UNIVERSITY OF LJUBLJANA FACULTY OF ECONOMICS

MASTER THESIS

AN EVALUATION OF THE VALUE RELEVANCE OF CONSOLIDATED AND UNCONSOLIDATED ACCOUNTING INFORMATION: EVIDENCE FROM THE UNITED KINGDOM

Ljubljana, October 2002

DAMIJAN DOLINAR

Študent Damijan Dolinar izjavljam, da sem avtor tega magistrskega dela, ki sem ga napisal pod mentorstvom prof. dr. Neila Garroda in skladno s prvim odstavkom 21. člena Zakona o avtorskih in sorodnih pravicah dovolim objavo magistrskega dela na fakultetnih spletnih straneh.

V Ljubljani, 8.10.2002

Podpis:_____

1	INTRODUCTION	1
2	FINANCIAL STATEMENTS	3
	2.1 NEED FOR FINANCIAL STATEMENTS	3
	2.1 NEED FOR FINANCIAE STATEMENTS	3
	2.2 CLASSES OF OSERS	5
	2.2.2.1 Investors, 1 otomical investors and security industis	1
	2.2.2 Lenders	1
	2.2.4 Customers	
	2.2.5 Suppliers	5
	2.2.6 Employees	5
	2.2.7 Government and Other Institutions	5
	2.3 GROUP FINANCIAL STATEMENTS	6
	2.3.1 How Did Group Financial Statements Evolve ?	6
	2.3.2 Purpose of Group Financial Statements	7
	2.3.2.1 The Traditional View	7
	2.3.2.2 The Alternative View	8
	2.4 CