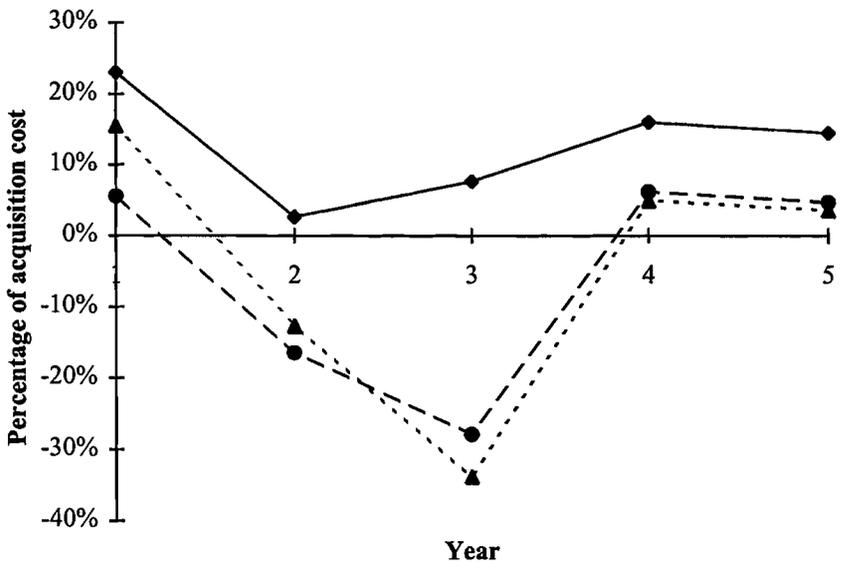


Figure 3.17. The incremental cash flows that resided in the combined Frederick and Frank during the postmerger period, expressed as CFO (unbroken line), FCF (dotted line) and FTE (broken line).

The relation between the average yearly figures for CFO and FCF indicates that during the postmerger period, Frederick and Frank managed to self-finance almost 74 per cent of their net investments. Except for in the third year, when Frederick and Frank undertook substantial investments, the two cash flow concepts are close to each other, indicating that the investment expenditures were fairly constant during the postmerger period.

When comparing FCF and FTE, it is clear that Frederick and Frank had little involvement with external capital providers. As will be demonstrated in section 3.6.3.3, the reason is the frequency and size of the financial transactions with the acquiring group.

3.6.3.2 Incremental cash flows located in Felicia

Felicia remained a conglomerate during the postmerger period and the different business areas were independent of each other. Hence, the effects of the takeover mainly appeared in Frederick and Frank. Yet some effects occurred in Felicia who obtained a substantial tax synergy by making several internal restructurings after the purchase of Frederick. The tax saving potential was used in the first year after the takeover and amounted to 22 per cent of Florence's acquisition cost for Frederick and Frank.

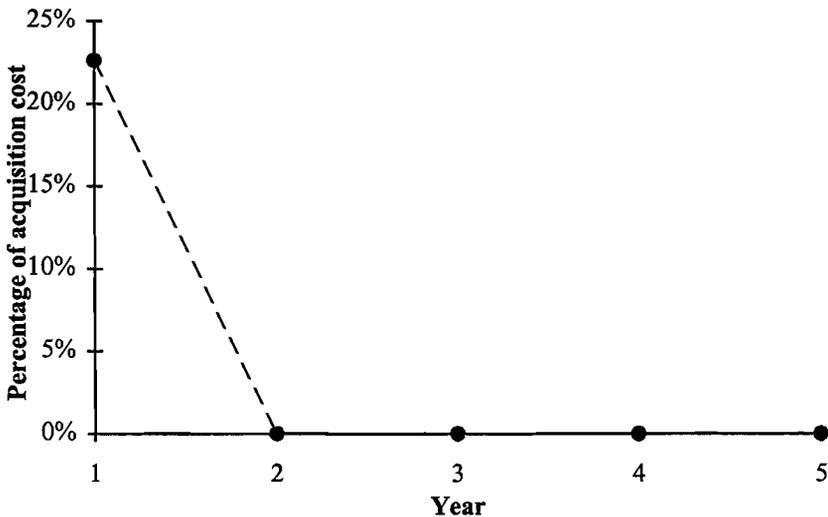


Figure 3.18 *The incremental cash flows that resided Felicia during the postmerger period expressed at the FTE level.*

The relevant financing payments are those related to Florence's acquisition of the combined Frederick and Frank. Florence received a shareholders' contribution from Felicia but it was not possible to decide whether or not it was later repaid. Therefore, any payments related to financing cannot be observed for this case.

Figure 3.18 above presents the incremental cash flows for the acquiring group during the postmerger period. The only component is the tax synergy that occurred in the first year, and which is included in the FTE measure.

3.6.3.3 *Internal cash transactions within the combined entity*

The temporal pattern of the internal net financial transactions between Frederick and Frank and the acquiring group is presented in figure 3.19 below.

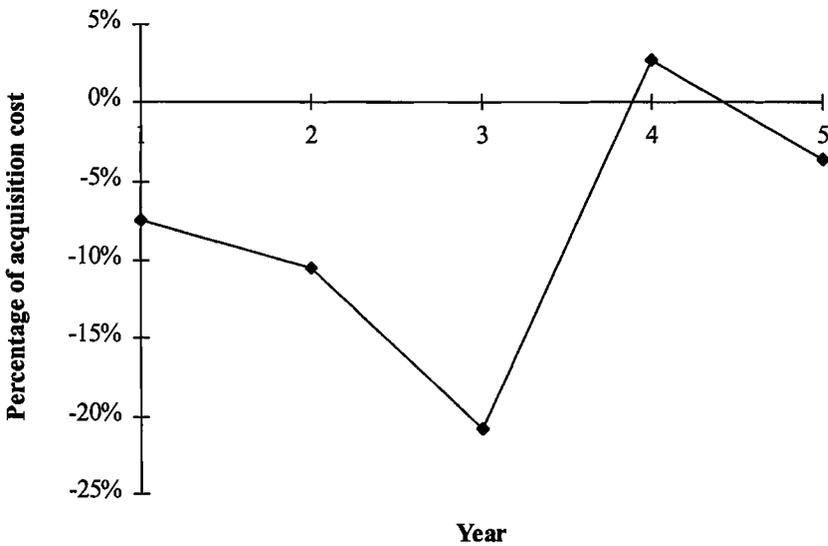


Figure 3.19 The development of the internal net cash transactions between the combined Frederick and Frank, and Felicia during the postmerger period.

Figure 3.19 demonstrates that during the period as a whole, Frederick and Frank were a financial burden for the acquiring group, as the average yearly size amounted to minus 8 per cent of Florence's acquisition cost for the

joint Frederick and Frank. During the first part of the postmerger period, the target group received financial support from the acquiring group in the form of internal loans and group contributions. These transactions were necessary for covering the insufficient operative cash flows of the restructuring phase as was illustrated in figure 3.17. The positive amount during the fourth year was the result of a group contribution.

3.6.4 Empirical question 3: Incremental free cash flow and incremental accounting income

In figure 3.20 below, the incremental free cash flows of the acquiring group and the target group are added together, and compared to the sum of groups' incremental accounting income figures. It is clear in figure 3.20 that AIO and FCF were associated with different temporal patterns. They were, however, rather close to each other, except for in the third year. Then, Frederick and Frank suffered a decline in operating cash flows and made large investments, which increased the difference between FCF and AIO.

AIO had a more stable temporal pattern than FCF. Further, the average AIO during the five-year period was almost 5 per cent of Florence's acquisition cost for the combined Frederick and Frank. The figure was roughly nine percentage points higher than the corresponding average for FCF.

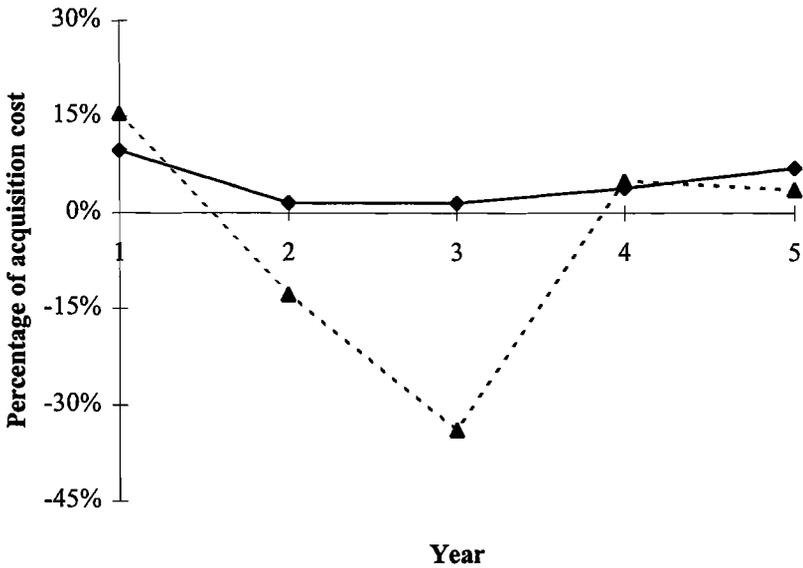


Figure 3.20 The incremental free cash flows (FCF) of Felicia and the combined Frederick and Frank added together, and compared to the sum of their incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line.

The purchase price paid for the shares of Frederick and Frank exceeded their book value of equity. The difference was classified as goodwill on consolidation and corresponded to 50 per cent of Florence's acquisition cost for Frederick and Frank. The goodwill item was initially expensed against Florence's unrestricted equity, but that procedure was later changed and part of the premium was re-activated and depreciated linearly over a period of twenty years. The change was due to a new Swedish accounting standard, RR01. In figure 3.20 the later procedure has been applied.

The incremental income that was due to Florence's acquisition was rather small compared to the income generated by the other parts of the combined

entity. It corresponded to less than 3 per cent of the consolidated operating income.

3.6.5 Empirical question 4: Felicia's treatment of the time pattern and separability of the incremental cash flows

The ex ante calculation that was made in this takeover case was performed by Felicia in connection to her acquisition of Frederick. Florence, on the other hand, did not make any estimate of her later internal purchase of Frederick and Frank.

In order to establish an appropriate purchase price for Frederick, Felicia performed an ex ante calculation. Her starting point was to discover the P/E-ratios that had been used recently in international acquisitions of companies of Frederick's type. She then multiplied the chosen P/E-ratio by Frederick's estimated normal accounting income after financial items, which was defined as:

$$\begin{aligned} & \text{Frederick's income after financial items as an independent company} \\ + & \text{ restructurings and synergies} \\ + & \text{ changes in annual depreciation charges} \\ = & \text{ Frederick's estimated income after financial items} \end{aligned}$$

Felicia did not explicitly consider the issue of separation.

Felicia did not postaudit the acquisition of Frederick. The deputy financial director stated that "ex post evaluations are seldom made. Restructurings protect the management from evaluations".

3.7 Gwen's acquisition of George

3.7.1 Gwen and George as stand-alone companies and the motives for the acquisition

Gwen was a listed Swedish trading company. George was a "sub-sub-subsidiary" of a listed Swedish conglomerate. His operations were similar to Gwen's, although not directly overlapping. Gwen's turnover was 1.1 times higher than George's, and she had 10 per cent fewer employees. Gwen's profitability was said to exceed George's, a fact that could not be verified. Some absolute figures regarding the parties the year before the acquisition are given in table 3.8 below.

Table 3.8 Gwen and George the year before the acquisition

	Gwen	George
Return on average capital employed (per cent)	18.3	N/A
Sales per employee (SEK 000s)	1158	959

In the annual reports, Gwen had expressed her ambition to acquire trading companies within the technical sector. The motive for acquiring of George was to give the group more "legs".

George initially formed two companies under Gwen. The second year after the acquisition, they were divided in five companies with a total of five subsidiaries. This structure was later changed. The last year, the original George was divided into three companies with altogether six subsidiaries.

Gwen financed the deal by exchanging one of her own subsidiaries.

3.7.2 Empirical question 1: Separation of incremental cash flows

The most manifest separation problem concerned the three external acquisitions that George made during the postmerger period. Their consequence was that it was difficult to separate the effects of the takeover under study. Therefore, the subsequent acquisitions, that amounted to less than 8 per cent of Gwen's acquisition cost for George, affect the figures that will be presented for the target group.

A second separation problem relate to the restructurings within the combined entity. George made an internal subsequent acquisition and one internal sell-off, both at book value. These transactions changed the location of the incremental cash flows, making it necessary to adjust the size of the target group's incremental cash flows. A related issue was the transfer of companies within the combined entity. During the second postmerger year, part of the original George was merged with part of the original Gwen. This company, which was rather small, was 50 per cent attributable to George according to the company representative.

A third separation problem concerned the purchase price, since Gwen received George in exchange for part of her own operations. As a purchase price, I have used the book value assigned to the shares of George in the parent company. However, any actual payments relating to financing could not be observed.

Finally, the internal trading that took place between George and the acquiring group gave rise to a separation problem, since the transfer prices were set below market price. George was a net seller in relation to his internal trading partners, and consequently his operative cash flows were understated. The bias could have been corrected to some extent in my analyses by adding an estimated mark-up to George's invoiced internal sales. However, considering the substantial workload associated with identifying the variety of different products and mark-ups, I did not carry out this adjustment.

3.7.3 Empirical question 2: Characteristics of incremental cash flows

3.7.3.1 Incremental cash flows located in George

The temporal patterns of George's incremental cash flows during the post-merger period are depicted in figure 3.21 below which demonstrates that the incremental cash flows varied over the years. The yearly average CFO amounted to 66 per cent of Gwen's acquisition cost for George. The corresponding figure for FCF and FTE were 55 per cent and 51 per cent respectively.

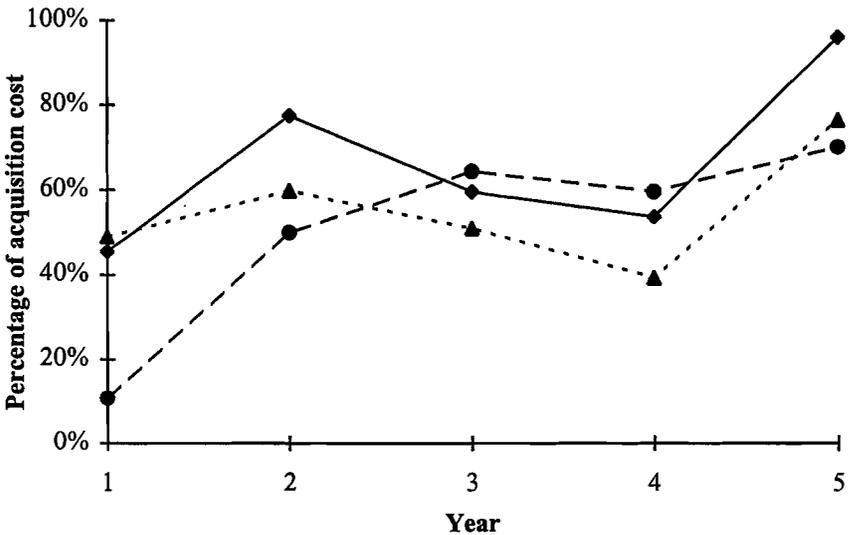


Figure 3.21 The incremental cash flows that resided in George during the postmerger period, expressed as CFO (unbroken line), FCF (dotted line) and FTE (broken line).

The relation between the yearly figures for CFO and FCF indicates that during the postmerger period, George managed to self-finance his invest-

ments, which is not surprising regarding the trading character of the company. The small investments make CFO and FCF close and almost parallel. The explanation for the decline observed in CFO and FCF during the third and fourth years was the restructurings that took place in the originally acquired George.

When comparing CFO and FCF, the pattern is not unambiguous. However, one conclusion is that George had a considerable number of transactions with external capital providers.

3.7.3.2 Incremental cash flows located in Gwen

The effects of the deal appeared in the target group with two exceptions. One concerned the small company that was merged with one of Gwen's other companies, the other the fact that part of George's profit appeared in the acquiring group, since he sold goods below market price. In the latter case, the price received amounted to 8 per cent of Gwen's acquisition cost for George, on a before tax basis, indicating that the implication of the non-market based prices was probably small.

The financing payments related to the deal could not be observed since Gwen financed the acquisition by exchanging one of her own subsidiaries.

Due to the small extent of the incremental cash flows that appeared in the acquiring group, I have chosen not to present their temporal pattern.

3.7.3.3 Internal cash transactions within the combined entity

The temporal pattern of the internal net financial transactions between George and Gwen is presented in figure 3.22 below. The figure demonstrates that George's financial contribution to the acquiring group increased gradually after the first year, when an amount of cash was withdrawn from

George in order to centralise the liquid resources of the new group. The main items that underlie figure 3.22 were group contributions and dividends that George paid to an increasing extent. However, in some years, these items were offset by new internal loans.

The average yearly size of the internal net financial transactions amounted to almost 13 per cent of Gwen's acquisition cost for George.

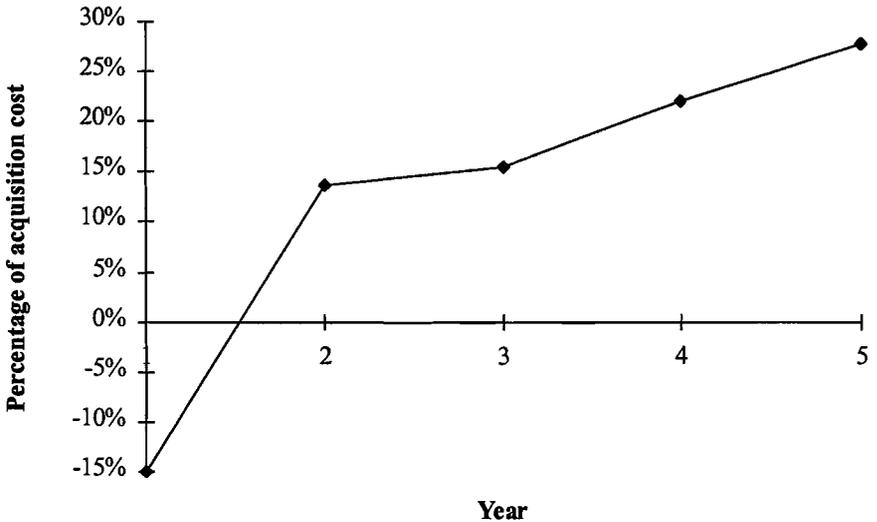


Figure 3.22 The development of the internal net cash transactions between George and Gwen during the postmerger period.

3.7.4 Empirical question 3: Incremental free cash flow and incremental accounting income

In figure 3.23 below, the incremental free cash flows of the acquiring group and the target group are added together, and compared to the sum of groups' incremental accounting income figures.

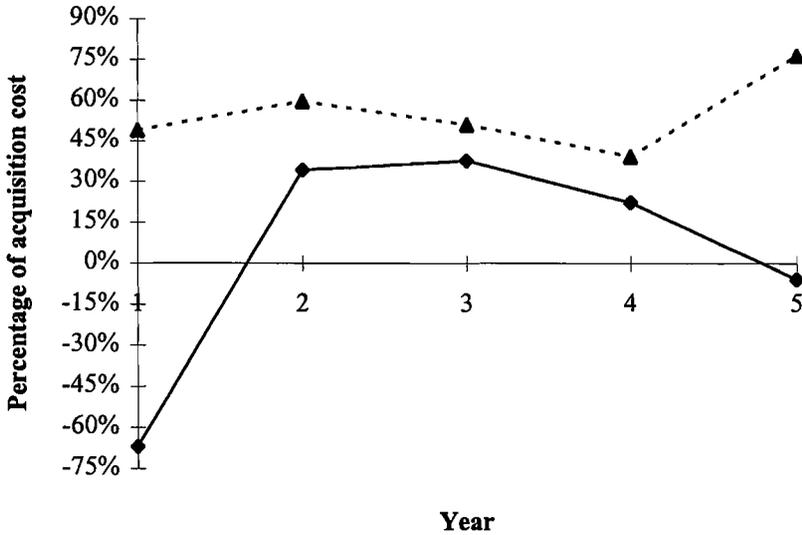


Figure 3.23 The incremental free cash flows (FCF) of Gwen and George added together, and compared to the sum of their incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line.

It is clear in figure 3.23 that AIO and FCF were associated with different temporal patterns. In fact, during several of the postmerger years, they developed in opposite directions. The differences were particularly large during the first and fifth year. As regards the first year, the main explanation was that I deducted the large goodwill item from accounting income. The purchase price for George's shares exceeded his book value of equity by 63 per cent. In reality, the goodwill was charged directly against unrestricted equity. My motivation for the adjustment was that the two procedures have the same effect, inasmuch as they both reduce shareholders' equity and the amount that can be distributed as dividends to the shareholders. In order to facilitate comparisons with the AIO patterns of the other cases, I decided to

charge the goodwill item against income. As regards the last year, the difference was explained by a substantial decrease in working capital.

The FCF figures were continuously higher than the AIO figures. One important explanation for this was that George had made large investments before the deal. They affected the postmerger depreciation charges, which annually exceeded the postmerger investments.

The average FCF during the five-year period was roughly 55 per cent of Gwen's acquisition cost for George. The figure was more than 50 percentage points higher than the corresponding average for AIO.

The incremental income that was due to the acquisition of George had a material impact on the consolidated income, since it corresponded to 32 per cent of the consolidated operating income.

3.7.5 Empirical question 4: Gwen's treatment of the time pattern and separability of the incremental cash flows

Gwen made a capital appraisal of the acquisition of George, but she did not provide me with the model due to secrecy considerations. Neither did she postaudit the takeover. The financial director stated:

"What is interesting today is how we are best to meet the future, not the outcome of the deal ... The managers that had the expectations, do not know what happened, since they have left our company. The managers that know what happened, do not know the expectations, since they were not a part of our company at that time."

Appendix 3.1

Definitions of incremental cash flows and incremental accounting income

Incremental cash flows and incremental accounting income are defined analogously for the target and acquiring group. The logic of the calculation can be demonstrated by one of them. I have chosen the target group as an example.

Income after depreciation
+ external financial revenues
<hr/> Incremental accounting income from operations before tax (AIO_{bt})
- standard corporate tax on AIO_{bt}
<hr/> INCREMENTAL ACCOUNTING INCOME FROM OPERATIONS (AIO)
+ depreciation
- increases in current assets, except liquid assets
+ increases in operating liabilities
<hr/> INCREMENTAL CASH FLOWS FROM OPERATIONS (CFO)
- net investments in fixed assets and takeovers
<hr/> INCREMENTAL CASH FLOWS AFTER INVESTMENTS (FCF)
- external financial expenses after standard corporate tax
+ externally raised financial debts
- amortisation of external financial debts
<hr/> INCREMENTAL CASH FLOWS AFTER FINANCIAL TRANSACTIONS (FTE)
+ internal financial revenues and expenses after standard corporate tax
+ increase in internal financial debts
+ share issues
+ shareholders' contribution
+ received group contributions after standard corporate tax
- dividends paid
- given group contributions after standard corporate tax
<hr/> TARGET GROUP'S NET CASH FLOW (NCF)

The items under the FTE line are not included in the incremental cash flow concept, but are nevertheless provided in order to demonstrate how the exhibit corresponds to the format of an ordinary cash flow statement. However, compared to the legal format of such a statement, I have made some

adjustments in order to allow interpretations in relation to the logic of the different approaches to capital budgeting described in section 2.1. First, the financial net is divided so that the external interest receipts after tax are included in the operative cash flow, while the external interest payments after tax are excluded and classified as financial transactions. Second, all financial transactions with the acquiring group are detached from the conventional format and classified as transactions with the owner.

Appendix 3.2

Summary of particular characteristics of the seven cases

	A	B	C	D	E	F	G
Status of legal acquirer	Listed parent company	Subsidiary of listed company+ parent herself	Parent and sub-subsidiary of listed company	Listed parent company	Parent and sub-subsidiary of listed company	Listed parent company	Listed parent company
Status of legal target	Listed	Son of listed company	Profit centre	Listed	Owned by management	Son of listed company	Son of listed company
Turnover relation	3.6 times	5.4 times	1.4 times	1.2 times	0.6 times	14.8 times	1.1 times
Motives	Reduced vulnerability and stronger negotiation power	New technology, stronger market position, balanced operations	Buy market share and capacity, broaden product range	Increased ennoblement, broaden product range	Complement and internationalise, broaden the product range	Expand in existing areas and extract synergies	Complete the operations and add more legs
Strategic feature	Primarily horizontal, also vertical elements	Horizontal, new customers and technology	Horizontal	Horizontal	Horizontal, same customers, new technology	Horizontal	Horizontal
Acquisition type	Indirect	Indirect	Direct	Indirect	Indirect	Indirect	Indirect
Acquired share	100% gradually	100	-	100 % gradually	100%	100%	100%
Compulsory redemption	Yes	No, one owner	-	Yes	No, one owner	No, one owner	No, one owner
Conditional agreement	No	No	No	No	No	No	No
Balance guarantees	No, target was listed	Yes, and correct	No	No, target was listed	Yes, and correct	Yes, and correct	Yes, and false

	A	B	C	D	E	F	G
Ex ante calculation	Marginal ROI and total EPS	Marginal NPV	Yield value	Not used	Marginal ROCE	Marginal P/E	Not supplied
Acquisition calculus	Over-value -> material fixed assets and goodwill	Over-value -> goodwill	Over-value -> goodwill (deductible)	Over-value -> material fixed assets	Over-value -> goodwill	Over-value -> goodwill	Over-value -> goodwill
Consolidation method	Purchase	Purchase	-	Purchase	Purchase	Purchase	Purchase
Over-value treatment	10% per annum	Three years, 20%, 20% and 60%.	N/A	Not depreciated, allocated to land	Immediate write-down against income	Immediate write-down, later activated	Immediate write-down
Operative vs legal structure	Yes	Yes	Yes	Yes	No	Yes	No
Integration	No	Total and immediate	Independent profit centres	Operative at once, legally later	No	Yes, fast	Yes
Synergies	Yes, in the target group	No	~ 5% of the purchase price per annum	Yes, after subsequent acquisitions by parent company	No	Yes, the most important motive	No
Internal trade	No	N/A	No	Yes, mainly operatively	Yes, to small extent.	Yes, to small extent	Yes, to small extent
Settlement of internal accounts	Not relevant	N/A	Clearing on accounts later through internal bank	Cash	Cash		Cash

	A	B	C	D	E	F	G
Form for distribution of earnings	Group contributions and dividends	Not relevant	N/A	Group contributions and dividends	Group contributions	Group contributions	Group contributions and dividends
Calculation of distribution of earnings	Minimise tax payments. All companies to have the group's tax rate. Calculus known in advance.	Transfer as much as possible as soon as possible	N/A	Minimise tax payments	N/A	Amount equal to average earnings payout ratio on stock market. Calculus known in advance.	Minimise tax payments
Payment of group contributions	Partly	Not relevant	N/A	Paid t+1	Paid t+1	Paid t+1	Paid t+1
Capital infusion	Yes	N/A	N/A	No	Yes	Yes	Yes
Subsequent acquisitions	Yes	No	No	Not by the target group	No	Yes	Yes
Sell-offs	No	Not relevant	No	Yes	Yes	Yes	Yes
Loss carry forward	No	2% of purchase price	N/A	No	No	No	No
Write-down or write-up of shares	Yes	Yes	N/A	No	No	Yes	Yes
Postaudit	No	Yes	No	No	Yes	No	No

4 Analysing the empirical questions regarding the first purpose

In this chapter, I terminate the elaboration of the first purpose of this thesis. Sections 4.1 to 4.4 are each devoted to one of the four empirical questions that relate to the first purpose. Each section contains two parts: a comparison between the seven takeovers in order to reveal systematic patterns as regards the particular empirical question, and the empirical conclusions that can be formulated on that basis. The theoretical implications of the empirical conclusions presented are discussed in chapter 7.

4.1 Empirical question 1: Separation of incremental cash flows

The first empirical question treats the difficulties that are at hand when incremental cash flows are to be separated from other cash flows in the combined entity. Section 4.1.1 consists of a comparison between the various separation problems revealed in the case descriptions in chapter 3, and section 4.1.2 comprises the empirical conclusions regarding the issue of separation.

4.1.1 Separation problems observed in the seven takeover cases

I have intended to follow the incremental cash flows associated with seven corporate acquisitions during a five-year postmerger period. The approach revealed that the issue of separation was manifest. It was most apparent for the acquisition of Benjamin, which had to be excluded due to his fast integration into Beatrice's other activities, David, who could only be followed for three years, and Frederick, who had to be analysed together with Frank with whom he was merged after being taken over by Felicia. For these three cases, the integration of the target impeded a strict application of the incremental approach in that the effects of the particular acquisition under study could not be separated from other aspects of the combined entity's activities. Nevertheless, David and Frederick could be analysed, although not in the format that was originally intended. Regarding these two targets, and the other four that could be followed, five principal types of separation issues emerged.

One frequent separation issue concerned *restructurings of the target's operations*. These were made either in a legal format, as transfers of ownership between companies within the combined entity, or in a more informal way, where the legal structure was unaffected but the responsibilities of particular companies altered. The legal type was more common and often motivated by tax considerations. By forming a group of all subsidiaries in a specific country, instead of letting the subsidiaries belong to different parent companies, tax advantages can be obtained in particular countries.

Regarding the restructurings that were formal in a legal sense, two principal problems emerged. The first problem was that the transfer price that was assigned to the sale of a particular company normally corresponded to its book value. The company representatives considered the price too low, hence the selling company did not receive fair compensation for the cash flows it gave up. Consequently, the buyer's cash flow was too high, and the seller's too low the year in which the transfer was carried out. Further, these transactions also had long-run implications for the selling entity, since the

divested unit was often a foreign sales company which meant that the seller was deprived of long run cash inflows.

The restructurings that were informal, that is, where the legal structure was not affected, were less common but more troublesome than the formal ones. They typically affected the extent and direction of part of the target's operations. Two concrete examples occurred in Christine's acquisition of Charles. First, she centralised Charles' administrative functions and integrated them with her own; as a consequence his cash flows were improved. Second, both Charles and Christine had their own wholesalers before the deal. After the takeover, Christine transferred part of Charles' wholesaling activities to herself, affecting the observed level of Charles' operative cash flows.

Another separation issue concerned *external acquisitions* by the target group. Both Alfred and George took over three companies during the post-merger period. The effects of such a decision are troublesome in a strict application of the incremental approach, and in fact a reflection of the separation issues discussed in this section. On the other hand, a procedure for sorting out the effects of a subsequent acquisition implies that various forms of target expansion will be treated differently, since organic growth will be included in the target's cash flow.

The target group can also change its appearance through sell-offs to external parties. The price received for the divested entity is probably market based, and hence the decision as such does not give rise to any separation problems. It can however have a considerable impact on the target's cash flow pattern, especially during the year in which the sell-off is carried out.

A third separation issue concerned *synergies*. There are two aspects to this separation problem. One aspect concerns the synergies that arose from the takeover under study, but that appeared outside the target group. This kind of synergy was found in the takeovers of Charles, David and Frederick. Another aspect concerns the synergies that occurred in the target group, but that originated from another takeover by the acquiring group. This kind of synergy was found in David.

It was easy to identify the companies affected by the synergies, since the company representatives knew where to look. It was more difficult to establish the size of the cash flows. The company representatives could give estimates, but more precise figures were, for obvious reasons, hard to obtain.

A fourth separation issue concerned *internal trading* where the transfer price was not market based. This situation was manifest in George, who was a net seller in relation to his internal trading partners. Consequently, his operative cash flows were understated.

To identify the cash flows that originated from internal trading was otherwise rather uncomplicated. The sole source of difficulty was due to unclear definitions of the concept "internal trading". This was apparent in the cases where the buyer had a subordinated role in a bigger group. Under such conditions, the notion could refer to transactions within the group where the legal acquirer was the parent company, or it could also refer to transactions with a more extensive group. As a consequence, the accounting system had to be consulted in order to identify every counterpart for these internal transactions.

Fifth, it is important to stress the likely presence of *non-separable cash flows* associated with the takeover cases. Their character can be assumed to be intangible and hence not observable or separable. Two examples might clarify the point. First, the acquisition of the target group makes the combined entity larger and perhaps more well known, which may attract new resources. Second, the acquisition of the target group can lead to sacrifices that are not measurable, such as an increasing demand for management capacity. The implications of non-separable cash flows for this study is that the separation problems might be understated, and that the prescribed cash flow patterns might be less accurate. For obvious reasons, the importance of these potential shortcomings are virtually impossible to assess.

4.1.2 Empirical conclusions regarding the first empirical question

On the basis of the empirical observations that I have made, I can now establish the empirical conclusions regarding the first empirical question related to the first purpose of this thesis.

The problems of separating the incremental cash flows associated with a corporate acquisition were common in the seven cases that I have studied. In three of these cases, the particular acquisition that was to be analysed could not be studied in isolation from other activities of the combined entity. The most severe and also most frequent separation problem arose when part of the target's operations was restructured and merged with other parts of the combined entity. Another related problem occurred when the target's character changed due to external subsequent acquisitions; the implications of each takeover decision consequently became quite difficult to determine. The events that caused the separation problems typically occurred at the beginning of the postmerger period, and hence affected the major part of it.

In the light of the above empirical conclusions, it is motivated to discuss whether my measurements of the incremental cash flows are precise enough to allow for the detailed descriptions of the incremental cash flow patterns presented in chapter 3. It is evident that the formal restructurings that took place in the combined entity impeded the use of legal accounting reports as a source of information regarding the incremental cash flows. Fortunately, in the most severe cases, I had the opportunity to consult operative accounting reports, which were established as if certain internal sell-offs and takeovers, involving foreign sales companies for example, had never taken place. Consequently, the prospects of separating the target group from other parts of the combined entity were enhanced by the presence of operative accounting reports. In that context, the accuracy of these reports became an essential issue, but for the purpose of this study, I have assumed that it was satisfactory.

Some of the separation problems made it impossible to accurately establish the size of a particular incremental cash flow, for example, the informal

restructurings such as the centralisation of Charles' administrative functions, or the synergies that resided in the acquiring group. In these situations, I used the estimates of the company representatives to assign a value to the particular cash flow.

The internal trading transactions that were settled below market price could have been adjusted by adding an estimated mark-up to the seller's invoiced internal sales. However, I decided against it for two reasons: the relatively small size of these transactions, and the considerable effort that would have been necessary for carrying out the adjustment.¹

Finally, the potential presence of non-separable cash flows could obviously not be taken into account.

4.2 Empirical question 2: Characteristics of incremental cash flows

The second empirical question comprises four characteristics of the incremental cash flows, namely their location, composition, relative size, and temporal pattern. The question will be analysed stepwise. First, I summarise the cash flows that I observed. This will be done in three separate sections, one for the incremental cash flows that resided in the target group, one for those that occurred in the acquiring group, and finally one for the internal cash transactions. Thereafter, I present the empirical conclusions regarding the second empirical question related to the first purpose of this thesis. Finally, I discuss the validity of the empirical conclusions.

It is worth emphasising that I in this chapter, in order to compare the take-overs, have applied a uniform scale for the graphical illustration of a particular cash item. Consequently, some of the graphs that were presented in

¹ Gwen's company representative provided me with the relevant estimates that I would have needed for this procedure.

chapter 3, and that are based on individual scales, may appear different in this chapter although they provide the same information.

4.2.1 Incremental cash flows located in the target groups

The main theme of this section is to discuss similarities and differences between the seven takeover cases as regards the characteristics of the incremental cash flows that resided in the target group. To start with, table 4.1 presents the average yearly incremental cash flows for the three levels of the concept for each acquisition. The takeover of Benjamin is excluded, since his fast integration with Beatrice's other activities impeded the incremental approach. In this context, it must be pointed out that Felicia's acquisition of Frederick was omitted and replaced by Florence's acquisition of the joint Frederick and Frank. Further, the FTE measure was not applicable in Charles, since he was a profit centre and not a legal person. Finally, Daisy's takeover of David was only possible to follow for three years due to a radical change in the group's structure after that period. All cash flows are regarded from the perspective of the acquiring group, and hence positive and negative amounts should be interpreted accordingly.

Table 4.1 The target groups' average yearly postmerger incremental cash flows as a percentage of the acquirers' acquisition cost

Cash flow item	Takeover					
	A	C	D	E	F	G
CFO	24.3%	12.5%	22.9%	57.2%	12.7%	66.5%
FCF	-4.1%	-16.8%	5.8%	22.6%	-4.5%	55.1%
FTE	-9.3%	N/A	-1.8%	-1.9%	-5.6%	50.9%

On the basis of table 4.1 some observations can be made. In terms of CFO, all target groups demonstrated positive figures during the postmerger period as a whole. This is not the case, however, when the investment expenditures are considered and the focus changed to FCF. At this level, half of the target groups had positive figures. Finally, for FTE the pattern was different again, and at this level only George attained a surplus.

Figure 4.1 is based on table 4.1. It shows the development of the yearly CFO for the six cases where this item could be observed.

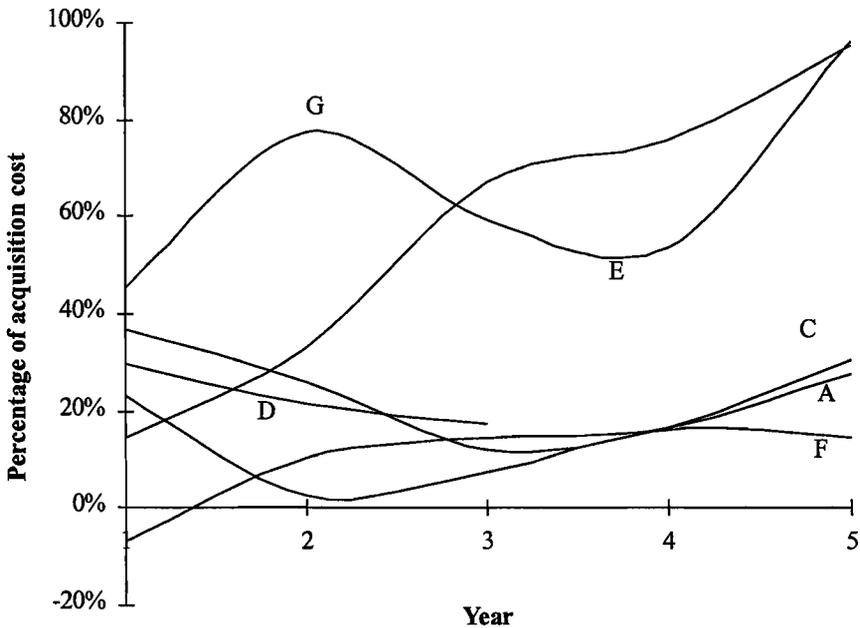


Figure 4.1 The incremental cash flows that resided in the target groups during the postmerger period expressed at the CFO level.

There is a tendency in figure 4.1 that the various CFO patterns are relatively stronger at the end of the postmerger period than at the beginning. Disregarding the shortened period of D, this observation is valid for Charles,

Edward, the joint Frederick and Frank, and George, but is not completely true for Alfred.

Figure 4.2 recognises the impact of investment expenditures by looking at FCF. The tendency that appeared in figure 4.1, that is, that the CFO patterns were stronger at the end of the postmerger period, also seems to hold for FCF. What is more, the FCF patterns reveal that the development at times was fairly negative during the first part of the postmerger period, and that only after the third year FCF did start to recover, in several cases after years of negative figures.

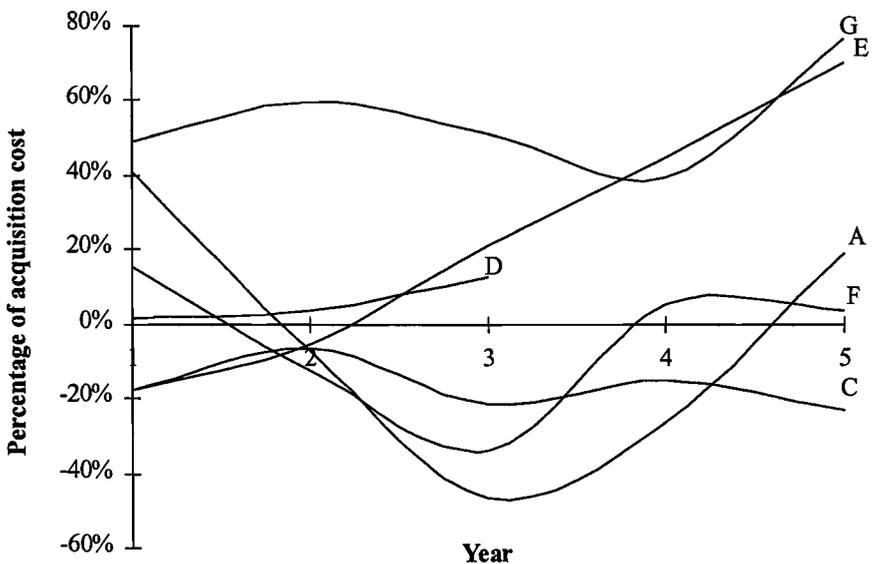


Figure 4.2 The incremental cash flows that resided in the target groups during the postmerger period expressed at the FCF level.

The pattern that emerged for FCF in figure 4.2 is reinforced when looking at the target groups' incremental cash flows at the FTE level, which is the scope of figure 4.3. It must be remembered in this context that the measure

only takes into consideration financial transactions with external capital providers. Hence, various forms of financial cash flows within the combined entity are disregarded.

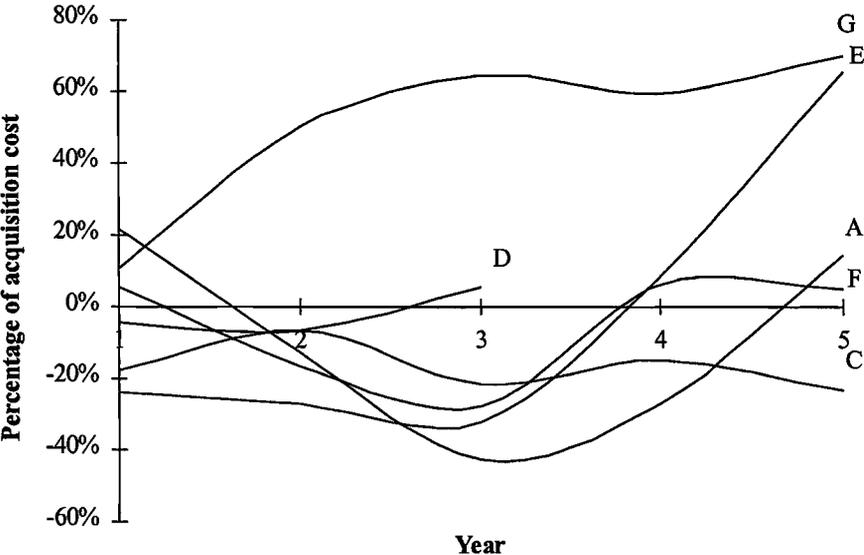


Figure 4.3 The incremental cash flows that resided in the target groups during the postmerger period expressed at the FTE level.

Thus far, I have concentrated on the part of the incremental cash flows that resided in the target group. I have reported that they demonstrated a recovery at the end of the postmerger period. This is an interesting finding, and a relevant question in this context is whether the incremental cash flows that resided in the acquiring groups alter this image. That question will be addressed in section 4.2.2.

4.2.2 Incremental cash flows located in the acquiring groups

Part of the incremental cash flows associated with a particular takeover appeared in the acquiring group in all the cases except for Gwen, and affected different levels of the cash flow concept. Table 4.2 presents the average yearly incremental cash flows for the different levels of the concept for each acquisition. The takeover of Benjamin is excluded, since his fast integration into Beatrice's other activities impeded the incremental approach. Gwen's acquisition of George is not included, since all merger related cash flows were located in George himself. The acquisition of David is followed for three years. The figures in column F refer to Florence's acquisition of the joint Frederick and Frank. Since CFO and FCF for the acquiring group coincided in all cases, they are treated on a single line. All cash flows are regarded from the perspective of the acquiring group, and hence positive and negative amounts should be interpreted accordingly.

Table 4.2 The acquiring groups' average yearly postmerger incremental cash flows as a percentage of the acquirers' acquisition cost

Cash flow item	Takeover				
	A	C	D	E	F
CFO and FCF	-5.5%	-3.3%	2.4%	0.0%	0.0%
FTE	-5.5%	-8.3%	-12.4%	-7.5%	4.5%

On the basis of table 4.2, we can observe that in terms of CFO and FCF, the acquiring groups' figures varied in size and sign. As regards FTE, the average figures were predominantly negative due to the recognition of the investment related payments. The exception was Florence, where such payments could not be observed.

The CFO and FCF measures of the acquiring group were affected by synergies in Christine and Daisy. These items appeared continuously during the postmerger period, and their origin was industrial. Christine centralised

Charles' administrative functions and consequently experienced cash outflows, and Elizabeth had restructuring costs for Edward's foreign subsidiary. Figure 4.4 depicts the temporal patterns of the above events.

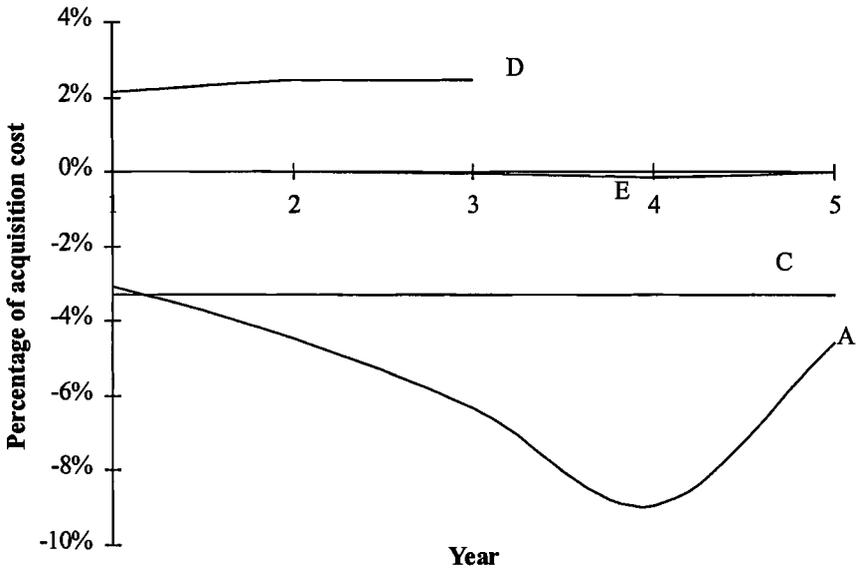


Figure 4.4 The incremental cash flows that resided in the acquiring groups during the postmerger period expressed at the CFO and FCF level.

In addition to the effect that originates from CFO and FCF, all acquiring groups except Felicia and Gwen, experienced a merger impact on their FTE, due to the financing of the deal. On the whole, these effects occurred continuously and demonstrated a smooth trend with some exceptions as is evident in figure 4.5 below. Further, Felicia benefited from a tax synergy during the first postmerger year.

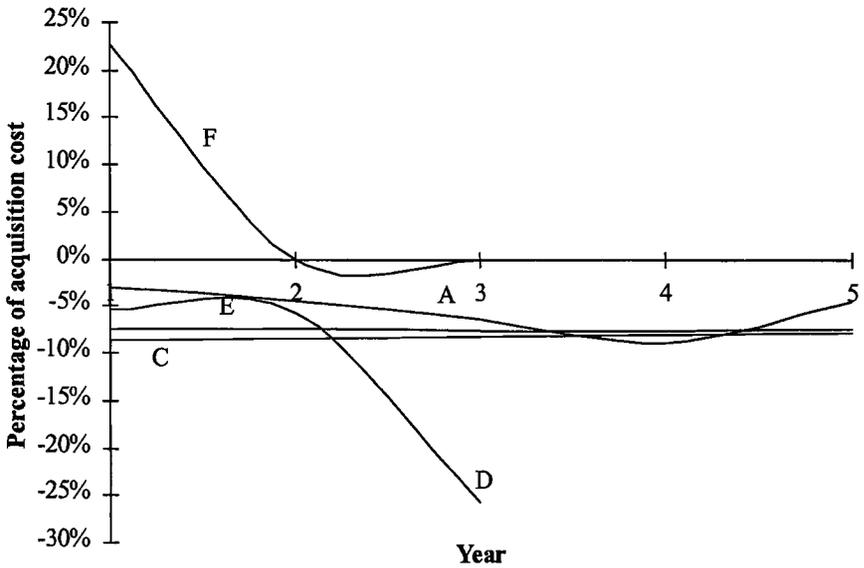


Figure 4.5 The incremental cash flows that resided in the acquiring groups during the postmerger period expressed at the FTE level.

To conclude, in the preceding section it was observed that the target groups' incremental FCF recovered at the end of the postmerger period. The same conclusions do not hold for the FCF measure in the acquiring groups.

4.2.3 Internal cash transactions within the combined entity

The internal cash transactions within the combined entity are not included in my incremental cash flow concept since they do not affect the present value of the particular takeover from the acquiring group's perspective. Yet, their size and temporal pattern can complement the present analysis, inasmuch as they reveal whether the target contributed financially, for example with

group contributions and dividends, to the acquiring group during the post-merger period or whether it was more of a burden. For the five targets where the internal net financial transactions could be observed, the average yearly size is presented in table 4.3 as a percentage of the acquiring group's acquisition cost for the target. All cash flows are regarded from the perspective of the acquiring group, and hence positive and negative amounts should be interpreted accordingly.

Table 4.3 The targets' internal net financial transactions

Item	Takeover				
	A	D	E	F	G
Internal cash transactions	4.9%	-3.1%	-2.6%	-7.9%	12.8%

Table 4.3 illustrates that two of the five targets contributed to the acquiring group as regards internal cash flows during the postmerger period as a whole. However, what is more interesting is the temporal pattern of these transactions that emerge in figure 4.6 below. The general impression is that the target groups were financial burdens for the acquiring groups at least during the first part of the postmerger period, and that only towards the last year of the evaluation horizon did they start to contribute financially. This finding is consistent with the finding that the operative incremental cash flows associated with the takeovers seemed to recover at the end of the postmerger period.

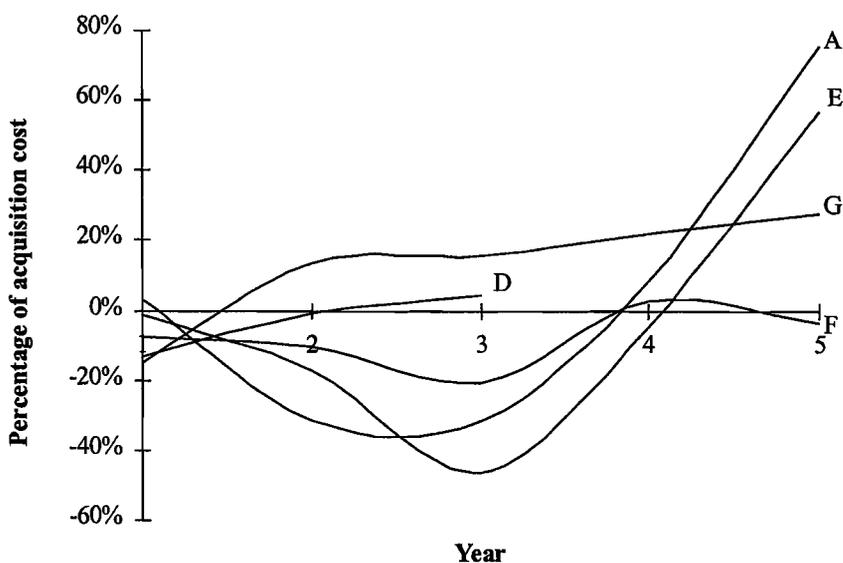


Figure 4.6 Cash transactions between the target groups and the acquiring groups during the postmerger period.

4.2.4 Empirical conclusions regarding the second empirical question

Based on the preceding sections, the empirical conclusions regarding the characteristics of the incremental cash flows associated with the seven takeovers can now be established.

The incremental cash flows that arose from the seven takeovers that I have studied resided in both the target and the acquiring group. The relative importance of the two locations was dependent on which cash flow concept was in focus. In terms of CFO, the main part of the incremental cash flows appeared in the target group, while the pattern was less obvious at the FCF level.

The incremental cash flows that were located in the acquiring group were mainly due to synergies, restructurings, and financing of the acquisition. Those residing in the target group, however, reflected wider aspects of business life, although they have been presented in an aggregated format in this thesis.

The cash flows of the target group and the acquiring group can be added together. This procedure illustrates that three of the six takeovers generated positive cash flows on the FCF level during the postmerger period. As regards FTE, only one case was associated with a positive postmerger incremental cash flow. These findings are illustrated in table 4.4, which is processed from tables 4.1 and 4.2.

Table 4.4 The sum of the acquiring groups' and the target groups' average yearly postmerger incremental cash flows as a percentage of the acquirers' acquisition cost

Cash flow item	Takeover					
	A	C	D	E	F	G
FCF	-9.6%	-20.1%	8.2%	22.6%	-4.5%	55.1%
FTE	-14.8%	-25.1%	-14.2%	-9.4%	-5.6%	50.9%

For the majority of the cases, temporal patterns behind these average figures reveal that the later postmerger years yielded better cash flows than the earlier years. Due to the relatively flat incremental cash flow patterns in the acquiring groups, this conclusion can be reached by studying the patterns for the target groups in figure 4.2. The conclusion is supported by the observation that during the first part of the postmerger period, the takeovers were often a burden on the acquiring groups. This situation did not change until towards the end of the postmerger period, when the acquisitions started to yield positive incremental cash flows.

The most probable explanation for the fluctuations in the temporal patterns seems to be that the restructuring activities that took place in all the cases

delayed the occurrence of the positive effects of takeovers. However, it is recognised that these restructurings are likely to be necessary for attaining the positive cash flows towards the end of the postmerger period.

4.2.5 The validity of the observation regarding improved incremental cash flows

It is relevant to discuss whether the incremental cash flow patterns that have hitherto been presented can be assumed to describe actual courses of events, or if they can be explained by other factors. In this context, I focus on the observation that the incremental cash flows that resided in the target groups appeared to be higher at the end of the postmerger period than at the beginning or in the middle of it. I also elaborate the conclusion that this was due to the presence of restructuring activities.

A number of alternative explanations exist for the cash flow patterns which have been observed. One is that the targets' operations, which included most of the takeovers' incremental cash flows in terms of CFO, are more extensive at the end of the postmerger period, due to subsequent acquisitions or organic expansion. Another possible explanation is that the size of the targets' operations is fairly constant, but that the rate of inflation makes the cash flows grow. A third reason could be that the business climate in general developed positively during the postmerger period. A fourth possible explanation is that the observed cash flow patterns are not typical of corporate acquisitions per se, but can be explained by the general characteristics of the capital intensive industries which the sample predominantly consists of. Finally, the separation problems may potentially have been so severe, that the observed cash flows do not accurately describe the effects of the particular takeovers that I have studied. If this was the case, it would be meaningless to analyse their patterns.

The fourth explanation recognises that the sample mainly consisted of capital intensive firms with assets that have a long useful life. Such industries are likely to have cyclical cash flow patterns. If I had captured a period

around the implementation of a new and substantial machinery investment, I would have expected to observe rising cash flows after some years. A careful inspection of the development of the investment activities in the four capital intensive targets where data were available (i.e. Alfred, Charles, David, and Frederick), reveals that they demonstrated an irregular pattern, with a peak in investment expenditures during the third year. However, in such industries investments are often said to start paying back after a number of years. Therefore, it is unlikely that the investments carried out in the middle of the postmerger period explain why the operative incremental cash flows rose towards the end of it. Having said that, I should point out that I might have chosen five abnormal years in the life of a set of assets that has a useful life perhaps five or six times longer than that period. This should be born in mind in the following discussion.

As regards the fifth alternative explanation given above, my judgement is that the cash flow patterns are sufficiently accurate for my purposes (see section 4.1.2).

The third reason can probably be disregarded, since the acquisitions that I have studied were made at different points in time, and hence the different postmerger periods did not comprise the same years. This is important, since the business climate in Sweden was not constant during the period that ranged from the earliest target's first postmerger year, that is, Edward in 1984, to the latest target's fifth postmerger year, that is, the joint Frederick and Frank in 1993. It was not possible to detect any substantial differences as regards the temporal pattern between the takeovers whose postmerger periods were at different points in time.

The development of the target groups' invoiced sales is one factor that relate both to the explanation that the patterns develop favourably as the target's operations become more extensive, and to the explanation that they are a function of the inflation rate. Since I do not have the necessary information to separate these two explanations, figure 4.7 below demonstrates their joint impact. The pattern that emerges corresponds partly to that of figure 4.2, which implies that the explanations of a price and volume impact on the observed FCF patterns cannot be disregarded.

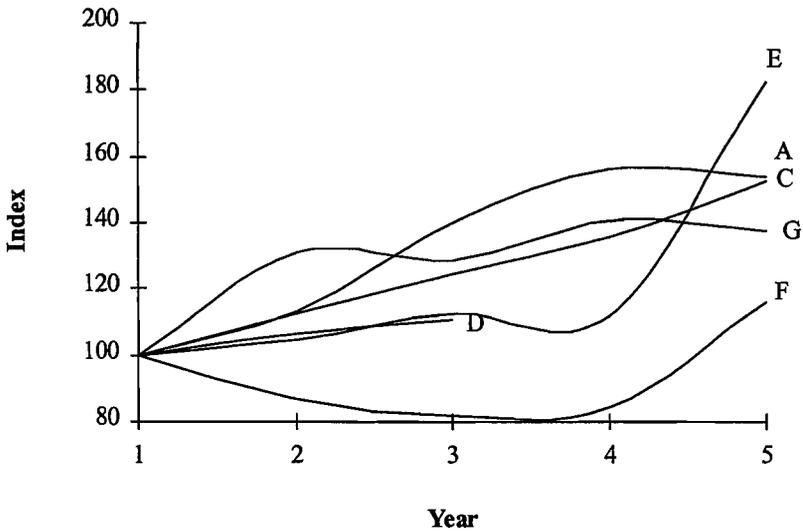


Figure 4.7 The development of the target groups' invoiced sales during the postmerger period in terms of an index where the first postmerger year equals 100.

Finally, the explanation that the observed cash flow patterns were due to the impact of restructurings, which delayed the appearance of the positive merger effects, will now be discussed. The validity of this explanation can be elucidated by studying the development of the target groups' profit margins during the postmerger period. A stronger margin during the latter years would be consistent with the explanation, and also indicates that the price and volume effects mentioned above are relatively less important, since they would result in a flatter pattern. Figure 4.8 shows the target groups' incremental CFO as a percentage of their invoiced sales. I have chosen CFO rather than FCF in this context in order to eliminate the effect of the target's investment activities. The patterns that emerge correspond to those of figure 4.2. In other words, CFO was stronger towards the end of the postmerger period, probably due to the restructuring activities that postponed the ap-

pearance of the more positive takeover effects until the end of the postmerger period.

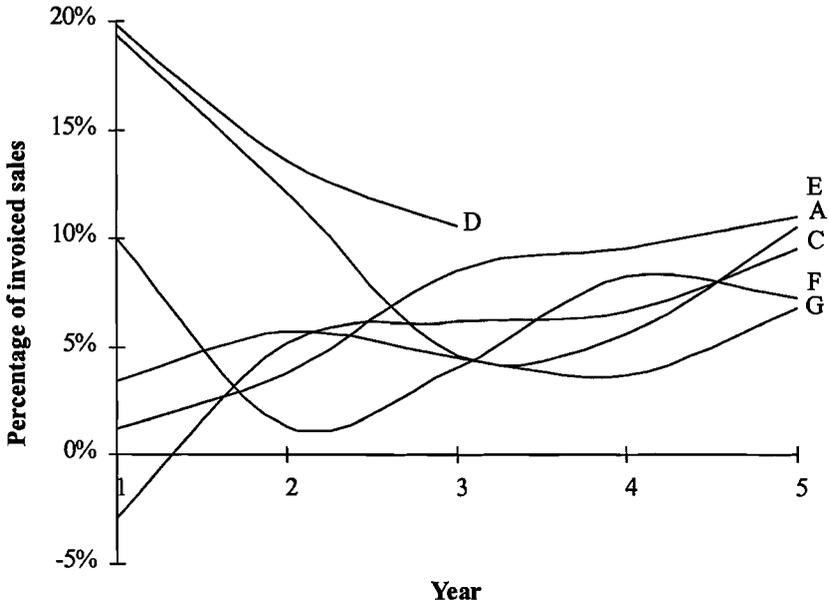


Figure 4.8 The incremental cash flows that resided in the target groups during the postmerger period expressed at the CFO level in relation to invoiced sales.

4.3 Empirical question 3: Incremental free cash flows and incremental accounting income

The third empirical question comprises an analysis of the relation between the incremental free cash flows and the incremental accounting income. AIO represents the takeover's effects on the consolidated income. Its tempo-

ral correlation to FCF is hence essential for the interpretation of the development of the postmerger consolidated income.

In chapter 3 the temporal relation between the two concepts was illustrated for each takeover case. It is possible to add together the patterns of the various cases, and to create average FCF and AIO for each postmerger year. The result of such a procedure is portrayed in figure 4.9. It should be observed that the figures relate to the combined entity. The FCF figure, for example, is the sum of the FCFs that occurred in the acquiring groups, and the FCFs that emerged in the target groups. The broken line in the first year illustrates the average AIO that would have appeared if I had not charged Gwen's goodwill depreciation against income, but instead directly against shareholders' equity (see section 3.7.4 for a discussion of this issue).

Figure 4.9 clearly shows that the average FCF and AIO patterns were different. Further, they demonstrated the opposite development during each year; the difference between the concepts was largest in the first and third postmerger year. As regards the first year, half of the difference can be attributed to immediate writedowns of goodwill. This is illustrated by the distance between the unbroken AIO line and the broken AIO line in figure 4.9. The other half of the difference can be explained by restructuring expenses that were not associated with payments during the same period. In the third year, several of the targets made large investments, and as a consequence FCF, *ceteris paribus*, declined and came short of AIO. However, after the investment year, AIO decreased mainly due to depreciation charges associated with the investments.

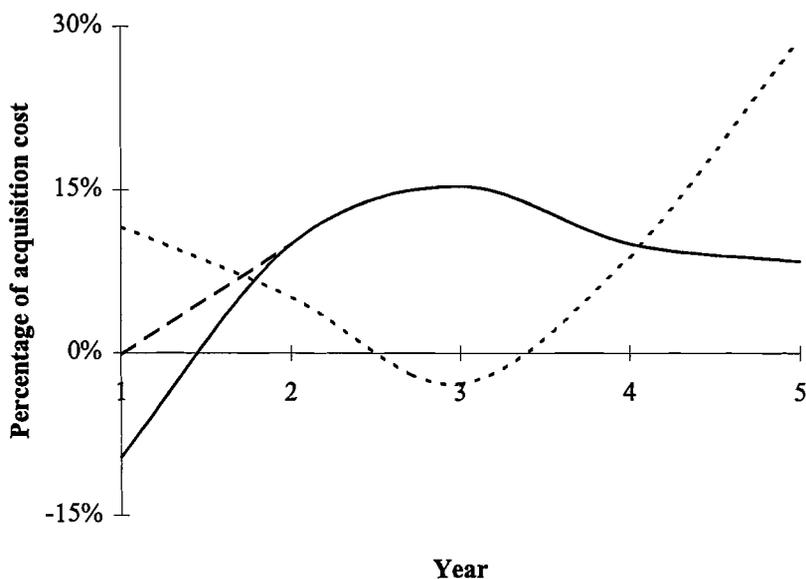


Figure 4.9 The average incremental free cash flows (FCF) of the acquiring groups and the target groups added together, and compared to the sum of their average incremental accounting income (AIO) during the postmerger period. FCF is represented by the dotted line, and AIO by the unbroken line. The broken line illustrates an alternative measure of AIO for the first year. It excludes Gwen's immediate writedown of goodwill.

It must be emphasised that considerable variations between the different cases lies behind the patterns in figure 4.9. This was clearly demonstrated in chapter 3. The conclusion is that the patterns are not representative of individual takeovers, but that they can represent the average pattern of a sample of firms.

When the average figures for the entire postmerger period are studied, it is clear that the concepts are close to each other. The average incremental free

cash flows amounted to 10 per cent of the average acquisition cost. This was roughly three percentage points higher than the unbroken AIO line in figure 4.9, and two percentage points higher than the alternative AIO, represented by the broken line in figure 4.9.

The comparison between AIO and FCF illustrates the importance of the goodwill issue. In fact, a substantial part of the postmerger difference between them, when expressed as an average of all cases, can be attributed to the depreciation of goodwill. In the seven cases, the goodwill item was treated differently. Straight-line depreciation was applied by Anne during the whole period, by Beatrice at the beginning of the period, and by Felicia during the latter years. Elizabeth and Gwen wrote down the goodwill item immediately, as did Felicia although she later changed to a straight line depreciation. Beatrice also wrote down the goodwill item, but not until the third year when she changed accounting principles. For Christine and Daisy, goodwill on consolidation was not an issue.

On the basis of the empirical observations that I have made, I can now establish the empirical conclusions regarding the third empirical question related to the first purpose of this thesis.

The incremental cash flows and the incremental accounting income are associated with different temporal patterns. The main reasons are timing differences between restructuring expenses and restructuring payments, changes in the level of investment expenditures, and the presence of goodwill on consolidation. The average incremental cash flow for the entire sample of cases during the postmerger period, however, was close to the average incremental accounting income. The relation between the concepts is essential when the implication of a takeover is assessed on the basis of the consolidated income statement.

Two aspects must be recognised in relation to the conclusion presented above. First, the general validity of the observed patterns can be discussed. I have studied related acquisitions, where the merging parties represented capital intensive industries. In related takeovers, the purchase price is likely to exceed the book value of the target's equity, which might result in goodwill charges against income. It is also probable that the group is re-

structured in order to attain the synergies that partly motivate the price level. Further, capital intensive industries make substantial investments, which increases the difference between operating cash flows and operating accounting income during particular periods. It can hence be questioned whether the observed patterns are representative of takeovers whose characteristics differ from those represented in this study. It is possible that the conclusions would be different in a sample that comprises conglomerate acquisitions of less capital intensive targets.

The second aspect to consider in relation to the conclusion concerns the significance of the acquisition. The fact that the incremental accounting income describes a different temporal pattern than the incremental cash flows, is important for assessments made on the consolidated level only when the takeover's contribution to the consolidated income is substantial. In the cases I have studied, the effect was manifest in the cases of David, Edward and George, where the incremental accounting income at least corresponded to 30 per cent of the consolidated operating income. In the other cases, the effect was between 2 per cent and 6 per cent of the consolidated accounting income.

4.4 Empirical question 4: The acquirers' treatment of the time pattern and separability of the incremental cash flows

The fourth empirical question focuses on how the acquiring groups treated the issues of incremental cash flows and their separability in their capital appraisals and postaudits of a takeover.

All the companies made ex ante estimates, except for Daisy who, when it became clear that David was for sale, took the opportunity to acquire without further quantitative analysis. Four of the remaining six companies provided their estimates, the exceptions being Christine and Gwen. Christine's documentation about the model had disappeared, but she informed me that

she had used a discounted cash flow valuation. Gwen did not provide the relevant information due to secrecy considerations. The two companies whose models I did not receive differed from the other four in that the company representatives did not personally experience the initial phases of the merger process, that is, they could be classified as recent interpreters (see section 2.5.5). Moreover, Anne used two calculation approaches.

Table 4.5 below summarises the methods applied. The ‘focus’ line signifies whether the evaluation was made on a total or incremental basis. The ‘measure’ line should be understood independently of the preceding line, that is, a particular measure could have been applied for either a total or an incremental evaluation.

Table 4.5 The applied ex ante estimates in the cases studied.

	Anne	Anne	Beatrice	Elizabeth	Felicia
Focus	Incremental	Total	Incremental	Incremental	Incremental
	income	income	cash flow	income	income
Measure	ROI	EPS	NPV	ROCE	P/E
Hurdle	Group hurdle	Group with- out Alfred	NPV \geq 0	ROCE \geq 20%	Exceed the estimates

Table 4.5 shows that an incremental approach was adapted in four of the five models. However, only one of the companies focused on the incremental cash flow, as the capital budgeting literature prescribes, while the other three started in the accounting concept of income. Further, the only approach that had a total focus, that is, that measured the combined entity into which the target was included, was also founded in accounting. Hence, it is clear that an estimated accounting income was the cornerstone of the analyses, which is consistent with Ingham et al (1992), who concluded that the most frequently used measures were ROCE and ROI in their sample of 146 large UK companies in the mid 1980s.

It must be recognised that the valuation model that was based on ROCE is linked to the value of equity via expression [2.6]. The EPS and P/E measures are related to the equity value only under very particular circumstances.

Another observation that can be made from the case descriptions in chapter 3 is that the companies did not devote much attention to the temporal pattern of the future incomes or cash flows that they estimated. The estimates were generally not detailed and quantified enough to allow for a comparison between the actual postmerger development and the explicit expectations.

Only Beatrice and Elizabeth postaudited the acquisitions.² Interestingly, both did so following an explicit request from the board, and not as a formalised step in an investment process. Beatrice focused on the totality, that is, the joint Beatrice and Benjamin, and concluded that the outcome was acceptable, although it was impossible to say whether this was due to the old or to the new entities. Elizabeth followed the development of ROCE and concluded that the acquisition was a failure. "If I could turn back the clock, I would not make this acquisition", the managing director of Edward said.

The companies that did not conduct any postaudits explained this in different ways. Anne seemed to be of the opinion that the group's performance was acceptable. She leaned more towards the total need, than towards the individual unit's potential. As long as the total need was satisfied, she was not concerned with monitoring particular investment projects. Christine believed that the acquisition of Charles fulfilled her intentions and she did not find it necessary to conduct a postaudit. Daisy strongly believed that industrially or strategically correct decisions do not need to be postaudited. Felicia was quite satisfied that decisions with a substantial content of restructurings could not be evaluated *ex post*. Finally, Gwen was more occupied with her positioning for the future than with what had happened in the past.

² The sample is too small to allow for conclusions regarding the frequencies of postaudits. For such a survey, see Neale (1989), who stated that 80% of UK companies postaudited their acquisitions.

On the basis of the empirical observations that I have made, I can now establish the empirical conclusions regarding the fourth empirical question that is related to the first purpose of this thesis.

In the seven takeover cases that I have studied, I have found that the quantitative analyses of the implications of a takeover were more common *ex ante* than *ex post*. The estimates that were made before the deal, seemed to be a natural phase of the takeover process, while the only two postaudits that were made were requested by the board. The quantitative analyses, which were based on the accounting concept of income rather than on its correspondent in the literature on capital budgeting, did not explicitly treat the issues surrounding the temporal pattern of the future incomes or their separability.

Part two

Part two of this thesis comprises the elaboration of the second purpose, particularly the exposition of previous research regarding the outcome of corporate acquisitions. The final discussion of the purpose is carried out in part three, where the conclusions from part two is combined with the empirical conclusions concerning part one of this thesis.

Previous research is made up of three main directions: the accounting studies, the market studies, and the interview studies. In the background to this study, I referred to the scarcity of comprehensive surveys and analyses that combine all these approaches. This is one important motivation for part two. However, in the light of the first purpose, the accounting approach is considered to be more central than the others, since it is directly linked to the relation between incremental cash flows and accounting return. Further, I have noted that the market studies are more numerous and more thoroughly analysed elsewhere in the literature than their accounting and interview counterparts. As a consequence, I have chosen to give more emphasis to the accounting studies.

Part two is divided into two chapters. Chapter 5 is intended to add to our knowledge of the accounting studies by providing a more extensive and systematic exposition than has, in my experience, been published before. In chapter 6, a review of the market and interview studies is presented. Its main function is to complement the accounting studies, in order to complete the comprehensive survey of previous research regarding the outcome of take-overs.

5 A review of the accounting studies

5.1 A framework for the accounting studies

The research issues in the accounting studies have typically been ‘Are corporate acquisitions successful?’ or less common ‘Which takeovers are successes and which are failures?’. A first important issue concerns the definitions of the terms *success* and *failure*. The accounting studies have normally measured the outcome on the consolidated level. In this context, success means that the amalgamation performs better than the merging parties would have done without the takeover. The meaning of failure is the opposite. The definitions of success and failure hence are based on a counterfactual comparison, a procedure that is difficult to apply empirically. Several approaches have been used to approximate how the merging parties would have developed in the absence of the acquisition. The crudest approach is represented by the *absolute performance* studies, where the amalgamation’s postmerger return is compared to the weighted average of the merging parties’ pre-merger returns. The takeover is classified as a success if the postmerger figures outperform the pre-merger figures. A more sophisticated approach is provided by the *relative performance studies*, where the amalgamation’s performance is compared to that of a control sample.¹ The takeover is classified as a success if the amalgamation outperforms the control sample.

The accounting studies have used different measures of accounting return, such as return on equity (ROE), return on assets (ROA), return on capital

¹ The labels ‘relative’ and ‘absolute’ are used by Ikeda and Doi (1983), pp. 260.

employed (ROCE), and return on sales (ROS). The definitions of and relation between these measures are provided in expressions [5.1] to [5.5]. The ratios are based on the simplified income statement in table 5.1 and the simplified balance sheet in figure 5.1.

Table 5.1 A simplified income statement

Operating income after tax (<i>OI</i>)
+ financial revenues after tax (<i>R</i>)
- financial expenses after tax (<i>X</i>)
Net income (<i>NI</i>)

Assets (<i>A</i>)	Equity (<i>E</i>)
	Financial debt (<i>D</i>)
	Operating li- abilities (<i>L</i>)

Figure 5.1 The composition of a simplified balance sheet

ROE expresses the accounting performance of the firm from the owners' perspective. It is linked to the capital value of equity via expression [2.5]. *ROE* is defined on an opening capital basis in expression [5.1].

$$ROE_t = \frac{NI_t}{E_{t-1}} \quad [5.1]$$

ROCE is a measure of the accounting performance of the firm's operations, without regard to the capital structure and its consequences for the accounting income. *ROCE* is linked to the capital value of equity via expression [2.6]. It is defined on an opening capital basis in expression [5.2].

$$ROCE_t = \frac{OI_t + R_t}{A_{t-1} - L_{t-1}} \quad [5.2]$$

ROA is a operative performance measure that is closely related to *ROCE*. It is defined on an opening capital basis in expression [5.3].

$$ROA_t = \frac{OI_t + R_t}{A_{t-1}} \quad [5.3]$$

The relation between *ROCE* and *ROA* is formalised in expression [5.4]. By combining expressions [5.4] and [2.6] it is apparent that *ROA* also is linked to the capital value of equity as in expression [2.6].

$$ROA_t = ROCE_t \cdot \left(1 - \frac{L_t}{A_t}\right) \quad [5.4]$$

ROS is a measure of the profit margin. It is defined as the ratio between the income before financial expenses and invoiced sales. It is further equal to the ratio between *ROCE* and the capital turnover, that is, invoiced sales over capital employed.²

² *ROS* is also related to *ROA* in an analogous way. For this to be true, the capital turnover has to be defined as the ratio between invoiced sales and total assets.

The different measures of accounting return are related to each other. This is formalised in expression [5.5], where R_D denotes the average interest rate on financial debts.

$$ROE = ROCE + (ROCE - R_D) \cdot \frac{D}{E} \quad [5.5]$$

The implication of expression [5.5] is that researchers who have studied the performance of takeovers in terms of ROCE have also studied the effect on ROE in an indirect and partial manner. Expression [5.5] can be restated to make the same interpretation valid for ROA. The necessary adaptations involve replacing ROCE by ROA, measuring the average interest rate on the total liabilities and debts (i.e. $D+L$ in figure 5.1), and consequently substituting D/E by $(D+L)/E$. Via expression [5.5] ROS is also related to ROE.

5.2 Some methodological issues concerning the survey of the accounting studies

Before reviewing the literature, some methodological issues regarding the second part of this thesis need to be addressed. The search for published accounting studies to survey was accomplished through a continuous monitoring of journals, electronic databases and conference papers.³ No studies have been excluded on purpose, but some studies are in languages I do not master.⁴ Yet, the survey is larger than those presented elsewhere in the literature.⁵ I have only included studies with samples exceeding 20 takeovers,

³ The results of the accounting studies have been surveyed in the literature (see for instance Utton, 1974; Hughes, 1989; Chatterjee and Meeks, 1996) and their methodology has been criticised (see e.g. Singh, 1971; Meeks, 1977; Kumar, 1984; Chatterjee and Meeks, 1996).

⁴ E.g. the Japanese studies mentioned by Ikeda and Doi (1983).

⁵ See e.g. the 13 studies reviewed by Chatterjee and Meeks (1996), or for earlier examples Hughes' (1989) survey of six studies, and Utton's (1974) review of 13 studies. These surveys partly overlap.

since statistical tests are hardly meaningful below that limit.⁶ My survey is delimited to mergers between firms in the non-financial sectors. Finally, since the methodology of the majority of the studies is rather standardised, it is neither easy nor meaningful to rank the studies in order of quality. I have therefore refrained from doing so.

My exposition of published results is slightly different from the results presented in the original works for two reasons. First, different authors use different names for the same accounting ratio, but I have chosen to standardise the terminology. When in the following I refer to ROE, ROCE, ROA, and ROS, these concepts are defined as in expressions [5.1] to [5.3]. However, on a detailed level, differences might remain between, for example, the ROCE measures in different studies, in the sense that some authors might have used opening capital and others average capital. Further, there might be differences in what is classified as operating liabilities. Second, the benchmark for statistical significance varies between the studies, but I have chosen to use 5 per cent as the dividing line between significant and non significant results in order to obtain a uniform format in the survey.

I have systematically compared my exposition to the surveys presented by other researchers. For the few studies where unclear passages remained after this procedure, I wrote to the author and asked for his/her assistance. Most of the essential uncertainties were cleared up in this way. I will, when necessary, comment upon the uncertainties that remained later on in the discussion.

The absolute performance studies are fundamental for the methodology of the relative performance studies. The former are presented in section 5.3, and the more numerous relative performance studies in section 5.4.

In addition to the two research directions described above, a number of studies can be found that represent other perspectives. The *cash performance studies* have treated the issue on the consolidated level, but have measured the effects on consolidated cash flows and not on consolidated income.

⁶ Nelson (1959) is the most typical example of a cited study that has been excluded on these grounds.

The *target performance studies* have used the ratios of the target group for making inferences on the financial outcome of takeovers. The features of these two types of studies will be elaborated in sections 5.5 and 5.6 respectively.

Sections 5.3 to 5.6 report the methodologies and results of the accounting studies. In section 5.7, I examine what these studies actually say about the success or failure of corporate acquisitions. Finally, in section 5.8, I analyse whether there are any systematic patterns in the reported results that may illustrate which takeovers are successes and which are failures.

5.3 Absolute performance studies

In an absolute performance study, the amalgamation's average performance (\bar{P}_m^+) during the applied postmerger period is compared to the parties' average performance (\bar{P}_m^-) during the applied pre-merger period. The difference between them ($\Delta\bar{P}_m$) is normally tested by a t-test. This difference is formalised in expression [5.6] below, where P denotes the performance measure, m the amalgamation, $+$ the postmerger period, and $-$ the pre-merger period.

$$\Delta\bar{P}_m = \bar{P}_m^+ - \bar{P}_m^- \quad [5.6]$$

The performance measure in expression [5.6] has been given different definitions in the various studies. The applied alternatives are operative profits⁷, ROA, ROCE, and ROE. The issue of whether different results can be expected from the use of different performance measures will be discussed in sections 5.7 and 5.8.

⁷ It is recognised that this is not a performance measure in its real sense, since it is not related to any measure of capital.

The outcomes of the absolute accounting studies are presented in table 5.2 below. These studies were published between 1921 and 1986 and it is interesting to note that studies of a more recent date have not been found. The signs in the third column indicate the tendency in the results. A minus (-) sign means that the postmerger return developed unfavourably, a positive (+) sign means the opposite, and a zero (0) means that there were neither negative nor positive tendencies. As regards the last column, the signs denote statistical significancies at the 5 per cent level. In this context, a zero (0) implies no significance, while the abbreviation n.t. stands for not tested.

Table 5.2 A summary of the results in the survey of absolute performance studies

Study	Performance measures	Tendency	Significance
Dewing (1921)	Operative profits	-	n.t.
National Industrial Conference Board (1929)	ROCE	-	n.t.
Singh (1971)	ROE	-	n.t.
Ikeda and Doi (1983)	ROA	+	n.t.
	ROE	+	n.t.
McDougall and Round (1986)	ROA	0	0
	ROE	-	0

The overall tendency of the results in table 5.2 is slightly negative. However, little can be said about the significance of these results since only a minority of the studies contained any statistical tests. More details about these studies are provided in appendix 5.1.

5.4 Relative performance studies

In a relative performance study, the amalgamation's absolute average performance is related to the absolute average performance of the control sample in a manner given by expression [5.7] below. The index c denotes the control sample. The statistical significance is tested by a t-test.

$$\Delta \bar{P}_{mc} = \frac{\bar{P}_m^+}{\bar{P}_c^+} - \frac{\bar{P}_m^-}{\bar{P}_c^-} \quad [5.7]$$

As for the absolute performance studies, the performance measure of expression [5.7] has been defined differently in the various studies. Compared to table 5.2, the relative performance studies have applied two more measures, earnings per share (EPS) and ROS.

The outcome of the relative accounting studies is presented in table 5.3 below. They were published between 1935 and 1986. In this context, it is interesting to note that more recent studies have not been found. Some of the studies used two control samples. This is represented by dual signs in the last two columns, where each sign signifies one control sample. The signs have the same meaning as in table 5.2.

The results in table 5.3 show no clear tendency. The number of positive observations is slightly below the negative number. As regards statistical significance, the majority of the studies do not report results that favour or disfavour the acquiring companies, although some significant results in both directions can be observed. I return to this issue in more detail in section 5.8. More information on the relative accounting studies is provided in appendix 5.2.

Table 5.3 A summary of the results in the survey of relative performance studies

Study	Performance measures	Tendency	Significance
Livermore (1935)	ROE	+	n.t.
Kelly (1967)	ROS	-	0
Reid (1968)	EPS growth to total assets	-	-
Hogarty (1970)	EPS	-	0
Singh (1971)	ROCE	-	n.t.
Weston and Mansinghka (1971)	ROA	+, +	+, 0
	ROE	+, +	+, 0
Lev and Mandelker (1972)	ROA	+	+
	ROE	-	0
	ROS	-	0
	EPS	+	0
Melicher and Rush (1973)	ROA	-	0
	ROE	+	0
Utton (1974)	ROCE	-	-
Mason and Goudzwaard (1976)	ROA	-	-
Meeks (1977)	ROCE	-	-
Cable et al (1980)	ROA	+, +	0, 0
	ROE	+, +	0, 0
	ROS	+, +	0, 0
Cosh et al (1980)	ROCE	+, +	+, 0
	ROE	+, +	+, 0
	ROS	+, +	0, 0
Jenny and Weber (1980)	ROA	-, -	0, 0
	ROE	-, -	0, 0
	ROS	-, -	0, 0
Kumps and Wtterwulghé (1980)	ROA	+, +	+, 0
	ROE	+, +	0, 0
Mueller (1980)	ROA	-, -	0, 0
	ROE	+, +	+, 0
	ROS	-, -	0, 0
Peer (1980)	ROA	-, -	0, 0
	ROE	-, -	0, 0
	ROS	-, -	0, 0
Rydén and Edberg (1980)	ROA	-, -	0, 0
	ROE	-, -	-, 0
	ROS	-, -	0, 0
Hoshino (1982)	ROA	-	0
Ikeda and Doi (1983)	ROA	+	n.t.
	ROE	+	n.t.
Kumar (1984)	ROCE	-	-
McDougall and Round (1986)	ROA	+	0
	ROE	+	0

5.5 Cash performance studies

The methodology of the cash performance studies is basically the one of the relative accounting studies, and the benchmark for success follows the logic of expression [5.7]. The main difference is that the conventional return measure in the relative accounting studies, that is, a ratio between accounting income and accounting capital, is replaced by a cash performance measure. The latter is defined as the ratio between the operating cash flow and the market value of the associated assets, where the operative cash flow is calculated as earnings before interest and taxes, plus depreciation. The aim is to create a performance measure that is not affected by the applied financing form and/or the chosen consolidation method.

The cash performance studies emerge as a recent alternative to the absolute and relative performance studies, which do not appear to have been published during the last decade.

Healy et al (1992) examined the postmerger cash performance for the 50 largest US mergers between 1979 and 1984. The takeovers represented a variety of industries. The authors found that the acquiring firms experienced significant improvements in their cash performance relative to their industries, and further that the conclusion was stronger the more related the takeovers were. They also found a strong positive relationship between operating cash flows and abnormal stock returns around the time of merger announcements.

Manson et al (1994) repeated the above study on a British sample that consisted of 38 takeovers. Their findings were in all essential aspects consistent with those of Healy et al (op.cit.).

5.6 Target performance studies

Target performance studies have been published by Ravenscraft and Scherer (1987 and 1989), Chatterjee (1992), and Nupponen (1996). They build on the assumption that the majority of the value creating effects reside in the target company, and hence measurements of the target's performance are proxies for the outcome of the takeover. The target performance studies emerge as recent alternatives to the absolute and relative performance studies, which do not appear to have been published during the last decade.

Ravenscraft and Scherer (1987) studied 95 acquired companies over a nine-year period after they were taken over. They compared their development, in terms of ROA, to their industries, and found that the acquired companies were underperforming in a relative sense during the postmerger period.

The assumption behind the target performance studies is not necessarily empirically or theoretically valid, which is illustrated in my empirical study of the incremental cash flows in chapters 3 and 4, where I concluded that part of the relevant merger effects occurred outside the target group, a fact that contradicts the fundamental premise of the target performance studies. Further, return measures are difficult to interpret when the company is not financially independent, but is part of a group. In that context, the amount of capital carried by the company may be due to group considerations, and not an accurate indication of what the company would have needed as a financially independent unit. This situation may lead to rather extreme figures, especially in terms of ROE, but to some extent also in terms of ROA and ROCE.

5.7 The accuracy of the published results

In sections 5.3 to 5.6 the methodologies and results of the accounting studies have been reported. The survey raises questions about what these studies actually say about the success or failure of corporate acquisitions. In this

section, some methodological aspects of this issue will be discussed. The significance of the counterfactual research design is elaborated in section 5.7.1, the composition of the control sample in section 5.7.2, and the accuracy of the performance measures in section 5.7.3.

The analyses will focus on the relative performance studies since they represent the main body of research. However, some comments will be made concerning the precision of the absolute performance studies before they are omitted from the discussion.

It has been stated in the literature that the absolute performance studies cannot be used to make inferences about the success or failure of corporate acquisitions. Two issues elucidate this point. First, it seems that takeovers tend to occur at the end of a boom period (Brealey and Myers, 1988, p. 817). In such situations, the merging parties' pre-merger return will probably exceed the amalgamation's postmerger return during the first years after the takeover. The decline in performance, however, can hardly be attributed to the takeover decision. Second, the pre-merger return might have been unsatisfactory and an observed postmerger improvement inevitable, although not necessarily sufficient in terms of a required rate of return.

5.7.1 The significance of the counterfactual research design

Most of the relative performance studies rest on the counterfactual comparison between the amalgamation's actual postmerger return and how the merging parties would have performed in the absence of the takeover. However, some studies can be found where only the buying company's counterfactual performance is taken into consideration.⁸ In the following, I concentrate on the main body of studies.

The first issue is whether this counterfactual comparison is the most reasonable benchmark. It could be argued that it would be more appropriate to per-

⁸ Singh (1971) and Ikeda and Doi (1983) are examples of such studies.

form a postaudit based on the logic of the theory of capital. The present value of the generated cash flows could then be compared to the purchase price for the target company, and the difference would serve as the basis for conclusions regarding the success or failure of takeovers. The calculated present value would be dependent on the return that could have been obtained from an equally risky alternative investment. The comparison with an alternative situation is also essential for the logic behind the accounting performance studies, although they stress the alternative of carrying on as before, rather than of acquiring another company instead of the one actually taken over. It is therefore questionable whether the counterfactual comparison applied in the accounting studies is the most appropriate benchmark. It must be recognised, however, that the benchmark relating to the theory of capital is probably difficult to apply empirically. In part one of this thesis, I demonstrated that separating incremental cash flows is difficult in a practical valuation situation; it is reasonable to assume that it is even more difficult in a research study of the success or failure of takeovers, where the number of companies will be larger, and the estimates will be based on published accounting data. Therefore, the accounting studies can be said to have investigated the issue in a way that is empirically possible, although not in all aspects ideal.

The counterfactual comparison is based on the presumption that the alternative of carrying on as before was a real option for the merging companies. However, this need not be true, for instance, the buying company might not have survived as an independent entity without the takeover. The choice might have been between acquiring or being acquired. An analogous way of reasoning is valid for the target company. In such situations, the fundament for the counterfactual comparison is not at hand.

For the time being, it is assumed that the alternative of carrying on as before was a real option for the merging companies. In that case, the comparison between the merging companies and the control sample is reasonable. However, in order to draw conclusions concerning the success or failure of corporate acquisitions from such a comparison, it must be presumed that the merging companies' performance would have been the same as that of the control sample in the absence of the takeover. In this context, it must be recognised that the merging companies might have a greater future potential

than the control sample before the merger, and could have outperformed it during the postmerger period even without the takeover.

The counterfactual comparison represents a relative measurement of the effects of takeovers. It is informative regarding the differences in return between the merging companies and the control sample, but says little about whether the improved relative performance is sufficient in absolute terms. The following example illustrates this point. Assume a situation where both the merging companies and the control sample earned an unsatisfactory return during the pre-merger period. The return was still not acceptable during the postmerger period, but the merging companies had significantly improved their performance compared with the control sample. This will be recorded as a successful takeover in a relative performance study, although the postmerger return does not fulfil the investors' required rate of return. In this context, an alternative definition of success in an accounting study would be to relate to expression [2.5] and classify a takeover as a success if it generates a ROE that exceeds the cost of equity. This procedure, which is in essence an abnormal earnings approach, does not seem to have been carried out empirically.

In order to draw conclusions regarding the success or failure of takeovers from a counterfactual study, it is also necessary that the chosen postmerger period is representative of the long-term outcome of acquisitions. The measurement period in the previous literature has normally extended from five years before the merger to five years after it. It has been described as the ideal event window (Utton, 1974), but Singh (1971) argued that the period is too long, and that the length increases the risk of disturbing events appearing. The appropriateness of the chosen time span ought to be influenced by the character of the companies' business characteristics, in that the longer the useful life of the companies' assets, the longer the period during which the postmerger effects should be observed. From appendix 5.2, it is clear that some studies deviated from the normal measurement period. The explanation lies in their somewhat different research design.⁹ Also, some

⁹ Livermore (1935), Reid (1968), Weston and Mansinghka (1971), Melicher and Rush (1973), Mason and Goudzwaard (1976) and the National Industrial Conference Board's study (1929) are placed in this category.

studies were devoted to the performance of a specific kind of merger, such as conglomerates or horizontal takeovers.

The following discussion on the accuracy of the accounting studies presupposes that:

1. the alternative of carrying on as before was a real option for the merging companies,
2. in the absence of the takeover, the merging companies would have performed in the same way as the control sample,
3. the relative performance measures also indicate whether a takeover is a success or a failure in absolute terms, and
4. the chosen postmerger period is representative of the long-term outcome of acquisitions.

5.7.2 The composition of the control sample

The counterfactual research design of the relative performance studies implies a comparison between the performance of the merging sample and that of the control sample. When the presuppositions in section 5.7.1 are fulfilled, the difference in performance indicates the success or failure of corporate acquisitions. In addition, the companies in the control sample also need to be representative of the development that the merging companies might have faced in the absence of the takeover. In this context, several aspects of the control sample deserve to be discussed.

The studies have elaborated somewhat different research issues. These issues have two dimensions, which is illustrated by the composition of the control samples. On the one hand, the control sample can be made up solely of nonmerging companies, or it may consist of both merging and nonmerging companies. On the other hand, the control sample can either exclusively comprise companies from the same industry as the merging parties, or it may be composed of companies in general, regardless of the industry to which they belong. These dimensions and their frequencies in previous research are presented in table 5.4 below. All studies in appendix 5.2 are in-

cluded, except for Livermore (1935). It appears that the most common research alternative is to use a control sample that consists of nonmerging companies picked from the same industries as the merging parties. This illustrates that the research issue has usually been whether the merging companies perform relatively better than their nonmerging competitors in the same industry.

Table 5.4 The composition of the control samples in the survey of relative accounting studies

The merger activity of the control sample	The industry to which the control sample belongs	
	Only the merging parties' industries	Industries in general
Only non-merging firms	12 studies ¹⁰	3 studies ¹¹
Both merging and non-merging firms	1 study ¹²	5 studies ¹³

¹⁰ Kelly (1967), Singh (1971), Lev and Mandelker (1972), Melicher and Rush (1973), Cable et al (1980), Cosh et al (1980), Jenny and Weber (1980), Kurmps and Wtiterwuhlge (1980), Mueller (1980), Peer (1980), Rydén and Edberg (1980), and McDougall and Round (1980) belong to this group of studies.

¹¹ Reid (1968), Utton (1974), and Hoshino (1982) belong to this group of studies.

¹² Weston and Mansinghka (1971) belongs to this group of studies.

¹³ Hogarty (1970), Mason and Goudzwaard (1976), Meeks (1977), Ikeda and Doi (1983), and Kumar (1984) belong to this group of studies.

The composition of the control sample is also relevant in a statistical sense. The probability of a significant outcome, in terms of expression [5.7], is higher when the variances of the performance ratios are small. As a consequence, the prospects of a significant difference might vary between a control sample consisting of the merging parties' competitors, and one comprising companies in general.

With this as a background, an important question is whether any systematic differences exist between the merging sample and the control sample. Several studies in table 5.3 performed statistical tests regarding this issue. The tests were divided in such a way that both the acquiring firms and the acquired firms were compared to the control sample during the pre-merger period. The results of these tests are given in table 5.5 below for the acquiring firms. "Capital" refers to the relative size of assets or capital employed, and "Solidity" to the relative equity-to-assets-ratio. The + sign means that the acquiring firms had a significantly higher value than the control sample regarding the specific ratio, the - sign means the opposite, and 0 sign means that there were no significant differences between the acquiring firms and the control sample. An empty cell means that the ratio was not tested.

Table 5.5 The pre-merger relation between the acquiring companies and the control sample in the survey of relative performance studies

Study	Financial ratio			
	Capital	Solidity	ROA or ROCE	ROE
Singh (1971)		0	0	
Utton (1974)			-	
Meeks (1977)			+	
Cable et al (1980)	+	-	0	
Cosh et al (1980)	0, 0	0, -	-, 0	0, 0
Jenny and Weber (1980)	+	0	0	0
Kumps and Wtterwulghé (1980)	+	0	-	-
Mueller (1980)	+	-	+	
Peer (1980)	+	0	0	
Rydén and Edberg (1980)	+	0	0	0
McDougall and Round (1986)	+	0	0	0

The most apparent pattern in table 5.5 is that the acquiring companies had significantly more capital than the control sample. The differences in the other ratios were mainly insignificant.

In table 5.6, the acquired firms are compared to the control sample in a manner consistent with table 5.5. The most apparent pattern in table 5.6 is that the targets quite often had significantly less capital than the control sample. As regards the other three dimensions, the differences were mostly insignificant and any systematic differences were hard to detect.

Table 5.6 **The relation between the acquired companies and the control sample in the survey of relative performance studies**

Study	Financial ratio			
	Capital	Solidity	ROA or ROCE	ROE
Meeks (1977)			0	
Cable et al (1980)	0	0	-	
Cosh et al (1980)	0, 0	0, 0	0, 0	0, 0
Jenny and Weber (1980)	-, 0	0, -	0, 0	0, 0
Kumps and Wtterwulghe (1980)	0	+	0	0
Mueller (1980)	-	+	+	
Rydén and Edberg (1980)	-	0	0	0
McDougall and Round (1986)	-	+	0	0

To conclude, the above comparisons of companies in the different samples, shows that there is a difference in size between the larger companies of the acquiring sample, the somewhat smaller companies in the control sample, and the even smaller acquired companies. In terms of profitability, no systematic differences between the samples seem to exist. These findings must be kept in mind when the results of the previous studies are interpreted.

5.7.3 The accuracy of the performance measures

The accounting ratios that have been used in the relative performance studies are linked to the capital value of equity, as was pointed out in section 5.1. Their impact, however, is only partial. A postmerger improvement in ROE will increase the capital value of equity, provided that it is not counterbalanced by an increase in the cost of equity. A postmerger deterioration in ROE may be regarded as negative, although it can lead to an increase in the capital value of equity provided that the cost of equity also decreases as a result of the merger.

An analogous way of reasoning can be applied for ROCE, which is linked to ROE through expression [5.5]. There, it is illustrated that a postmerger change in ROCE does not necessarily mean that ROE changes in the same direction, since the development of the average interest rate on financial debt and the financial position also have to be taken into consideration. Hence, it is not obvious what effect a change in ROCE has on the capital value of equity.

Table 5.7 below illustrates how the components of ROE and ROCE are affected by a takeover. The comparison is based on the counterfactual approach in the sense that the amalgamation is compared to the buying company without the acquisition. It is assumed that none of the parties had any subsidiaries before the takeover.

Consider a particular takeover, where the conclusion regarding success or failure is based on a comparison between the amalgamation's postmerger return and the buyer's pre-merger return. The factors in table 5.7 will exert an influence on the conclusions. Important variables in this context are the parties' relative performance, their relative size, their relative financial position, their strategic relation (can be assumed to be decisive for the presence of synergies and restructurings), the financing of the deal, the consolidation method chosen, the treatment of the goodwill item, the applied performance measure, and the price paid for the target in relation to the book value of its equity.

Table 5.7 The consequences of a takeover on the consolidated balance sheet and the consolidated income statement

Accounting item	Implications
Capital employed	Buyer's capital employed + target's capital employed - liquid assets used for financing + acquisition price less target's book value of equity (relevant only for the purchase method)
Equity	Buying company's book value of equity + new equity due to stock financing
Operating income	Buyer's operating income + target's operating income - interest revenue on liquid assets used for financing - depreciations of goodwill and overvalue (relevant only for the purchase method) + synergies - restructurings
Net income	Buyer's net income + target's net income - interest revenue on liquid assets used for financing (after tax) - depreciations of goodwill and overvalue (relevant only for the purchase method) + synergies after tax - restructurings after tax - interest expense on financial debts raised for financing (after tax)

The importance of the factors in table 5.7 must be considered before planning a study of the accounting performance of takeovers. It must further be recognised that for a particular study, ROCE and ROE may develop in different directions as illustrated by expression [5.5]. The characteristics of the sample in terms of the factors in table 5.7 are decisive for the development of the ratios.

The research design in the relative performance studies implies partly a comparison between the postmerger returns of the amalgamation and the control sample, partly a comparison between the pre-merger returns of the merging parties and the control sample. Despite this, the factors presented in table 5.7 will still exert an influence on the relative performance. It is only under very particular circumstances that these factors are unimportant. One such situation would be a takeover that is financed with stock, where the price paid is equal to the target's book value of equity, and where there are no synergies or restructurings. In such a case, the amalgamation's post-merger return will be equal to the weighted average of the parties' post-merger returns as stand-alone companies. Hence, factors such as the parties' relative performance, their relative size, their relative financial position, their strategic relation, and the chosen consolidation method do not exert any influence on the relative performance. However, as soon as the price paid deviates from the book value of the target's equity, or when synergies or restructurings are at hand, the above factors will again be important.

Several of the relative performance studies in the survey conducted statistical tests regarding the impact of some of the factors in table 5.7. The results of these tests are given in table 5.8 below. "Capital" refers to the relative size of assets or capital employed, and "Solidity" to the relative equity-to-assets-ratio. The + sign means that the acquiring firms had a significantly higher value than the acquired firms regarding the specific ratio, the - sign means the opposite, and the 0 means that there were not any significant differences between the parties. An empty cell means that the ratio was not tested.

The pattern that emerges from table 5.8 is fairly consistent. The only unanimous finding is that the acquiring companies had significantly more capital than the acquired companies. As regards the operative profitability, the dif-

ferences between the parties were mainly insignificant, but in some studies the acquirers had better pre-merger returns than the targets. Finally, the differences in financial position and ROE were mainly insignificant. In the studies that showed a difference in this respect, the acquiring firms tend to be more levered, that is, their assets were to a smaller extent financed by shareholders' equity. To sum up, the typical merger in previous research, seems to be one between a company that acquired a smaller firm with similar profitability and leverage.

Table 5.8 The pre-merger relation between the acquirer and the target in the survey of relative performance studies

Study	Financial ratio			
	Capital	Solidity	ROA or ROCE	ROE
Singh (1971)		0	+	
Cable et al (1980)	+	0	0	
Cosh et al (1980)	+	-	+	
Jenny and Weber (1980)	+	0	0	0
Kumps and Wtterwulghe (1980)	+	-	0	0
Mueller (1980)	+	0	0	0
Peer (1980)	+	0	0	
Rydén and Edberg (1980)	+	0	0	0
McDougall and Round (1986)	+	0	+	0

The difference between the price paid and the book value of the target's equity is an important issue when the merger is accounted for according to the purchase method. In such a situation, the sum of the parties' assets before the deal will come short of the amalgamation's assets after the deal, since the target's assets will be revalued when they enter the consolidated balance sheet. The consequence is that ROA and ROCE ceteris paribus will decline, which favours the control sample. Some researchers have carried out adjustments for this effect by removing the goodwill items from the bal-

ance sheet and the income statement. Meeks (1977) observed that the post-merger ROCE of the merging sample then increased significantly compared to its level before the adjustment. This mitigated the relative superiority of the control sample's return during his measurement period. Singh (1971), on the contrary, concluded that the goodwill influence was rather small.

In relation to the purchase method of consolidation, Meeks (op.cit) conducted another adjustment. Its origin is that the return measure is difficult to interpret during the acquisition year for those takeovers that are not consolidated on January 1st, since the target's assets are included in the consolidated balance sheet, but its income is regarded only for the part of the year that remains after the acquisition date. This led Meeks to conclude that the acquisition year should be omitted from the postmerger analysis. His procedure has also been carried out by several later researchers.

The adjustments made by Meeks are important to remember when the results in previous research are interpreted. However, the adjustments can be disputed. First, the goodwill adjustment is controversial. It is apparent that the presence of a goodwill item makes a comparison between the post-merger and pre-merger return more difficult. However, the exclusion of it introduces other problems. The goodwill item may represent expectations on future profitability, and if these expectations are fulfilled, the postmerger return will increase. Goodwill depreciation is the price associated with this increase. By excluding it from the amalgamation's postmerger income statements, the merging sample will be favoured in the comparison with the control sample.

Second, the omission of the acquisition year from the postmerger period is understandable, but nevertheless controversial. A strict interpretation of the accounting principle of conservatism implies that restructuring expenditures ought to be expensed as soon as they are foreseen. This means that it is not unlikely that expected restructuring expenditures are charged against the consolidated income during the first postmerger year.¹⁴ By excluding this

¹⁴ This would not be the case if the principle of matching was stressed. Then, a restructuring reserve would be created, and periodically matched against the actual future restructuring costs.

year, substantial costs are omitted from the analysis, thus improving the amalgamation's return. In part one of this thesis, it was demonstrated that incremental cash flows were weaker at the beginning of the postmerger period than towards the end of it. If this conclusion is representative of more cases than those I have studied, it means that an omission of the first postmerger year favours the merging sample.

5.8 Systematic patterns in the results

The comprehensive exhibitions in this chapter contain 27 absolute and relative accounting studies from nine countries, covering the outcome of almost 2,600 mergers¹⁵ consummated between 1888 and 1981. What the survey shows is that companies that engage in merger activity do not earn a postmerger return that is different than the average of their industry, or any other chosen benchmark. The relation between the merging sample and the control sample is informative about the success or failure of corporate acquisitions provided that:

1. the alternative of carrying on as before was a real option for the merging companies,
2. in the absence of the takeover, the merging companies would have performed in the same way as the control sample,
3. the relative performance measures also indicate whether a takeover is a success or a failure in absolute terms, and
4. the chosen postmerger period is representative of the long-term outcome of acquisitions.

The relative performance studies have usually dealt with the question 'Are corporate acquisitions successful?'. Few, however, have analysed the question 'Which takeovers are successes and which are failures?'. In this section, I take a step in that direction by systematically comparing the results in the

¹⁵ Some double counting may have occurred if one acquisition has been included in the samples of several studies. Since the sample list is seldom disclosed in the literature, the validity of this remark is not possible to assess.

relative performance studies along various merger characteristics. The procedure is obviously not sufficient for drawing conclusions on the accounting outcome of corporate acquisitions for particular kinds of takeovers. This would only be possible in the unlikely situation where the samples of the different studies were comparable in all aspects except the particular characteristic that I analyse. However, the procedure serves as the basis for discussing whether the results presented contain any systematic patterns.

Table 5.7 contains some important factors that influence the performance measures. The number of merger characteristics that can be studied is unfortunately limited by the scarcity of information in the accounting studies. The importance of the following aspects can be elucidated: the applied measure of performance, the importance of the strategic and industry profile of the samples, the composition of the control sample, the significance of time period studied and the nationality of the samples, and finally the importance of the sample size. These dimensions are elaborated in sections 5.8.1 to 5.8.5.

5.8.1 The applied measures of performance

As was evident in sections 5.1 and 5.7.3, the various accounting ratios describe different aspects of profitability. ROE measures the return from the shareholders' perspective, while ROA and ROCE measure the operative profitability. It is worth analysing, therefore, whether the different ratios are associated with different outcomes of corporate acquisitions.

The measure of performance has varied in previous research. Table 5.9 lists the frequencies for those measures that have been used in the relative performance studies.¹⁶ It should be observed that several previous studies comprised more than one performance measure. ROA and ROE were most fre-

¹⁶ EPS is not a profitability measure, as mentioned in section 5.3. For reasons of completeness, it is nevertheless included in table 5.9. It was used by Hogarty (1970), and Lev and Mandelker (1972). The same criticism can be directed towards ROS. It has frequently been used, and is related to ROA and ROCE. It is therefore discussed in connection to the performance measures throughout this chapter.

quent; ROE was seldom used alone.¹⁷ Instead, an operative profitability measure was more often employed as the single measure.¹⁸ A general remark in relation to table 5.9 is that the detailed definitions of the performance measures were seldom presented clearly enough. Therefore, a limited uncertainty exists regarding the accuracy of the classifications in table 5.9.¹⁹

Table 5.9 The performance measures used in the survey of relative performance studies

Performance measure	Number of studies
ROA	14
ROE	13
ROS	8
ROCE	5
EPS	2

One important question is to what extent the various measures of performance were associated with different outcomes. In table 5.10, I have summarised the tendencies and significancies of the results regarding the relative performance studies in table 5.3 that performed any statistical tests.

¹⁷ The only exceptions being Livermore (1935) and Singh (1971).

¹⁸ Eight examples of this can be seen in appendix 5.2.

¹⁹ The uncertainty typically concerns measures within “the family” of operative profitability. Whether ROA, ROCE or even other alternatives have been used is not always apparent. Further, ROS means different things in different studies. Jenny and Weber (1980) used net profits in the numerator, while Rydén and Edberg (1980) and Cosh et al (1980) used gross profits, thus actually measuring a gross margin. Finally, regardless of return measure, it was normally not stated at what point in time the capital was measured.

Table 5.10 The results in the survey of relative performance studies classified according to performance measure

Performance measure	Verdict	Number of tendencies	Number of significant studies
ROE	+	12	3
	-	8	1
ROA	+	8	3
	-	11	1
ROCE	+	2	1
	-	4	3
ROS	+	4	0
	-	10	0

Some interesting observations can be made from table 5.10. First, the significant outcomes are mainly positive for ROA, but mainly negative for ROCE. In the light of expression [5.4], where the close connection between the two measures is illustrated, the difference is rather unexpected. In the same study, this result is unlikely to occur, unless the postmerger relation between operating liabilities and assets deviates markedly from the premerger relation. However, it must be emphasised that ROA and ROCE have not been used together in any relative performance study.

A second observation in relation to table 5.10 is that the significant outcomes are mainly positive for ROE, but mainly negative for ROCE. In terms of expression [5.5], this might occur, for instance, for takeovers financed by debt, where the upward effect on the debt-equity-ratio (D/E) is stronger than the downward effect on ROCE, and where the average interest rate on financial debt (R_D) is unaffected by the takeover. However, it must be emphasised that the particular relation between ROE and ROCE that emerges in table 5.10 has not been reported by any individual relative performance study.

A third observation in relation to table 5.10 is that ROCE has relatively often been associated with significant outcomes. It is difficult to explain why ROCE should behave differently than ROA in this respect, since the measures are closely related. The fact that ROE has been relatively less frequently significant can be due to differences in variance between ROCE and ROE. If ROE varies more than ROCE, it is less likely to be significant. However, in that case, a difference would be expected between ROA and ROE as well, due to the close relation between ROA and ROCE. This is not supported by table 5.10.

Overall, the observations regarding table 5.10 might be due to systematic differences in the performance of the samples used in various studies.

A last remark regarding table 5.10 concerns the difference in tendencies. The outcome was mainly negative in terms of operative profitability measures (ROA, ROCE and ROS), while it was mainly positive for the net performance measure (ROE).

5.8.2 The strategic and industry profile of the samples

It can be assumed that takeovers with different strategic features are related to different outcomes. In this context, a distinction can be made between horizontal, vertical, concentric, and conglomerate takeovers. A horizontal takeover is one between parties at the same stage of a particular value added process, for example, between two car manufacturers. A vertical takeover is one between parties at different stages of the same value added process, for example, between a car manufacturer and a tyre factory. A concentric takeover is one between parties that have either the same technology, or the same distribution channels, for instance, between a tyre factory and a producer of motor oil. A conglomerate takeover is one between parties in different value added processes, for instance, between a car manufacturer and a food producer. Several studies inform about the strategic and industry profile of their samples, although they do not always provide their classification schemes. Consequently, it is not possible to check whether consistent

groupings have been made, but I have assumed that this is the case, or at least that the differences are not too accentuated.

It is normally asserted in the literature that horizontal and vertical acquisitions ought to create more value than conglomerate ones. The question is whether this presupposition has any support in the empirical literature. In this context, it should be emphasised that one motivation for conglomerate mergers is to reduce the variations in income. This implies that the standard deviations in the performance measures in expression [5.7] are presumably lower for conglomerate mergers than for horizontal or vertical mergers. Consequently, a significant outcome is more likely to be found in the conglomerate studies.

More than half of the studies surveyed presented the strategic profile of their sample. These studies covered almost exclusively horizontal and conglomerate acquisitions.²⁰ Completely conglomerate samples were used by Weston and Mansinghka (1971), Melicher and Rush (1973) and Mason and Goudzwaard (1976). Pure horizontal samples can be found in Livermore (1935), Singh (1971) and Jenny and Weber (1980). Some studies comprised mixed samples, some of which were predominantly horizontal, such as Peer (1980) and McDougall and Round (1986), while Mueller (1980) included more conglomerate acquisitions. Cosh et al (1980) and Rydén and Edberg (1980) had samples that were almost evenly divided between horizontal and conglomerate takeovers.²¹ Lev and Mandelker (1972) and Cable et al (1980) are difficult to classify, although it is probable that at least the latter study comprised mainly horizontal acquisitions.²² Kelly (1967) included mainly horizontal and concentric acquisitions. Reid's (1968) large sample was predominantly horizontal and concentric.

²⁰ If vertical acquisitions have been explicitly mentioned, they have been few in number and included in the conglomerate group. Reid (1968) included a large part of concentric acquisitions in his study.

²¹ Cosh et al (1980) used the dicotomy horizontal versus non-horizontal acquisitions. Due to the sample profile of other UK studies of that time and the characteristics of UK mergers in general during that period, it is likely that the non-horizontal group essentially consists of conglomerate mergers.

²² This is the case if the sample in Cable et al (1980) is representative of the merger profile in Germany between 1958 and 1977. (See page 110 in their study for statistics on this matter.)

In table 5.11, I have extracted from table 5.3 those studies that presented the strategic profile of their sample, and I have classified them as either 'conglomerate studies' or 'horizontal studies'.

Table 5.11 The outcome of conglomerate and horizontal takeovers in the relative performance studies

Study	Performance measures	Tendency	Significance
Conglomerate studies			
Weston and Mansinghka (1971)	ROA	+, +	+, 0
	ROE	+, +	+, 0
Melicher and Rush (1973)	ROA	-	0
	ROE	+	0
Mason and Goudzwaard (1976)	ROA	-	-
Mueller (1980)	ROA	-, -	0, 0
	ROE	+, +	+, 0
	ROS	-, -	0, 0
Horizontal studies			
Livermore (1935)	ROE	+	n.t.
Kelly (1967)	ROS	-	0
Reid (1968)	EPS growth to total assets	-	-
Singh (1971)	ROCE	-	n.t.
Jenny and Weber (1980)	ROA	-, -	0, 0
	ROE	-, -	0, 0
	ROS	-, -	0, 0
Peer (1980)	ROA	-, -	0, 0
	ROE	-, -	0, 0
	ROS	-, -	0, 0
McDougall and Round (1986)	ROA	+	0
	ROE	+	0

As table 5.11 shows, the set of horizontal studies only contains one significant result as regards the return measures, while the set of conglomerate studies reports several significant findings. The strongest observation is related to ROE. Three studies applied this measure, two of them reported significant results in favour of the conglomerates, while the third discerned a tendency that the conglomerates outperformed the control sample. However, this finding was not statistically significant. Several studies also

applied ROA as a performance measure, but here the results were more contradictory.

Generally speaking, the studies in table 5.11 are too few to allow any general conclusions to be drawn regarding the accounting outcome of takeovers with different strategic features, but the positive ROE associated with the conglomerates may be an exception worth considering. However, it must be recognised in this context that the positive effect on ROE might be explained by the potentially lower variance in the relative performance measure. Another possible explanation is that conglomerate takeovers are less associated with goodwill items than horizontal or vertical acquisitions, since integration gains such as synergies are probably expected to a lesser extent. *Ceteris paribus*, this circumstance favours conglomerate acquisitions over other strategic types of acquisitions.

The largest sample in this survey came from Reid (1968). Its size allowed him to divide the takeovers into subsamples following the acquisition's strategic features and thereby directly study the issue that I illustrated in table 5.11. All four subsamples (horizontal, vertical, conglomerate and concentric) developed poorer than the nonmerging control sample. The comparison between the subsamples revealed that the conglomerate group showed a somewhat better trend than the other three strategic groups. This finding is consistent with the tendencies in table 5.11.

It seems reasonable to assume that the industry profile of the samples also exerts an influence on the results. It has been argued in previous research that problems of managing the human aspects of a takeover process often lead to an unfavourable outcome. Consequently, it can be hypothesised that takeovers in the service industry are more inclined to fail than those in a more process-oriented industry.

The industry profile was normally either not given, or presented in a very brief form.²³ Relevant information was disclosed in eight of the 22 relative performance studies, namely by Kelly (1967), Reid (1968), Singh (1971),

²³ In appendix 5.2 this is marked "not stated" for the first situation, and e.g. "mainly manufacturing" for the second situation.

Cable et al (1980), Jenny and Weber (1980), Peer (1980), Rydén and Edberg (1980), and McDougall and Round (1986). However, the information provided was not sufficient for analysing whether the industry setting influenced the results of the studies in any systematic way.

Reid (1968) also created subsamples for the various industry profiles. He divided his 430 merging firms into 14 industries. Yet, the small size of his entire control sample seems to make statistical testing of the subsamples' relative performance less informative.

5.8.3 The time periods studied and the nationality of the samples

One issue worth investigating is whether different periods of time are associated with different takeover outcomes. One reason for this is that the prospects for success might improve as more experience is generated on the nature and outcome of takeovers. The recent studies are more likely to include samples containing relatively more experienced acquirers, who probably have better prospects for successful takeovers than inexperienced buyers. Further, the market for corporate control has developed and become more professional over time, which indicates that the target companies are more thoroughly analysed and the risk of failure reduced. Hence, it could be expected that the most recent studies *ceteris paribus* report more positive results than the older ones.

The literature surveyed is rather dated, and consequently the acquisitions covered are even more dated. More recent works are scarce since the latest peaks in merger activity are still too fresh to have been covered by research studies, due to the established approach of evaluating postmerger performance over a five-year period. Figure 5.2 below shows the periods where the previous studies formed their sample. Each line represents the time span covered by a particular study; for example, the first row of lines consists of four studies. The vertical and horizontal order of the lines has no significance, it simply compresses the size of the figure. The numbers at the top of

the figure describe the number of studies that selected their sample from at least some part of each five-year period. The old studies by Dewing (1921), the National Industrial Conference Board (1929), and Livermore (1935) have been omitted for reasons of presentation. Their samples were formed around the turn of the century. Further, those studies where the selection period was not a relevant item are not covered by figure 5.2.²⁴

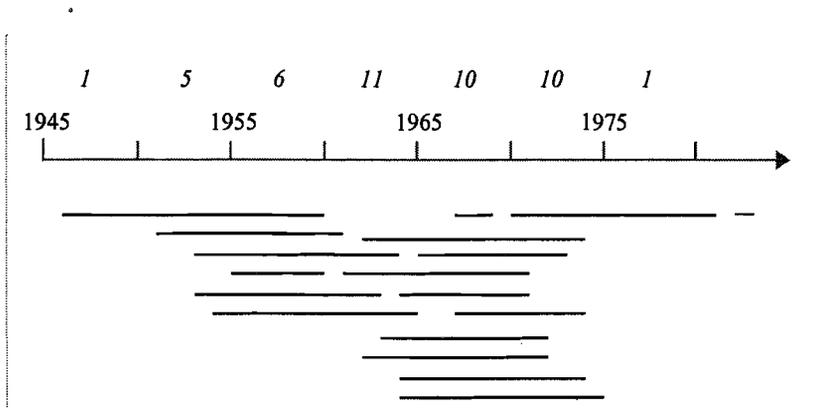


Figure 5.2 The time periods investigated in the literature surveyed.

The pattern in figure 5.2 reveals that the main body of the previous studies gathered observations during the period 1960-75, a fact which is essential for the understanding of the results. During these years, the takeover activity in the US was predominantly conglomerate in character and the acquisitions were mainly accounted for as pooling of interests (Copeland and Weston, 1988). In order to investigate the importance of the time dimension, I compared two frequently studied periods, 1955-65 and 1965-75. The comparison is illustrated in table 5.12 below. Only studies in appendix 5.2 that performed statistical tests regarding ROE, ROCE, ROA or ROS are included. The studies that used two control samples are marked twice. Each study is classified as belonging to one of the two time periods. The headings

²⁴ Weston and Mansinghka (1971), Melicher and Rush (1973), and Mason and Goudzwaard (1976) belong to this category.

“Significantly positive”, “Insignificant”, and “Significantly negative” refer to the difference in performance between the merging and control samples.

It is difficult to establish any definite conclusions on the basis of table 5.12, but some indications do suggest that the later period contains fewer negative outcomes than the earlier period.

Table 5.12. The number of reported significant outcomes in the survey of relative performance studies for various performance measures during different periods of time

Time period	Performance measures	Significantly positive	Insignificant	Significantly negative
1955-65	ROS	0	1	0
	ROA	1	1	3
	ROCE	0	0	1
	ROE	0	1	2
1965-75	ROS	0	12	0
	ROA	2	14	1
	ROCE	1	1	2
	ROE	3	13	1

The relative performance studies all had a national focus. They were predominantly (two out of three) American or British. The remaining studies represented a wide array of countries- France, Belgium, the Netherlands, Germany²⁵, Sweden, Australia and Japan.

The question concerning a national influence on the results can only be studied by comparing the two large contributing countries, the United States and the United Kingdom. One observation, although admittedly rather weak,

²⁵ More accurately, the German study covers acquisitions within the Federal Republic of Germany.

is that the British studies concluded in favour of the control sample²⁶, while the American studies reached the opposite conclusion.²⁷ There were two systematic differences between the British and American studies. First, the American studies included relatively more conglomerate acquisitions.²⁸ The British studies were not very informative on the strategic profile of their samples, but they seem to be horizontal.²⁹ Thus, the national difference in results could be traced back to the potential difference in return for conglomerate and horizontal acquisitions that was discussed in section 5.8.2.

Second, the treatment of goodwill was different in the U.K. and the U.S. In Britain, immediate writedown against equity was common, while in the U.S. goodwill was more often balanced, unless the prerequisites for the pooling method were fulfilled. *Ceteris paribus*, U.K. companies will have a higher income and a lower capital, which would give them better performance measures than U.S. companies. However, it must be recognised that the goodwill items were rather small before the 1980s, which mitigates the significance of the above statement.

According to a study by Carleton et al (1983), the popularity of stock financing decreased in the United States between 1966 and 1978. Instead, monetary assets became the prime source of financing.³⁰ This implies that the purchase method became more frequent, since the pooling method can only be considered when stock financing is at hand. The movement from stock financed deals accounted for as pooling of interests, to cash financed takeovers accounted for as purchases, means *ceteris paribus*, that the relative number of US studies that report positive outcomes of takeovers might be more rare after the mid sixties. This assertion is difficult to investigate em-

²⁶ True for Utton (1974), Meeks (1977) and Kumar (1984), but not for Cosh et al (1980).

²⁷ Except for Mason and Goudzwaard (1976).

²⁸ Copeland and Weston (1988, p. 691) explains this: "... most merger activity until the late 1970s was conglomerate because major horizontal and vertical mergers were subject to legal challenge."

²⁹ This belief is reinforced by Hughes' et al (1980) assertion that the merger wave in Europe in the sixties mainly comprised horizontal takeovers (p. 28).

³⁰ Two explanations for this development were that the interest on convertible loans ceased to be tax deductible and that the number of hostile takeovers grew. These were normally financed by monetary assets.

pirically, since the information regarding this issue is scarce in previous research.

5.8.4 The composition of the control sample

In table 5.4, the different compositions of the control samples and their frequencies were presented. One issue to consider is whether the alternatives are associated with different takeover outcomes. Table 5.13 below illustrates this question.

One interesting observation can be made from table 5.13. There appears to be a difference in the results between the studies where the control sample is made up of companies from the merging parties' industries, and those studies where the control sample consists of companies from industries in general. In the former case, the difference in return is mainly insignificant, and in the studies where it is significant the results favour the merging sample. When compared to control companies from various industries, the merging sample performs significantly worse than the control sample.

Table 5.13 The results in the survey of relative performance studies classified according to the characteristics of the control sample

Study	Performance measures	Tendency	Significance
Non-merging firms from the merging parties' industries			
Kelly (1967)	ROS	-	0
Singh (1971)	ROCE	-	n.t.
Lev and Mandelker (1972)	ROA	+	+
	ROE	-	0
	ROS	-	0
	EPS	+	0
Melicher and Rush (1973)	ROA	-	0
	ROE	+	0

Study	Performance measures	Tendency	Significance
Cable et al (1980)	ROA	+, +	0, 0
	ROE	+, +	0, 0
	ROS	+, +	0, 0
Cosh et al (1980)	ROCE	+, +	+, 0
	ROE	+, +	+, 0
	ROS	+, +	0, 0
Jenny and Weber (1980)	ROA	-, -	0, 0
	ROE	-, -	0, 0
	ROS	-, -	0, 0
Kumps and Wtterwulghe (1980)	ROA	+, +	+, 0
	ROE	+, +	0, 0
Mueller (1980)	ROA	-, -	0, 0
	ROE	+, +	+, 0
	ROS	-, -	0, 0
Peer (1980)	ROA	-, -	0, 0
	ROE	-, -	0, 0
	ROS	-, -	0, 0
Rydén and Edberg (1980)	ROA	-, -	0, 0
	ROE	-, -	-, 0
	ROS	-, -	0, 0
McDougall and Round (1986)	ROA	+	0
	ROE	+	0
Non-merging firms from industries in general			
Reid (1968)	EPS growth to total assets	-	-
Utton (1974)	ROCE	-	-
Hoshino (1982)	ROA	-	0
Merging and non-merging firms from the merging parties' industries			
Weston and Mansinghka (1971)	ROA	+, +	+, 0
	ROE	+, +	+, 0
Merging and non-merging firms from industries in general			
Hogarty (1970)	EPS	-	0
Mason and Goudzwaard (1976)	ROA	-	-
Meeks (1977)	ROCE	-	-
Ikeda and Doi (1983)	ROA	+	n.t.
	ROE	+	n.t.
Kumar (1984)	ROCE	-	-

5.8.5 The importance of the sample size

The robustness of the results increases with the sample size, since the effects of some extreme cases will be mitigated when there is a large number of other observations. Therefore, it is motivated to analyse whether any differences in conclusions can be found between the more extensive studies and the smaller ones. The sample size varied between the studies, from 21 in Kelly (1967) and Kumps and Wtterwulghe (1980), to 430 in Reid (1968). The median sample size was just above 50 acquisitions.

The sample size in a particular study normally decreased over time. At the end of the evaluation period, many amalgamations had developed in such a way that they were excluded from the sample. Thus, they were only included the first few years after the takeover. The reason for their exclusion was not always clearly stated.

Five studies have notably larger sample sizes than the others. The number of acquisitions studied by Reid (1968), Meeks (1977), Cosh et al (1980), Mueller (1980) and Kumar (1984) was altogether larger than the sum of the sample sizes in the remaining 17 relative performance studies. However, the results in the five large studies were not essentially different from those in the smaller studies.

Appendix 5.1.

Summary of accounting studies without a control sample

The studies are presented in chronological order. In some studies, the sample size varies over time. This is marked by the word "max.". All relations between the parties refer to the pre-evaluation period. Several studies used other performance measures than those given here. I have only chosen those which are relevant for the purposes of this study.

Author	Dewing (1921)	National Industrial Conference Board (1929)
Country	United States	United States
Selection period	1893-1902	Not relevant
Sample size	35 national mergers	Max 48 consolidations
Sample's strategic profile	Not stated	Not relevant
Sample's industry profile	Wide diversity	Manufacturing industry
The parties' relation	Not stated	Not relevant
Performance measure	Operative profits after tax	ROCE
Evaluation period	Until 1914	1900-13
Results: tendency	1) The parties' pre-merger profits exceeded postmerger profits 2) The profits were lower than the proponents expected 3) The profits declined during the evaluation period	The trend for the consolidations' ROCE is slightly declining
Results: significance	The author did not perform any statistical tests.	The authors did not perform any statistical tests
Comments	1) Pre-merger profits probably stated only for the acquirer	1) ROCE after tax measured on closing capital

Author	Singh (1971)	Ikeda and Doi (1983)
Country	United Kingdom	Japan
Selection period	1955-1960	1964-75
Sample size	77 quoted acquirers making around 90 acquisitions of quoted companies	48 mergers between listed companies
Sample's strategic profile	Horizontal acquisitions	Not stated
Sample's industry profile	Five industries; beverages (45%), nonelectrical engineering (21%), food (21%), electrical engineering (10%) and clothing and footwear (3%)	Manufacturing firms
The parties' relation	The acquirers had significantly higher average ROCE than the acquired firms. There was no significant difference in E/A.	Not stated
Performance measure	ROE	ROA and ROE
Evaluation period	1 year before to 3 years after the merger	5 years before to 5 years after
Results: tendency	The average postmerger ROE was lower than the parties' weighted average pre-merger ROE.	The average postmerger ROA and the average postmerger ROE is higher than the average pre-merger ratios
Results: significance	The author did not perform any statistical tests.	The authors did not perform any statistical tests
Comments	Unclear when capital is measured	1) Closing capital is used 2) Pre-merger profitability is only made up of the acquiring companies' figures.

Author	McDougall and Round (1986)
Country	Australia
Selection period	1970-81
Sample size	88 mergers between publicly listed firms
Sample's strategic profile	66% horizontal, the remaining part mainly conglomerate
Sample's industry profile	Retail, transport and industrial sectors. Roughly 60% of the acquisitions emanated from food/beverages/tobacco, builders' suppliers, media/other services and steel/engineering.
The parties' relation	The acquirers had significantly higher asset values and a significantly higher average ROA than the targets. There were no statistical differences in average ROE or E/A.
Performance measure	ROA and ROE
Evaluation period	5 years before to 5 years after
Results: tendency	The average postmerger ROA was identical to the weighted average pre-merger ROA. The average postmerger ROE was lower than the weighted average pre-merger ROE.
Results: significance	The results were not statistically significant.
Comments	Unclear when capital is measured, whether the acquisition year is included in the evaluation period. Multiple acquiring firms excluded.

Appendix 5.2.

Summary of accounting studies with a control sample

The studies are presented in chronological order. In some studies, the sample size varies over time. This is marked by the word "max.". All relations between the parties refer to the pre-evaluation period. Several studies used other performance measures than those given here. I have only chosen those which are relevant for the purposes of this study. The word "relative" are used in connection to studies that compare the post- and pre-merger performance between the merging and the control sample.

Author	Livermore (1935)	Kelly (1967)
Country	United States	United States
Selection period	1888-1905	1946-60
Sample size	49 successful mergers	21 merging companies
Sample's strategic profile	Horizontal	Mainly horizontal and complementary
Sample's industry profile	Not stated, but the sample is presented in table III	Mainly industrial
The parties' relation	Not relevant	Not stated
Control sample	Successful industrial companies	Matched nonmerging firms
Relation between control and merging sample	Not stated	Not stated
Performance measure	ROE	ROS
Evaluation period	1919-32	5 years before to 5 years after
Results: tendency	The merging sample had a better average ROE	The merging sample had poorer relative average ROS
Results: significance	The author did not perform any statistical tests	The results were not significant
Comments	1) Unclear when capital is measured 2) Difficult to understand what he has really done	1) Unclear how the acquisition year was treated

Author	Reid (1968)	Hogarty (1970)
Country	United States	United States
Selection period	1951-61	1953-64
Sample size	430 merging companies (comprising altogether over 3300 acquisitions during the selection period)	37 quoted firms that had acquired other quoted companies
Sample's strategic profile	Mainly horizontal and circular	Not stated
Sample's industry profile	14 industries represented	15 two digit manufacturing industries concerned
The parties' relation	Not relevant	Not relevant
Control sample	48 nonmerging firms	The acquiring firm's industry
Relation between control and merging sample	Not stated	Not stated
Performance measure	The increase in the share of net profits attributable to original shareholders relative to opening assets.	EPS
Evaluation period	1951 and 1961	From the first acquisition until 1964
Results: tendency	The merging sample had a poorer development of the performance measure	The merging sample's EPS developed poorer.
Results: significance	The merging sample had a significantly poorer development of the performance measure	The results were not statistically significant.
Comments	1) Odd performance measure 2) The sample size is elsewhere stated to be 478 (Utton, 1974)	

Author	Singh (1971)	Weston and Mansinghka (1971)
Country	United Kingdom	United States
Selection period	1955-1960	Not relevant
Sample size	77 quoted firms making around 90 acquisitions of quoted companies	63 large listed conglomerate firms
Sample's strategic profile	Horizontal acquisitions	Conglomerate
Sample's industry profile	Five industries; beverages (45%), nonelectrical engineering (21%), food (21%), electrical engineering (10%) and clothing and footwear (3%)	Not stated
The parties' relation	The acquirers had significantly higher average ROCE. There was no significant difference in E/A.	Not relevant
Control sample	Nonacquiring firms chosen at random from the acquirer's industry	Two control samples used. First, a random sample of large industrial companies. Second, a random sample of large industrial and non-industrial companies.
Relation between control and merging sample	There were no significant differences in average ROCE and E/A between the merging and the control sample.	Not stated
Performance measure	ROCE	ROA and ROE
Evaluation period	1 year before to 3 years after the merger	1958 and 1968
Results: tendency	The merging sample had a lower relative average postmerger ROCE	The merging sample had lower ROA and lower ROE in 1958. In 1968, the opposite relation holds.
Results: significance	The authors did not perform any statistical tests.	The merging sample had significantly lower ROA and significantly lower ROE than the first control sample in 1958.
Comments	1) Unclear when capital is measured	1) Unclear when capital is measured

Author	Lev and Mandelker (1972)	Melicher and Rush (1973)
Country	United States	United States
Selection period	1953-63	Not relevant
Sample size	69 large mergers between quoted firms	43 large listed conglomerate firms
Sample's strategic profile	Not stated, but seems to be horizontal	Conglomerate
Sample's industry profile	Not stated, but sample presented in appendix	Not stated
The parties' relation	Not stated	Not relevant
Control sample	Matched pair. The targets' pre-merger features were not regarded.	Nonconglomerate listed firms belonging to the same major industry
Relation between control and merging sample	The acquirers had higher asset values than the control sample. The difference was not tested statistically.	Not stated
Performance measure	ROA, ROE, ROS and EPS	ROA and ROE
Evaluation period	5 years before to 5 years after	1965 to 1971
Results: tendency	The merging sample had better relative average postmerger ROA, better relative average postmerger EPS, lower relative average postmerger ROE and lower relative average postmerger ROS	The conglomerates had lower average ROA and better average ROE than the control sample.
Results: significance	The merging sample had a better relative average postmerger ROA	The results were not significant.
Comments	1) Acquisition year not included in the evaluation period 2) The sample list is provided in appendix	1) Unclear when capital is measured 2) The merging sample was chosen from Weston and Mansinghka (1971)

Author	Utton (1974)	Mason and Goudzwaard (1976)
Country	United Kingdom	United States
Selection period	1954-65, but mainly 1961-65	Not relevant
Sample size	39 acquiring quoted firms that made at least one acquisition of another quoted company	22 quoted conglomerate firms that made a total of 194 acquisitions
Sample's strategic profile	Not stated	Conglomerate
Sample's industry profile	"Most of the important industries are represented" (textiles and nonelectrical engineering are relatively largest)	Mainly manufacturing
The parties' relation	Not relevant	Not relevant
Control sample	39 nonmerging firms, regardless of industry.	22 randomly selected portfolios with asset structures similar to the merging sample
Relation between control and merging sample	The merging sample had significantly lower average pre-merger ROCE than the control sample.	Not relevant
Performance measure	ROCE	ROA
Evaluation period	1966-1970, i.e. one to five years after the main selection period	1962 and 67
Results: tendency	The merging sample had lower average postmerger ROCE	The merging sample had lower average ROA in both 1962 and 1967.
Results: significance	The merging sample had significantly lower average postmerger ROCE	The merging sample had significantly lower average ROA in 1967.
Comments	1) Unclear when capital is measured 2) Could it be ROP rather than ROCE? 3) He also compared the acquirers to their industry average, but that part of the study is too incomplete to be included here.	1) Unclear when capital is measured

Author	Meeks (1977)	Cable et al (1980)
Country	United Kingdom	Federal Republic of Germany
Selection period	1964-1971	1964-74
Sample size	Max. 213 mergers between quoted firms	55 large mergers
Sample's strategic profile	Not stated	Not stated
Sample's industry profile	Manufacturing, distributive trades and some other services	Chemical products, mineral oil products, electrical engineering, machine tools, iron and steel
The parties' relation	Presumably, the acquirers had significantly larger capital employed and significantly higher average ROCE, but the relations were not tested.	The acquirers had significantly higher asset values. No significant differences in average ROA and E/A.
Control sample	Weighted averages for the merging firms' industries	Two control samples: matched pair (MP) and industry average (IA), both made up of nonmerging firms and picked for both acquirers and targets.
Relation between control and merging sample	The acquirers had significantly higher ROCE than their industries. There was no significant difference in average ROCE between the targets and their industries.	The acquirers had significantly higher asset values and significantly lower E/A than the MP sample. There was no significant difference in ROA. The targets had significantly lower average ROA than the MP sample. There were no significant differences in asset size or E/A.
Performance measure	ROCE	ROA, ROE and ROS
Evaluation period	3 years before to 7 years after	Normally 5 years before to 5 years after
Results: tendency	The merging sample had lower relative average postmerger ROCE	The merging sample had better relative average postmerger ROA, ROE and ROS than both control samples.
Results: significance	The merging sample had significantly lower relative average postmerger ROCE the first five years after the takeover	The results were not statistically significant
Comments	1) Average capital is used 2) Might it be return on operative capital rather than ROCE? 3) I have omitted the acquisition year from his data 4) Outliers were omitted	Unclear when capital is measured, and whether the acquisition year is included in the evaluation period.

Author	Cosh et al (1980)	Jenny and Weber (1980)
Country	United Kingdom	France
Selection period	1967-69	1965-73
Sample size	Max. 211 mergers between quoted companies	Max. 40 mergers
Sample's strategic profile	47% horizontal, the remaining part nonhorizontal	Horizontal
Sample's industry profile	Manufacturing (72%) and distribution (38%)	Food stores, electric and electronic equipment, sugar/confectionery, and paper and allied products
The parties' relation	The acquirers had a significantly larger capital employed, a higher average ROCE and a lower E/A.	The acquirers had significantly higher asset values. There were no significant differences in average ROA, average ROE and E/A.
Control sample	Two control samples: matched pair (MP) and industry average (IA), both made up of quoted, nonmerging firms and picked for both acquirers and targets.	Two control samples: matched pair (MP) and industry average (IA), both made up of quoted, nonmerging firms and picked for both acquirers and targets.
Relation between control and merging sample	The acquirers had significantly lower average ROCE than the IA sample and significantly lower E/A than the MP sample. There were no significant differences in asset size, average ROE or E/A.	The acquirers had significantly higher asset values than the IA sample. There were no significant differences in average ROA, average ROE or E/A. The targets had significantly lower asset values than the IA sample, and significantly lower E/A than the MP sample. There were no significant differences in average ROA or average ROE.
Performance measure	ROCE, ROE and ROS	ROA, ROE and ROS
Evaluation period	5 years before to 5 years after	4 years before to 4 years after
Results: tendency	The merging sample had better relative average postmerger ROCE, ROE and ROS than both control samples.	The merging sample had lower relative average postmerger ROA, ROE and ROS than both control samples.
Results: significance	The merging sample had significantly better relative average postmerger ROCE and better relative average postmerger ROE than the IA sample.	The results were not statistically significant
Comments	Unclear when capital is measured, and whether the acquisition year is included in the evaluation period.	Unclear when capital is measured, and whether the acquisition year is included in the evaluation period.

Author	Kumps and Wtterwulghe (1980)	Mueller (1980)
Country	Belgium	United States
Selection period	1962-74	1962-72
Sample size	Max. 21 mergers between quoted companies	Max. 280 mergers between quoted companies.
Sample's strategic profile	Not stated	90% conglomerate, 10% horizontal
Sample's industry profile	Manufacturing or retailing	Mainly manufacturing and retailing.
The parties' relation	The acquirers had significantly higher asset values and significantly lower E/A. There were no significant differences in average ROA and average ROE.	The acquirers had significantly higher asset values. There were no significant differences in ROA, ROE and E/A.
Control sample	Two control samples: matched pair (MP) and industry average (IA), both made up of quoted, nonmerging firms and picked for both acquirers and targets.	Two control samples: matched pair (MP) and industry average (IA), both made up of quoted, nonmerging firms and picked for both acquirers and targets.
Relation between control and merging sample	The acquirers companies had significantly higher asset values, lower average ROA and average ROE than the IA sample. There was no significant difference in E/A. The targets had significantly higher E/A than the IA sample. There were no significant differences in asset size, average ROA or average ROE.	The acquirers had significantly higher asset values, significantly higher ROCE and significantly lower E/A than the IA sample. The targets had significantly lower asset values, significantly higher ROCE and significantly higher E/A than the IA sample.
Performance measure	ROA and ROE	ROA, ROE and ROS
Evaluation period	5 years before to 5 years after	5 years before to 3 years after
Results: tendency	The merging sample had better relative average postmerger ROA and ROE than both control samples.	The merging sample had better relative average postmerger ROE, lower relative average postmerger ROA and ROS than both control samples.
Results: significance	The merging sample had significantly better relative average postmerger ROA than the MP sample.	The merging sample has significantly better relative average ROE than the MP sample.
Comments	ROA based on net income, unclear when capital is measured, and whether the acquisition year is included in the evaluation period	Unclear when capital is measured, and whether the acquisition year is included in the evaluation period

Author	Peer (1980)	Rydén and Edberg (1980)
Country	The Netherlands	Sweden
Selection period	1963-72	1962-72
Sample size	Max. 31 mergers	27 large mergers between quoted firms
Sample's strategic profile	75% horizontal, the rest nonhorizontal	Just over 50% horizontal, the rest mainly conglomerate
Sample's industry profile	Manufacturing or retailing. Manufacture of metal products and machinery make up 1/3 of the sample.	Mechanical industry (1/3), steel and metals together with timber/pulp/paper/printing (1/3).
The parties' relation	The acquirers had significantly higher asset values. There were no significant difference in average ROA or E/A.	The acquirers had significantly higher asset values. There were not any significant differences in average ROA, average ROE and E/A.
Control sample	Two control samples: matched pair (MP) and industry average (IA), both made up of nonmerging firms and picked for both acquirers and targets.	Two control samples: matched pair (MP) and industry average (IA), both made up of quoted nonmerging firms and picked for both acquirers and targets.
Relation between control and merging sample	The acquirers had significantly higher asset values than the IA sample. There were no significant differences in average ROA or E/A.	The acquirers had significantly higher asset values than the IA sample and the targets significantly lower. There were no significant differences in average ROA, ROE or E/A. There were no significant differences in average ROA, ROE or E/A.
Performance measure	ROA, ROE and ROS	ROA, ROE and ROS
Evaluation period	5 years before to 5 years after	3 years before to 3 years after
Results: tendency	The merging sample had lower relative average postmerger ROA, ROE and ROS than both control samples.	The merging sample had lower relative average postmerger ROA, ROE and ROS than both control samples.
Results: significance	The results were not statistically significant	The merging sample had significantly lower relative average postmerger ROE than the IA sample.
Comments	Unclear when capital is measured, and whether the acquisition year is included in the evaluation period	Unclear when capital is measured, whether the acquisition year is included in the evaluation period. The data concern parent companies

Author	Hoshino (1982)	Ikeda and Doi (1983)
Country	Japan	Japan
Selection period	1970	1964-75
Sample size	90 mergers	43 mergers between listed mergers
Sample's strategic profile	Not stated	Not stated
Sample's industry profile	Not stated	Manufacturing firms
The parties' relation	Not stated	Not stated
Control sample	Nonmerging firms	The acquiring firms' main competitors. The targets' pre-merger features were not considered.
Relation between control and merging sample	Not stated	Not stated
Performance measure	ROA	ROA and ROE
Evaluation period	5 years after	5 years before to 5 years after
Results: tendency	The control sample had lower average postmerger ROA	The merging sample had better relative average postmerger ROA and better relative average postmerger ROE
Results: significant	The results were not statistically significant.	The authors did not perform any statistical tests.
Comments	Unclear when capital is measured, and what measure he actually used	1) Closing capital is used 2) Pre-merger profitability for the merging sample is only made up of the acquiring companies' figures.

Author	Kumar (1984)	McDougall and Round (1986)
Country	United Kingdom	Australia
Selection period	1967-1974	1970-81
Sample size	Max. 354 mergers between quoted firms	88 mergers between publicly listed firms
Sample's strategic profile	44% horizontal, the rest nonhorizontal	66% horizontal, the rest mainly conglomerate
Sample's industry profile	75% within the manufacturing sector. The rest in construction, transport and distribution.	Retail, transport and industrial sectors. Roughly 60% of the acquisitions emanated from food/beverages/tobacco, builders suppliers, media/other services and steel/engineering.
The parties' relation	Compared to the UK average, the acquirers had larger and the targets smaller capital employed. Neither relation was statistically tested.	The acquirers had significantly higher asset values and a significantly higher average ROA. There were no statistical differences in average ROE or E/A.
Control sample	Industry average for both merging firms	Matched pair (MP), made up of quoted nonmerging firms and picked for both acquirers and targets.
Relation between control and merging sample	Not stated	The acquirers had significantly higher asset values than the MP sample. There were no significant differences in average ROA, ROE or E/A. The targets had significantly lower asset values and significantly higher E/A than the MP sample. There were not any significant differences in average ROA or ROE.
Performance measure	ROCE	ROA and ROE
Evaluation period	5 years before to 7 years after	5 years before to 5 years after
Results: tendency	The merging sample had lower relative postmerger ROCE for all seven postmerger years.	The merging sample had a better relative average postmerger ROA and ROE
Results: significance	The merging sample's relative postmerger ROCE is significantly lower during the second, third and fourth year after the merger.	The results were not statistically significant.
Comments	1) Unclear what profitability measure is used. Presumably it is ROCE. 2) Unclear when capital is measured 3) Acquisition year excluded 4) Multiple acquirers included	Unclear at what time capital is measured, whether the acquisition year is included in the evaluation period. Multiple acquiring firms excluded

6 A review of the market and interview studies

Chapter six concerns the methodologies and results of the market and interview studies. It must be emphasised that the review is not an independent contribution made by this study, but rather a complement to the accounting studies in the comprehensive exposition of previous research regarding the outcome of takeovers.

The number of published market studies is far too large to allow for a comprehensive review; I therefore delimit the survey to a selection of studies that are most frequently cited in the literature. The interview studies will be given less attention for several reasons. First, they are less closely linked to the main topic of this study, namely the relation between measures based on the theory of capital and measures based on accounting. Second, their methodology does not contain as many controversial elements as the accounting and market studies. Finally, the interview studies are fewer in number, and a review of their results is therefore less extensive.

This chapter consists of two main sections: the market studies are treated in section 6.1, and the interview studies in section 6.2. Section 6.1 is divided into five sections, and starts with a description of the logic of the market studies (section 6.1.1) and their methodological design (section 6.1.2). The results are given partly in an aggregated format (section 6.1.3), partly in an disaggregated format (section 6.1.4). The aggregated format relates to the question 'Are corporate acquisitions successful?', and the disaggregated format to the related question 'Which takeovers are successes and which are

failures?'. Section 6.1.5 reviews some of the criticism against the market studies.

6.1 A review of the market studies

6.1.1 The logic of the market studies

By market studies I refer to a number of studies that have at least two features in common. First, they have observed the stock price reaction for the acquiring company and the target company when a takeover announcement is made public; second, they have normally based their conclusions regarding value creation in corporate acquisitions on the stock price reaction that cannot be explained by variations in the market return.

In the present study, I regard takeovers as a special form of investment. The perspective adopted is then basically that of the investing company and it is therefore reasonable to delimit the survey of the market studies to the stock price implications for the acquiring firm.¹

The hypothesis about efficient capital markets, which states that all prices fully reflect all relevant information, and that stock prices adjust instantaneously to new information, is an important starting point for the market studies. Provided that the market is efficient, the expected future benefits of a corporate acquisition should be fully reflected in the stock price at the first public announcement of the takeover, to the extent that they can be predicted (Mandelker, 1974; Langetieg, 1978).²

¹ Those scholars that have measured the combined return on both the acquiring and the target companies' shares have often had a pronounced social perspective on the issue. When conducting a study with such a purpose, it is not sufficient to observe solely the stock return for one of the involved companies, since the market reaction can represent value transfers between the shareholders of the two companies, rather than representing an appropriate estimate of the social gains or losses associated with takeovers.

² In the literature different types of efficiency are discussed. As regards the market studies, reference is often made to the semi-strong form of efficiency, which states that all public information is reflected in stock prices.

The expected monetary gain for the shareholders of the acquiring firm is represented by the net present value (NPV) of the takeover decision. Depending on whether the investors expect the NPV to be positive/negative there will be an increase/decrease in the stock price of the acquiring firm (Halpern, 1983). The absence of a market reaction therefore implies that the investors regard the NPV of the takeover decision to be equal to zero. However, an alternative interpretation of the latter situation that appears in the literature is that the merger announcement was expected, and that the NPV of the takeover decision has already been capitalised in the stock price of the acquiring firm.

6.1.2 The methodology of the market studies

The core of the market studies is that the acquiring firm's actual stock return is compared to its estimated stock return during a period around the announcement date. The potential difference between the actual and the expected stock return is labelled "abnormal return" (AR) and summed over the period in question to a "cumulative abnormal return" (CAR), which is a proxy of the NPV of the takeover decision, or in other words, the expected value creation.

The abnormal return (AR) for a particular stock (j) during a particular period (t) can be expressed in accordance with [6.1].³

$$AR_{jt} = r_{jt} - E[r_{jt}] \quad [6.1]$$

³ In the literature, AR seems to be related to those studies that adopt the market model for estimating the expected return (see below). In studies building on other model specifications, the term AR is replaced by some other term. However, in the present study, I use AR as a label for the abnormal return regardless of the methodological approach that underlies its computation.

In expression [6.1], r_{jt} is the actual return on a particular stock calculated according to expression [6.2] below, and $E[r_{jt}]$ is the expected return on the same stock during the same period. In expression [6.2], P denotes the stock price and D the dividend on that particular stock.

$$r_{jt} = \frac{P_t - P_{t-1} + D_t}{P_t} \quad [6.2]$$

In the literature, several different approaches for calculating the expected return, $E[r_{jt}]$, have been proposed and used. Those models that appear to be most frequent will be described in brief. The *market model*, associated with Fama et al (1969), formalises the expected return as in expression [6.3] below.⁴ The market model is an ordinary bivariate regression model where α_j represents the expected return on stock j when the market index (rm_t) does not change. A change in the market index has an impact on the expected return through its covariation with the particular stock (β_j).

$$E[r_{jt}] = \alpha_j + \beta_j \cdot rm_t \quad [6.3]$$

A special version of the market model, where α is equal to zero and β equal to 1, is referred to as the *market-adjusted return model*. The expected return is given by expression [6.4] below.⁵

⁴ The market model has been used, by among others Franks et al (1977), Dodd and Ruback (1977), Firth (1979), Firth (1980), Dodd, (1980), Eckbo (1983), Dodds and Quek (1985), Lubatkin and O'Neill (1988), Lahey and Conn (1990), and Sudarsanam et al (1996).

⁵ The market-adjusted return model or similar approaches has been used by among others Asquith and Kim (1982), Asquith (1983), Asquith et al (1983), Dennis and McConnell (1986), Franks and Harris (1989), Limmack (1991), and Sudarsanam et al (1996).

$$E[r_{jt}] = rm_t \quad [6.4]$$

The market-adjusted return model is computationally simple inasmuch as the expected return on a particular share corresponds to the return on the market portfolio.

Some studies have relied on the *capital asset pricing model* to estimate the expected return in accordance with expression [6.5] below.⁶

$$E[r_{jt}] = rf_t + \beta_j \cdot (rm_t - rf_t) \quad [6.5]$$

Compared to the above models, the capital asset pricing model introduces the return on a risk-free asset, denoted rf_t . The capital asset pricing model has been criticised for being more complex and costly than the market model and the mean adjusted return model, without being superior in performance.⁷

Finally, an alternative specification of the expected return was proposed by Masulis (1980) and referred to as the *mean-adjusted return model*. Studies using this methodology do not qualify to be labelled market studies according to my definition since they do not take the market return into consideration. However, the methodology is often commented upon in other market studies and it is therefore motivated to include it. In the mean-adjusted return approach, the expected return is expressed as in [6.6] below.⁸ It is solely a function of the particular stock's historic return during a specific period in time.

⁶ The capital asset pricing model or the associated empirical market line has been used by among others Mandelker (1974), Ellert (1975, 1976), Langetieg (1978), Bradley (1980), Asquith and Kim (1983), Malatesta (1983), Lubatkin and O'Neill (1988).

⁷ See Roll (1977), and Brown and Warner (1985).

⁸ The mean-adjusted model has been used by, among others, Lahey and Conn (1990).

$$E[r_{jt}] = \bar{r}_j$$

[6.6]

Several measurement issues are involved in the four different specifications of the expected return above. The most relevant in this context are: the event date, the length of the measurement period and the periodicity in the return measurement.

In the market studies, the announcement date seems to be the most frequently selected event date, a choice inspired by Dodd and Ruback (1977), while the earlier studies more often used the effective date of the merger.⁹ The choice is partly dependent on whether mergers or tender offers are studied. Mergers occur when the two parties agree to combine under legal procedures, while in a tender offer, the acquiring firm offers to purchase a proportion of the shares of the target firm at specified terms on or before a specified date (Halpern, 1983). Those tender offers that succeed are likely to be followed by a merger (Copeland & Weston, 1988). Consequently, the announcement date is the reasonable choice for tender offers, since it makes the sample size larger, while the effective date is an alternative that might be considered for mergers. An important aspect in this context is the risk of information leakage, which is higher in mergers than in tender offers, since the former are preceded by negotiations between the parties.

Another essential measurement issue in the market studies concerns the length of the measurement period. In the studies surveyed the length has varied from five days around the announcement date, to several years after it. The longer the time period, the larger the risk that other substantial events will occur and exert an influence on the accuracy of the measurement. The studies that have employed a longer time period have often compared the short and long run abnormal stock return.

A third essential measurement issue in the market studies concerns the periodicity in the return measurement. In the studies surveyed daily, monthly

⁹ See for instance Mandelker (1974) and Langetieg (1978).

and yearly data have been used. The choice is partly dependent on the temporal focus of the study, partly on various statistical considerations.¹⁰

6.1.3 The aggregated results of the market studies

The aggregated market studies have dealt with the question 'Are corporate acquisitions successful?'. They have measured the stock market's reaction to takeover announcements, without letting the characteristics of the sample influence the research design. It appears from the results that I have surveyed that a corporate acquisition has either no value consequences or negative consequences for the stockholders of the acquiring firm. Following the logic of the market studies, this implies that the investors generally regard takeovers as decisions with a net present value equal to, or smaller than, zero.

The large body of studies that did not find any significant reactions include Halpern (1973), Mandelker (1974), Ellert (1975 and 1976), Dodd and Ruback (1977), Franks et al (1977), Langetieg (1978), Firth (1980), Asquith and Kim (1982), Eckbo (1983), Malatesta (1983), Dodds and Quek (1985), Dennis and McConnell (1986), Franks and Harris (1989), Lahey and Conn (1990), and Limmack (1991).

A considerable number of studies have reported a significant negative outcome for the acquiring firm's shareholders. These include studies by Firth (1979 and 1980), Dodd (1980), Asquith (1983), Malatesta (1983), Franks and Harris (1989), Lahey and Conn (1990), Limmack (1991), and Sudarshanam et al (1996).

There are, however, a number of studies that have reported a significant positive outcome for the acquiring firm's shareholders, for example, Asquith et al (1983), Bergström et al (1989), and Franks and Harris (1989).

¹⁰ See Brown and Warner (1985) for a discussion of the statistical issues.

6.1.4 The disaggregated results of the market studies

The disaggregated market studies have dealt with the question 'Which take-overs are successes and which are failures'. The inconclusive results in the previous aggregated market studies have been discussed in the literature. Jensen and Ruback (1983) argued that potential explanations relate to the time of the merger news, the relative size of acquirer and target, risk changes due to the merger, and regulatory changes. Halpern (1983) further suggested that abnormal returns may be influenced by form of payment, type of merger, and frequency of merger. Some of the studies reported in the preceding section have investigated the proposed explanations given by Jensen and Ruback, and Halpern. It is, of course, difficult to design subsamples in such a way that the only difference between them is due to the presence of a particular factor. This caveat must be remembered when I later review the results of some disaggregated studies.

The time of the merger news refers to the choice between the announcement date and the effective date of merger. Among the studies that I have reviewed, I have not found any study that explicitly made measurements that elucidate this issue.

The importance of the relative size of the parties' equity was studied by Sudarsanam et al (1996), who found that the acquiring shareholders benefit when their firm takes over a relatively small target. The opposite was concluded by Asquith et al (1983), who reported a significant positive relationship between the targets' relative size and the return to the acquiring firms' shareholders.

It has been proposed that the various models for estimating the expected return used in the market studies are sensitive to changes in the return and risk features of the acquiring firms. Lahey and Conn (1990) found that a change in the systematic risk will bias the mean-adjusted return model, while the market model is unaffected due to a corresponding change in the intercept alpha.

Regulatory changes have been believed to affect the results in the market studies. They can refer to legislative changes, for example, the US legislation that reduced the number of vertical and horizontal mergers in the 1960s (Copeland and Weston, 1988). Further, changes in accounting recommendations (pooling vs. purchase as method of business combinations) and stock market requirements regarding the content of the offers are relevant in this context. Schipper and Thompson (1983b) argued that the regulatory changes in the US in the 1960s resulted in higher costs for the acquiring firms and should therefore have a negative impact on the abnormal return. They found support for this view, while Lahey and Conn (1990) did not.

It has been asserted that the financing form has an impact on the results in the market studies. The line of argument is that stock financing is a signal from the managers of the acquiring firm that their company is overvalued, while cash offers imply the opposite. Firth (1979) and Travlos (1987) found that the stock market's reaction to stock offers is more negative than its reaction to cash offers. Franks et al (1991) reported results that "cast serious doubt on prior findings of significant postmerger abnormal performance associated with means of payment."

It has been proposed that related acquisitions, that is, horizontal and vertical acquisitions, create more value than unrelated takeovers, that is, conglomerates, since some potential sources for value creation, such as economies of scale and scope, are unavailable to unrelated acquisitions (Singh and Montgomery, 1987).¹¹ Kusewitt (1985), and Singh and Montgomery (1987) reported results that were consistent with this proposition. However, it was not supported in the studies by Lubatkin (1987), Shelton (1988), and Lahey and Conn (1990).

Horizontal and vertical takeovers were studied by Lahey and Conn (1990). Their results were sensitive both to model specification and time horizon. Using the market model, they found that the market's reaction to vertical mergers was significantly negative during the announcement and consummation months, and by using the mean-adjusted return model that the mar-

¹¹ In this context reference is normally made to some established merger classification scheme, e.g. that of the US Federal Trade Commission (FTC).

ket had a significantly negative long-run reaction towards horizontal mergers. Related to this issue is a report by Lubatkin and O'Neill (1988) who studied not only the merger type but also the impact of the economic climate. They found that conglomerate mergers experienced significantly positive abnormal returns regardless of economic climate, while non conglomerate mergers experienced a significantly positive reaction only during bull periods.

Another assertion in the literature is that acquiring firms with previous experience of takeovers have a better chance of managing the value creation than inexperienced buyers, which would motivate that the stock return of the former developed relatively better. The studies by Asquith et al (1983) and Lahey and Conn (1990) did not find any empirical support for this view.

The distinction between multiple and single acquirers is related to the market's reaction to an announcement of an acquisition program. Schipper and Thompson (1983a) argued that the stock price capitalises the expected value of an acquisition program, as well as the likelihood of its accomplishment. If this were true, the reaction to individual mergers in an intended program would presumably be small, and have the character of an adjustment of the already formed opinion. However, Asquith et al (1983) presented results which indicated that the market also reacts to the subsequent acquisitions.

In addition to the potential explanations given by Jensen and Ruback (1983) and Halpern (1983) a number of other issues have been investigated. Lahey and Conn (1990), who studied the postmerger return over a three-year period, found that the cumulative returns were sensitive to the time perspective. They did not find any significant reaction during the announcement month, but the closer they came to the horizon, the more significantly negative was the outcome. Langetieg (1978), Asquith et al (1983), and Malatesta (1983) also reported negative abnormal returns in the year after the merger. Franks and Harris (1989) reported a significantly positive reaction during the announcement month, but it was significantly reversed by two years after the merger. Franks and Harris (1989) and Limmack (1991) did not report any significant results in immediate relation to the takeover, but during a two-year postmerger period they found a significant negative outcome

for the acquiring firm. Apparently, the results in the literature indicate that the stockholders of the acquiring firm lose in the long run.

Bradley et al (1988) found a significantly more positive stock market reaction for those takeovers where only one bidder took part.

Lubatkin and O'Neill (1988) found that the economic climate was important for the market's reaction. During bull markets, the acquiring firms experienced significantly positive abnormal returns, while the outcome was insignificant during bear markets.

6.1.5 Criticism of the market studies

The market studies are based on the presumption that the actors on the stock market correctly assess the expected implications of a takeover announcement, and hence that the observable stock price reaction to a bid is an approximation of the net present value of the takeover decision. This presumption is well recognised in the financial literature and its validity has been little debated in relation to the market studies. Instead, much of the critical discussion has been directed towards the statistical properties of the applied measures, the potential presence of confounding variables, the grounds on which managers make their decisions, and the importance of how the expected return is calculated.

The statistical properties of the applied measures have been discussed by among others Brown and Warner (1985), and will not be elaborated within the scope of this thesis. The potentially confounding variables include information leakage, thin trading, likelihood of a successful tender, and several of those factors that were described in relation to the disaggregated results of the market studies, such as the relative size of the merging parties. Information leakage means that (part of) the stock market has knowledge about the takeover before the public offer is made, and hence that the announcement date is not appropriate as a starting point for assessing the cumulative reaction to the bid. Thin trading means that the liquidity of the

stock is so small that it is difficult to draw any conclusions from stock price fluctuations. The likelihood of a tender means that, in a US environment, the stock market's reaction also comprises an estimate of the likelihood of a successful outcome of the offer, and not only of the potential value effects of the accomplished takeover. Finally, one part of the literature has not attributed the poor outcome for the acquiring firms' shareholders to statistical deficiencies of the applied measures, but instead has used the results as a starting point for discussing on what grounds managers make their decisions. These studies typically question the presumed wealth maximisation behaviour of managers, and propose that they are inclined to maximise the size of the companies they govern, or that they are affected by hubris as they make the investment and believe that the consummation will be successful.¹²

It has been demonstrated in the literature that the reported results are dependent on how the expected stock return for the acquiring firm is measured. Ellert (1975) stated that the models are interchangeable provided that consistent definitions and assumptions are made. Sudarsanam et al (1996) found support for this view, while the studies by Franks and Harris (1989), Lahey and Conn (1990), and Limmack (1991) generated significantly different results by using different models. Lahey and Conn (1990) found that the market model and the mean-adjusted return model gave consistent results in the short-run, but that the correlation decreases as the analysed time horizon is prolonged.

A critical question in this context is the validity of the presumption that the stock market actually can assess the corporate implications of a takeover decision. The hesitation is due to the combination of a short measurement period and the complexity of the underlying business decision. The measurement period in the market studies is often only a week or two; it must naturally be difficult for external analysts to scrutinise the implications of such a complex decision during a limited period of time with access to only parts of the grounds on which the takeover decision was made. Further, the difficulties involved in separating the takeover effects were manifest in the

¹² See Mueller (1969) for an illustration of the growth maximization hypothesis, and Roll (1986) for a discussion of the hubris hypothesis.

empirical study; it is probably at least as difficult for external analysts, considering that their opinions should disregard the advantages that the buying entity could have achieved even without the takeover, and that in some situations they have to manage a target that is not an independent entity pre-merger, but an integrated part of a company.

6.2 A review of the interview studies

The interview studies build on interviews with the merging firms' managers, who have been asked to classify the takeovers they have experienced as 'successes' or 'failures'. The interviews are conducted some time after the event, when the implications of the decision have begun to appear.

A critical feature in the interview studies is the meaning given to the notions 'success' and 'failure'. The two main studies in the area, Kitching (1973) and Hunt et al (1987), utilised slightly different definitions. Kitching compared the responsible managers' postmerger perception of the financial outcome to the pre-merger goals. Hunt et al asked the managers of both the target and the buyer, and assessed 'success' on five scaled questions relating to economic performance, and to the success or failure of implementing the buyer's strategy. In addition to this, both studies employed a category between 'success' and 'failure', which can be regarded as a 'neutral' outcome.¹³

Kitching interviewed 95 managers regarding the effects of a total number of 407 takeovers that were made during the period 1965-70 by US and European companies in various parts of Europe. The success rate was reported to be 53 per cent, while 26 per cent failed and 21 per cent were classified as neutral. Hunt et al presented similar figures, 55 per cent of the investigated 40 UK acquisitions in the UK and the US during the period 1981-85 were

¹³ Most surveys also include a relatively thorough study by Newbould (1970). Some scholars assert that he reports on the success and failure of takeovers, but I regard this as a precipitated interpretation of the discussion in his 5th chapter. For this reason, I have excluded Newbould's study from this discussion.

categorised as successes, while 25 per cent were said to have failed and 20 per cent to have been neutral. The general impression provided by these two studies are somewhat more optimistic about the effects of takeovers than the findings in two minor studies by Business International (1988) and Coopers and Lybrand (1993).¹⁴ The Business International study classifies the rate of failure to be in the interval 48 to 56 per cent, which is consistent with the conclusions in the Coopers & Lybrand study, where the corresponding figure was 54 per cent.

Both Kitching and Hunt et al broke their samples down into subgroups and presented results on a disaggregated level. Kitching found that related acquisitions, and then especially horizontal takeovers were most successful and least inclined to fail. He further concluded that diversification is dangerous, and that this caveat is even more relevant for concentric acquisitions. Hunt et al did not support this conclusion as they did not find any support for the hypothesis that horizontal mergers tend to be more successful than concentric mergers.

Kitching concluded that the characteristics of the target company had an impact on the reported rate of success. This was found to be higher the more profitable the acquiree was before the bid was presented, the larger its market share and the larger the value of its equity in relation to that of the buying company. As regards the last finding, Hunt et al concluded the opposite: the risk of failure increases with the relative size of the target's equity.

Hunt et al made some further findings on a disaggregated level; the prospects for success seem to be better the more experience the acquiring company has of previous merger processes, and the better the opportunities are to perform a general business audit of the target. In my opinion, the latter aspect is particularly important not only because such an audit may sort out potentially bad and good decisions and increase the probability of a successful outcome, but also since it might clarify the weak points of the target company and consequently provide the managers of the acquiring company with more realistic expectations on the target's performance. *Ceteris pari-*

¹⁴ I have not read the study by Business International. My comments about it are based on the study by Coopers & Lybrand (1993).

bus, this would enhance the likelihood that the reported outcome would be satisfactory in studies using Kitching's definitions of 'success' and failure'.

Hunt et al also concluded that changes in the organisational structure do not impact the prospects of success or failure, and that it is also irrelevant which one of the parties initiated the deal.

The criticism that has been put forward regarding the interview studies has focused on two aspects. First, the procedure used to classify a takeover as a 'success' or a 'failure' has been questioned. Kitching's comparison with pre-merger goals could lead to misleading results if the goals were unrealistic in some sense, or if the general business climate developed differently than expected. Second, Newbould (1970) argues that the interview methodology introduces systematic distortions in the results. He analysed the characteristics of the companies that refused to take part in his study, and concluded that they had experienced difficult postmerger processes, a result which might indicate that the companies that did participate in the study were those that had conducted successful acquisitions.

Finally, it cannot be ruled out that managers base their verdict on the post-merger outcome in accounting terms, and/or on the stock market's attitude to the share. In that sense, the interview studies reflect part of the information contained in the accounting and market studies. However, it is reasonable to assume that the managers only partly form their opinion on the sets of information captured by other research directions.

Part three

Part three (chapter 7) is a discussion of the main topic of this thesis, namely the relation between measures based on the theory of capital and measures based on accounting, in both a practical valuation context and in a setting where research is carried out regarding the outcome of corporate acquisitions. The input for the discussion consists of the observations and conclusions that were embodied in parts one and two of this study.

The two dimensions of the main topic will be elaborated in sections 7.1 and 7.2. Section 7.3, offers a speculative discussion regarding different methods of consolidation. Finally, section 7.4 presents some suggestions for further research.

7 Discussion

7.1 Implications for corporate valuation in a practical setting

In the theory of capital, the fundamental items in a valuation procedure are the cash flows that the owner can be expected to receive during the period of possession. These future cash flows are discounted to a present value by a cost of capital, which reflects the risk of the cash flows and the time value of money. The value concept of the theory of capital is based on three premises. The first requirement is that the consequences of a particular decision can be separated from those caused by other decisions. Secondly, that a reasonably accurate projection can be made of the time pattern of the expected future cash flows during the entire life of the investment, and thirdly that an estimate of the opportunity cost of funds during the life of the investment can be performed (Gold, 1976; Segelod, 1995).

In this thesis, I have empirically applied the theoretical approach to corporate valuation by studying the cash flow consequences of seven takeovers during a maximum period of five postmerger years. In section 4.1, I established that for three of the cases, the particular acquisition that was to be analysed could not be isolated from other activities of the combined entity. The most serious and also most frequent separation problem arose when part of the target's operations was restructured and merged with other parts of the combined entity. Another related problem occurred when the target's character was changed due to external subsequent acquisitions. The consequence was that it was difficult to isolate the implications of each takeover decision. The events that caused the separation problems typically occurred

at the beginning of the postmerger period, and consequently affected the major part of it.

The observation that different types of separation problems to a varying extent were empirically manifest, implies that one of the premises underlying the capital budgeting logic was not fulfilled. Valuation models based on incremental cash flows were therefore troublesome to apply *ex post* in the practical valuation setting of the seven cases studied. This conclusion is not surprising in the light of, on the one hand, the abstract statements in the literature on capital budgeting (Johansson, 1961; Honko, 1971; Hemmingsson, 1973; Neale and Holmes, 1990; Segelod, 1995), and, on the other, the research findings that indicate that the theoretical approach to corporate valuation is more often used *ex ante* than *ex post* (Ingham et al, 1992). This study contributes by describing the nature and extension of the separation problems in more detail than previous research. In the following, the implications of this contribution will be discussed.

On the basis of the seven cases that I have studied, it is clearly not possible to make inferences regarding the character and presence of separation problems in general. For more financially oriented acquirers, such as investment companies, the separation issue is probably less troublesome. The validity of my empirical observations is hence dependent on the character of the particular takeover. However, I suggest that the separation problems are at hand often enough, and that it would therefore be valuable to discuss their implications more thoroughly.

One essential issue to consider is the internal follow-up of takeovers. My empirical study demonstrated that incremental cash flows are difficult to discern. This is probably most true for related takeovers, where synergies are expected, and restructurings are likely to occur. It is less true for acquisitions where the target continues to operate rather independently, for example, in financially oriented acquisitions. It has been asserted in the literature on the outcome of corporate acquisitions, that one alternative is to assess the effects of takeovers on the basis of the target's financial reports. My empirical findings somewhat contradict this statement. While the main part of the incremental cash flows were to be found in the target group, the cash flows that resided in the acquiring group were still considerable.

The conclusion is that a follow-up of individual takeovers is sometimes troublesome to conduct, regardless of the chosen approach. However, the empirical study demonstrated that the incremental free cash flows, in the long run, were captured by the incremental accounting income, which is directly related to the consolidated accounting income. In such situations, the consolidated accounting information represents the most accessible source regarding the consequences of takeovers. However, the use of consolidated information means that any plans to follow the performance of individual takeovers must be abandoned. Instead, the emphasis will be on the entirety. Paradoxically enough, the takeovers that would be most interesting to follow individually, that is, those where value creation is most likely to occur, are probably those that are most troublesome to discern.

In this light, the role of the capital budgeting techniques can be questioned. Is it really justifiable to invest so many resources on detailed estimates of the uncertain future, when these estimates are seldom followed up in the same format when the future actually "arrives"? The answer is probably no. Instead, there are reasons for the literature to emphasise accounting ratios to a larger extent in practical corporate valuation situations. Their role should be to complement, not replace, the capital budgeting procedures. The advantage would be that the same valuation format could be applied throughout the valuation process.

In particular situations, interdependencies might exist between decisions over time. Making one decision today could force the company to make another decision tomorrow. Estimates and postaudits in incremental terms are inadequate if they do not take such circumstances into consideration, and therefore need to be complemented by accounting ratios.

There is a further risk that subsequent investments that extends the economic life of an asset look favourable on an incremental basis although they do not substantially improve the group's accounting return. Consider a situation where a company believes that it will not survive competition unless it makes an acquisition. The larger the expected deterioration of profits without the takeover, the more profitable the acquisition will be on an incremental basis.

My empirical study illustrates, as does previous research, that accounting ratios are at least as common in practice as measures based on capital budgeting approaches. When postaudits are conducted, they are made in an accounting format. The measures founded on the capital budgeting logic are mostly used *ex ante*. The fact that the two valuation systems in particular practical situations are used interchangeably deserves further discussion. It is a discussion with two dimensions: first, the relation between the income and value concepts of the theory of capital, on the one hand, and accounting on the other hand; second, the contrast between the incremental focus of the capital budgeting approach, and the comprehensive focus of accounting. It must also be emphasised that the separation issue does not mainly concern the relation between different concepts of value and income, but rather the prospects for discerning and valuing different parts separately. In that sense, accounting ratios can also be faced with separation problems when used in a marginal format. However, in their normal format, they refer to an entirety, that is, the sum of a number of parts. For that reason, it can be noted that separation problems are not an issue when consolidated accounting figures are used.

The suggestion of a more balanced perspective on the valuation of takeovers makes it essential to discuss the characteristics of accounting ratios, in order not to over-interpret the information they provide.

The merits of accounting are its practical usefulness and systematic construction. The financial accounting reports represent the only standardised periodic information concerning the financial outcome of a company's operations in general, and an increased emphasis on them in relation to takeovers has been proposed by, among others, Gold (1976) and Pinches (1982). It would lead to a better correspondence between what can actually be observed during the postmerger process, that is, the accounting return for the entirety, and the format of the capital appraisals that are carried out in the industry (see, for instance, Ingham et al, 1992).

The shortcoming of accounting in this context is the inability to, under particular circumstances, capture the value pattern of the theory of capital. This has been a starting point for a rich body of literature on the relation between accounting measures and their counterparts in the theory of capital. It has

often been argued in this context that the objective of accounting should be to measure economic income (Luckett, 1984). This pressure on the accounting information to provide a true and fair view of the reality it represents has increased during the latter years.

The value and income concepts that follow from historical cost accounting are similar to those in the theory of capital inasmuch as they are also based on receipts and payments. However they are different since they are mainly derived from past transactions, and not from expected future cash flows.¹ The relation between the accounting return and the economic return has been analysed for individual investment projects, typically in machines and equipment, as well as for balanced stocks of such projects. The papers by Harcourt (1965) and Solomon (1966), which have received much attention, are of interest in this context.² They performed analyses in a discrete format based on the assumptions that no uncertainty exists and that all expectations are fulfilled, hence the *ex ante* relation between the measures is equal to the *ex post* relation. By varying the settings in the numerical analyses, three main areas of conclusions appeared. First, the average accounting return over the investment's economic life is normally different from the average economic return. Second, the difference between the ratios is not consistent; for example, it varies with the length of the project's economic life, the fraction of the investment sum that is expensed during the first year, the accounting depreciation schedule, and the temporal pattern of the cash inflows. Third, the difference is normally not constant between different periods of the investment's economic life. As it appears from these studies, the difference between the return measures is mainly a question of accruals.

Several scholars have examined cases in which the return measures are identical. Solomon (1966) demonstrated that this occurs in investment projects with constant cash inflows where the accounting depreciation follows

¹ There are several alternative definitions of the accounting concepts of value, income and return, but the most appropriate within the framework of this thesis is the one that underlies the financial accounting reports, i.e. one based (mainly) on historical costs. Historical cost accounting can still be regarded as the main idea behind financial accounting reports, although there are exceptions to the rule.

² Harcourt's and Solomon's works are based on, among others, Anton (1956) and Johansson (1961).

the annuity method. Livingstone and Salamon (1970) established that this occurs when the reinvestment rate equals 1. Stauffer (1971) concluded that this happens when the growth rate of the firm approaches the accounting rate of return. Kay (1976) outlined a method that converted reported accounting rates of return to the economic rate of return, but this procedure is only applicable in situations where the book value is equal to the economic value at opening and closing dates.

The above studies are rather dated, but their conclusions are still valid. Later efforts in the area have elaborated the issue in continuous rather than discrete time (Kay, 1976; Peasnell, 1982), and/or analysed whether the ex post measures of accounting return are informative as regards future economic returns (see e.g. Kelly and Tippett, 1991). Both the earlier and subsequent literature generally concludes that the accounting return is not informative as regards the economic return of an investment project, that is, it does not reveal the properties of the expected future incremental cash flows.

The seven cases that I have studied illustrate the relation between incremental cash flows and incremental accounting income. On average, the two measures were close during the five year postmerger period. The average incremental free cash flows amounted to 10 per cent of the average acquisition cost. This was roughly three percentage points higher than the average incremental accounting income from operations. The patterns demonstrate that, in the long run, accounting ratios provide accurate descriptions of the merger consequences. However, during particular postmerger years, the measures were distant. The cash flows were higher than the accounting income in the first and last year, while the opposite was true for years in between. This difference is likely to be important in a society where short-term assessments seem to be increasingly important.

It is recognised that these relations were observed on the basis of a small body of empirical material consisting of related acquisitions, where the merging parties represented capital intensive industries. The patterns are probably not representative of takeovers with other characteristics.

The difference between the measures illustrates the importance of the goodwill issue. In fact, a substantial part of the postmerger difference be-

tween them, when expressed as an average of all cases, can be attributed to the depreciation of goodwill. According to several effective accounting standards, the goodwill item should be depreciated on a straight-line basis over its useful life. In the seven cases, the goodwill item was treated differently. The depreciation periods were of five and ten years, and in several cases goodwill was written down immediately, either through the income statement or direct against equity.

The empirical material further illustrated that the incremental cash flows were higher towards the end of the postmerger period than at the beginning. This was due to restructurings during the first phase of the postmerger period, which delayed the appearance of the positive merger effects. In this context, one issue which deserves a comment concerns the application of a straight-line amortisation of goodwill in relation to the incremental cash flow patterns that I have empirically observed.

The consequence of a linear depreciation schedule in these situations, is that the consolidated accounting income will be charged with a goodwill depreciation during the first years after the takeover that is too large compared to the incremental cash flows generated by the takeover decision. Similarly, during the latter part of the depreciation period, the consolidated income will be charged with a goodwill depreciation that is too small compared to the incremental cash flows. The implication of the combination between the observed cash flow patterns and a linear depreciation schedule for goodwill is that takeovers that demonstrate these features will lead to relatively more positive effects in the consolidated income statement towards the end of the postmerger period than at the beginning. These observations cannot be generalised to other corporate acquisitions, but provided that they are at hand often enough, they are of principal interest in relation to takeovers.

A second issue emanates from the fact that the positive merger effects were delayed until some postmerger years had elapsed. A fundamental idea behind the depreciation concept in the accounting literature is to match the investment expenses with the future revenues they give rise to. This would mean that depreciation should not be undertaken until the revenues are recognised. Hence, if it takes several years for the relevant revenues to appear, as it did in the seven cases I studied, it can be argued that the depreciation of

the underlying asset should not start before that day. The immediate write-downs of goodwill observed in the empirical cases are not consistent with this idea. An application of this argument would imply, *ceteris paribus*, that the consolidated income would be higher at the beginning of the postmerger period and lower at the end of it, compared to the income generated by a linear depreciation schedule. A potential practical drawback associated with the argument for a postponed depreciation of goodwill, is that a buying company due to the favourable consequences of this method, might consider arguing that the positive effects of its particular takeover are distant. It could then keep the initial balance of goodwill unchanged for some time, and in consequence not charge any goodwill depreciation against income.

It is interesting to note that a postponed depreciation of goodwill was suggested in the exposure draft preceding RR01, an accounting standard issued by the Swedish Financial Accounting Standards Board in 1990. The idea was that goodwill would not be depreciated until the integration gains that underlie the goodwill item were recognised. However, the final standard did not include this option, since it was unclear whether it was consistent with IAS. Further, the considering bodies did not support it.

A third issue concerns the fact that the amount of goodwill, which is initially established in the acquisition analysis, has to be depreciated according to a chosen schedule. At each balance date, it should be compared to the real value of the asset, in order to investigate the need for an extra devaluation. A fundamental aspect in this context is the demarcation of the cash flows that the item is associated with. As has been pointed out several times, an empirical conclusion of this thesis is that the separation problems were manifest in relation to those corporate acquisitions that have been studied empirically. It is therefore questionable whether the real value of the goodwill item at any point in time can be assessed at a reasonable cost. This might imply that current controls of the booked goodwill amount are hard to perform, and that the item can only be valued on rather standardised grounds.

In conclusion, when the incremental cash flow patterns resemble those of the seven empirical cases, it might be appropriate to apply depreciation schedules for goodwill that are not linear; also, the depreciation should per-

haps be postponed until the positive merger consequences emerge. In theory, such a procedure would mitigate the differences between the value pattern of the theory of capital and that of accounting, and further facilitate the complementary use of the two valuation systems. However, as regards the cases studied in this thesis, the incremental accounting income was higher than both the incremental cash flow from operations and the incremental cash flow after investments at the beginning of the postmerger period, but not at the end. A postponed and progressive depreciation schedule for goodwill would accentuate that difference.³

7.2 Implications for the research on the outcome of corporate acquisitions

A takeover is an important event which has significant implications for both the acquiring company and its stakeholders. The outcome of corporate acquisitions has consequently attracted considerable interest in the literature, where the issue has been elaborated on the basis of three main methodological approaches relying on either accounting, market, or interview data. These studies have received criticism for not having dealt with the basic issue. This was stressed by Mueller (1987, p. 36), who pointed at the capital budgeting approach:

*“What is at issue with respect to the efficiency of the allocation of capital are the **marginal** returns on investment. Thus, the many studies examining average returns on capital across firms and industries are, unfortunately, largely irrelevant to the question of whether on the margin mature firms invest optimally.”*

³ As already mentioned, AIO was lowered due to restructuring expenses during the first phase of the postmerger period. It is worth emphasising, that during the period covered by this study, the effective accounting standard did not allow companies to make provisions for restructuring costs in the balance sheet at the date of acquisition. Had such a possibility been at hand, and used, it would have led to another pattern of AIO.

Mueller's criticism is directed at the fact that consolidated accounting reports do not reveal the consequences of particular investment decisions. The financial effects of a takeover will hence be blended with other parts of the company's operations, provided that the target company does not remain an independent and clearly demarcated financial entity.

One conclusion from the first part of this thesis is that separation problems are probably manifest in relation to corporate acquisitions. It seems likely that they would also make it difficult to research the outcome of takeovers, in the format proposed by Mueller. This means that the market, accounting and interview studies have measured the outcome in the most accessible way. For that reason, the results and methods of previous research will be essential and deserve to be discussed further.

Several surveys regarding previous research have been conducted. They normally focus on one methodological approach, they include relatively few studies compared to the large number of individual studies, and their conclusions are to some extent inconsistent. Comprehensive surveys and analyses that combine all three approaches are few. In this thesis, I have carried out a comprehensive review of those studies founded on accounting income, and surveyed some representative studies based on market and interview data.

The accounting studies have normally measured the outcome on the consolidated level. A successful takeover typically means that the amalgamation performs better than the merging parties would have done without the takeover. A failure means the opposite. The definitions of success and failure hence build on a counterfactual comparison, a procedure that is difficult to apply empirically.

The accounting studies have used different measures of accounting return, such as return on equity (ROE), return on assets (ROA), and return on capital employed (ROCE). Return on sales (ROS) also appears frequently. The different measures are linked to the capital value of equity, which was demonstrated in chapters 2 and 5.

The research design of the accounting studies builds on a comparison between the merging sample, which is made up of companies that have experienced takeovers, and a control sample, normally consisting of non-merging companies from the merging parties' industries. It is hence the relative performance of the acquiring firms that has been analysed. The development of the control sample is supposed to be representative of what would have happened to the merging parties in the absence of the takeover. The analysis has normally extended from five years before the takeover, to five years after it.

The comparison in performance between the merging sample and the control sample provides the basis for conclusions on the success or failure of corporate acquisitions on certain conditions. First, that the alternative of carrying on as before was a real option for the merging companies. Second, that they in the absence of the takeover would have performed as the control sample. Third, that the relative performance measures also indicate whether a takeover is a success or a failure in absolute terms. Finally, that the chosen postmerger period is representative of the long-term outcome of acquisitions.

Provided that the accounting studies comply with the above requirements, an essential question is what they actually say about the success or failure of corporate acquisitions. My comprehensive survey suggests that companies that engage in merger activity do not earn a postmerger return that is significantly different than the average performance of their industry, or any other chosen benchmark. This impression is based on 22 relative performance studies. Insignificant results were reported by 17 of them: four studies concluded that corporate acquisitions have a negative impact on the combined entity's relative postmerger performance, and one stated the opposite.

In my empirical study, I found that the average incremental cash flows, in the long run, were captured by the incremental accounting income. Given the research design, the periodic differences between the measures do not influence the conclusions of the accounting studies. Since the consolidated accounting income comprises the incremental accounting income, it can hence be asserted that the accounting studies represent an indirect measure-

ment of the incremental cash flows, provided of course, that my findings are also relevant for other takeovers.

It must be recognised that an analysis of incremental cash flows basically represents an evaluation benchmark different from the majority of the accounting studies, which have compared the amalgamation's postmerger performance to what the parties would have achieved as stand-alone companies. Incremental cash flows are informative about the consequences of a takeover from the acquiring group's point of view. It is not possible to conclude what part of the incremental cash flows the acquirer would have received in the absence of the takeover. This circumstance prevents the transfer of the findings of the empirical study to the survey of the accounting studies. However, the comparison is possible in those studies where the amalgamation's postmerger development is compared to what the acquirer would have achieved without the acquisition.

Another issue relates to the link between my empirical findings and the survey of the accounting studies. It concerns whether the five-year postmerger period is long enough to allow for conclusions regarding the outcome of takeovers. From a pragmatic point of view, the answer is affirmative. The matching between the merging sample and the control sample becomes more difficult over time. This would impact the quality of the results. On the other hand, five years might be too short to capture the positive effects of takeovers, if they demonstrate the same positive temporal cash flow pattern present in my cases. However, the accounting studies have normally excluded the first postmerger year from the analysis. This is likely to have an upward impact on their results, provided that the takeovers show the same postmerger development as my cases, where the first postmerger year, on average, contained the lowest incremental accounting income figure during the postmerger period.

The core of the market studies is that the acquiring firm's actual stock return is compared to its estimated stock return during a period around the announcement date. The potential difference between the actual and the expected stock return is calculated over the period in question. It is a proxy of the net present value of the takeover decision, or in other words, the expected value creation.

The hypothesis about efficient capital markets, which states that all prices fully reflect all relevant information, and that stock prices adjust instantaneously to new information, is an important starting point for the market studies. Provided that the market is efficient, the expected future benefits of a corporate acquisition should be fully reflected in the stock price at the first public announcement of the takeover, to the extent that they can be predicted (Mandelker, 1974; Langetieg, 1978).

My survey of some representative market studies indicates that the stock market's reaction to a takeover announcement is predominantly insignificant, with a slight negative tendency. This impression is based on 29 different studies, of which 17 reported an insignificant reaction, nine a significant negative reaction, and three a significant positive reaction.

My survey of the rather few interview studies reveals that the managers involved in the takeover process regard the outcome as positive and negative in quite equal proportions.

It is striking that the three approaches have largely presented fairly similar, that is, mostly insignificant, results. Where any significant outcomes have been found, they have been reported to be predominantly negative. This observation is contrary to the conclusions of some previous surveys. The concordance of the presented results could imply that the different approaches validate each other, which would mitigate the methodological criticism that each of them can be subjected to. The unanimity might also have other consequences. The fact that the accounting studies provide the same general results as the market studies means, given that the former capture the actual outcome of corporate acquisitions, that the stock market generally manages to see through a takeover arrangement and correctly assesses its effects at least in a five-year perspective. However, the consistency in results between the accounting and market studies, does not indicate whether the stock market in individual cases reacts negatively to acquisitions that later prove to be failures, and positively to those that later are regarded as successes. The mere observation that the accounting studies and the market studies present the same general results contradicts the criticism that several authors of the market studies have directed towards the accounting procedure. These authors have established that the outcome of corporate

acquisitions cannot be inferred from consolidated accounting ratios. However, the fact that the market and the accounting studies present similar results, implies either that the consolidated accounting ratios do capture the relevant merger effects, or that the market studies also fail in this respect. The first interpretation was supported by a study of Healey et al (1992), who found a strong positive relation between postmerger increases in operating cash flows and abnormal stock returns at merger announcements.

It must be emphasised that differences do exist between the results of the three approaches. The market studies seem to present somewhat more negative results than the accounting or interview studies, and the interview studies tend to report more positive results than the accounting studies. However, it is quite natural that such differences are at hand. The studies use different measurement methods and thereby capture partly different aspects of a takeover process. Also, they apply different temporal perspectives, varying from some days in the market studies to several years in the accounting studies. Further, as indicated by Newbould (1970), it is likely that only companies that have conducted successful acquisitions are willing to take part in an interview study. This would lead to outcomes that are relatively more positive than the outcomes of market and accounting studies, which comprise both successful and unsuccessful takeovers.

The empirical study clearly shows individual variations in takeover outcome. This is expected since previous research has stated that certain merger types are more likely to succeed than others. The prospects of a favourable outcome have been said to be better when, for example, the value of the acquirer is large compared to that of the target (although some scholars have argued that the opposite is true), or when the parties' businesses are related.⁴ However, the results presented by scholars who have investigated the outcome of different types of takeovers, do not seem to support the idea that the individual outcomes follow a systematic pattern.

The accounting studies have seldom divided their samples into subgroups with different merger characteristics. Therefore, it is difficult to conclude which kinds of takeovers are associated with various postmerger accounting

⁴ See, for instance, Jensen and Ruback (1983) or Halpern (1983).

outcomes. In this study, I have made some efforts in this direction by dividing the 22 studies into various categories. I investigated the importance of dimensions such as the applied measure of performance, the strategic and industry profile of the samples, the composition of the control sample, the time period studied, the nationality of the samples, and the sample size.

The above procedure did not generate any marked differences in outcome between particular kinds of takeovers, with two exceptions. First, conglomerate takeovers seemed to outperform the control sample in terms of ROE. However, the number of studies concerning this issue was too small to allow for any general conclusions. Further, takeovers that are financed by debt will lead to an improved ROE, provided that the target's contribution to the group's income exceeds the costs of the acquisition on the group level, which implies that the financing form must be controlled for before any conclusion can be reached on this issue. Second, the studies that have compared the amalgamation's performance to that of companies in general, rather than to companies in the merging parties' industries, reported more negative conclusions regarding the outcome of takeovers.

The market studies have often divided their samples into subgroups with different merger characteristics. The results from these efforts differ, making it difficult to understand what type of takeovers will receive a positive stock market reaction, and what type will not. As regards the interview studies, the samples have been divided into subgroups with different merger characteristics. The studies, however, are few, and the results not unanimous, making it difficult to say which takeovers the interviewees regarded as successful, and which they classified as failures.

An essential question is how the absence of significant differences between takeovers with different characteristics should be interpreted. One potential explanation for the finding is that such differences do not actually exist. If this explanation is correct, it will be in contrast to the reasoning in several of the previous studies in the area, since it would imply that corporate acquisitions have a similar effect on the performance of the combined entity, regardless of the acquisition's features.

Another potential explanation for the finding is that the previous studies have not been successful enough in classifying the acquisitions. In this context, two sources of bias can be distinguished: the bias that arises if the takeovers in particular subsample are not similar enough, and the bias that emerges if two subgroups, that are compared, do not differ enough in their characteristics. Further, any division into subsamples also tests the validity of the classification schedule, according to Halpern (1983).

A third potential explanation for the absence of reported differences in outcome between takeovers with different attributes, is that previous research might not have directed its attention to all the factors that could be associated with systematic patterns in outcome. The factors whose importance has been investigated have often been of a quantitative nature and related to the situation before the takeover became effective, for instance, the significance of the relation between the parties' pre-merger size or performance. There are reasons to assume that the development during the postmerger period is also important in this context, and therefore presumably also more qualitative aspects of it. Examples would include the acquirer's implementation strategy, similarities and dissimilarities in the corporate culture of the merging parties, the relative number of top executives that resign after the takeover was consummated, or the competitors' strategic response to the takeover. Such factors are probably rather difficult to control for in a research study, but efforts in that direction seem worthwhile.

An interesting issue to consider is how the phenomenon of corporate acquisitions should be regarded in the light of the reported results. The crucial question is why firms continue to engage in takeover activity, when the scientific evidence seems to indicate that the prospects for success are dubious.

The conventional standpoint in the financial literature is that rational managers make their decisions in such a way that the wealth of the company's shareholders is maximised. In this context, the acquirer's valuation of the target becomes essential. It is a delicate task where, among other things, secrecy and time pressure handicap the buyer. Johansson (1973) discussed the maximum price the buyer would be prepared to pay (B_{\max}) together with the lowest price the seller would accept (S_{\min}). A prerequisite for a deal is that B_{\max} exceeds S_{\min} . In a situation where there is no competition for

buying the target, the buyer should not offer to pay more than S_{\min} . Synergies that could result from the deal should not be paid for, since the seller cannot obtain them himself.

A neutral or positive outcome of corporate acquisitions is consistent with this idea, since the theory states that investments should be made as long as their net present values are non-negative. A decision that is expected to return a zero net present value implies that abnormal gains will not occur as long as the expectations are fulfilled, and that the investor will earn a return that corresponds to his/her required rate of return. A neutral or positive outcome of corporate acquisitions is also compatible with the idea that a competitive and well functioning market for corporate control exists, where competition between different acquirers raises the purchase prices for particular targets towards the level where only one buyer can be expected to earn a non-negative net present value. The market for corporate control is hence assumed to be so competitive that all expectations of abnormal future income levels are reflected in the price paid for the target, thus potentially eliminating the prospects of high future returns (see e.g. Mueller, 1969).

A neutral or negative financial outcome of takeovers can also be discussed with reference to the hubris hypothesis (Roll, 1986) and/or the growth maximisation hypothesis. Roll's hubris hypothesis states that the managers of the acquiring firm suffer from hubris and pay too much for the target, hence eliminating the prospects of a successful outcome. The growth maximisation hypothesis states that merger decisions are not explained by efforts to maximise the wealth of the shareholders, but are rather taken for the utility of the managers of the acquirer, for reasons such as prestige, power etc. Given that growth maximisation is at hand, and further that it is inconsistent with value maximisation, takeovers would be assumed to be associated with a negative outcome. The mainly insignificant and sometimes negative results in the literature can be considered in the light of these theories.

Finally, can corporate acquisitions be expected to be more successful in the future when more knowledge about them has been accumulated? It has been stated in the literature that the analysts can estimate the corporate implications of a takeover decision by reference to other acquisitions that they have

experienced.⁵ This position seems reasonable, but it can nevertheless be questioned in the light of the empirical observations in this thesis. The investigated takeover cases were similar in some aspects, but different in others. The generality of this empirical observation cannot be assessed, but it does seem probable that acquisitions are different from each other to such an extent that previous deals are not necessarily informative when the implications of present takeovers are to be assessed.

7.3 A speculative discussion of consolidation methods

One aspect of accounting for consolidations concerns the prerequisites for a consolidation method that is more consistent with the theory of capital than are the prevailing consolidation methods, and the consequences of applying such a method. The starting point is that the financial accounting reports should capture the principal features of corporate takeovers, among those the cash flows described in chapters 4 and 5. The alternative method ought to express the new entity's financial position and profitability according to the theory of capital.⁶

The basic distinction between the prevailing consolidation methods is that they are derived from different perspectives on the merging parties. The pooling method is based on the view that both parties survive and that no new entity emerges (Hendriksen, 1982). Consequently, the values of the stand-alone parties' net assets will be entered in the consolidated balance sheet. The purchase method is based on the view that the buying entity survives, while the target company's operations are disrupted (Hendriksen, op.

⁵ Bergström et al (1989).

⁶ I have chosen to adopt the rather common interpretation that the theory of capital provides ideal measurements of income and capital. This position is sometimes controversial. Beaver (1989) recognises it in a world without uncertainty, but questions its validity when uncertainty is at hand.

cit.). Thus, it would be motivated to revalue the target's net assets before they are entered in the consolidated balance sheet.

It is recognised that the prevailing consolidation methods can be explained on other grounds. The purchase method is an application of the principle that new assets should be recorded at acquisition cost. In particular situations, it is difficult to establish which company is the buyer and which is the target. In those case, it seems less appropriate that the merged entity could be portrayed differently depending on which company is finally regarded as the buyer. That is the motivation for the pooling method.

The basic logic behind the two prevailing consolidation methods can be questioned. An alternative approach would be to regard both parties' operations as disrupted, which implies that a new entity emerges at the consummation date. Thus, it would be motivated to revalue both parties' net assets before they are added together in the group's consolidated balance sheet. There are some arguments for regarding the amalgamation as an entirely new entity. One such argument is that an acquisition normally changes the buyer's capital structure. The relation between the financiers is thus altered which, according to the entity theory of accounting, implies that a new state has occurred. The alternative method would be more consistent with the theory of capital, since market values would be fully applied in the consolidated balance sheet. In the following, I first establish when the three methods provide similar measures of financial position and profitability, and when they differ. I then discuss the prerequisites for applying the alternative method within an accounting system based on historical cost.

In general terms, the three methods are related to each other in the following way as regards the:

- financial position: alternative \geq purchase \geq pooling, and
- return on equity: pooling \geq purchase \geq alternative.

The three consolidation methods evidently lead to identical financial ratios for the new group provided that the merging parties are fair valued, that is, when the book values of their net assets correspond to their market values. However, when there are unrealised capital gains in one or both companies, the financial ratios that are based on the pooling method will deviate from

those given by the alternative method. Further, the purchase method and the alternative method give rise to different financial ratios when the buying company has unrealised capital gains. Finally, it can be noticed that when one of the parties has unrealised capital gains, the purchase method gives different representations of the new entity depending on who buys whom. Under these circumstances, a reversed takeover can serve as a tool for providing a different image of the new entity. However, none of the images will be unequivocally superior, since the effects on the financial position and profitability work in opposite directions.

The alternative method, however, cannot be easily applied in practice; it appears to be inconsistent with the prevailing accounting system based on historical cost. This conclusion can be considered to be precipitated for two reasons. First, it could be questioned whether the existing accounting system is exclusively based on historical cost. There are several exceptions to that valuation basis, such as the possibility to revalue material fixed assets. Another example is the equity method for particular minority stakes in other companies, which implies that the value of a possession in another company can be increased in the books without any transaction taking place. Second, it is not indisputable that the alternative method is inconsistent with the principle of historical cost. On the contrary, the logic behind the alternative method is the view that the stand-alone companies' operations are disrupted, and that a new entity emerges. Then a basis for accountability exists, and the assets and debts of the new group will be recorded in the books at their value when the new entity was created, that is, at their acquisition cost from the perspective of the new entity. The alternative method can therefore be regarded as consistent with an accounting system based on historical cost. One advantage of the alternative method is that it facilitates comparisons between the company's accounting return and the stock market's required rate of return, if, that is, the market expresses its demands on the market value of a company's net assets.

The alternative method, however, also comprises several drawbacks. It is unreasonable to expect that every investment should lead to a revaluation of the acquirer's assets. Few individual investments have such widespread implications that they radically change the position of the entity, which is

the logical basis for the revaluation of the net assets. Further, such a procedure would require enormous resources to be spent on the revaluation.

A second drawback is that the alternative method makes temporal analyses difficult. For companies that make acquisitions, and account for them in accordance with the alternative method, the trends will be difficult to interpret. Naturally, the same criticism applies for the purchase method.

A third drawback is related to the idea that the alternative method would serve as a means for reducing the difference between market values and book values. It is true that the alternative method complies with this idea, but as long as the accounting system in general is based on historical cost, the value difference might be at hand again some years after the acquisitions.

A fourth drawback is that the alternative method reinforces a problem associated with the purchase method, namely that assets are recorded at different values in the legal entities and the group. This introduces some management control difficulties.

To conclude the discussion on the alternative method, it can be derived from the accounting theory without eliminating historical cost as the main valuation basis, assuming that the combined companies can be regarded as a new entity. However, it is associated with several practical problems, and it is unlikely to be considered as a realistic alternative to the prevailing consolidation methods.

7.4 Suggestions for further research

During the work on this thesis, I have come across several topics that are related to my research issues, but that have not been possible to elaborate within the scope of this study. Below, I suggest three issues that would be possible and interesting to develop in the future.

The first suggestion for further research originates from the observation that the studies that have investigated which takeovers are successes and which are failures, have normally divided their samples into appropriate subgroups on quantitative grounds, such as the relative size or profitability of the merging parties before the takeover is announced. It seems more probable that differences in takeover outcome can be explained by qualitative factors related to the development during the postmerger period, such as the acquirer's implementation strategy, similarities and dissimilarities in the corporate culture of the merging parties, the relative number of top executives that resign after the takeover is announced, or the competitors' strategic response to the takeover. Such factors are naturally rather difficult to control for in a research study, but efforts in that direction would appear to be worthwhile.

Another potential research issue would involve investigating how the actors on the stock market form their decisions to sell, buy, or hold the shares of the companies involved in a takeover announcement. Interesting aspects in this context are to what extent accounting ratios have an effect on the decisions, and whether the experiences from previous takeovers are taken into account.

A third research effort could be a study that combines the approaches applied in the literature regarding the financial outcome of takeovers. A starting point would be to ask a number of stock market analysts to identify, for instance, 50 successful and 50 unsuccessful takeovers. The resulting sample could serve as the basis for traditional accounting, market and interview studies with the explicit purpose of comparing similarities and dissimilarities between the results generated by each approach.

Sturgess and Wheale (1984) made an effort in this direction. They applied a market approach on the sample used in Utton's (1974) accounting study. Unlike Utton, they did not report any significant results. However, it must be remembered that the two studies did not measure the same aspect of performance. The ROCE ratio used by Utton is only a partial explanation for the changes in the capital value of equity, as was pointed out in section 5.1.

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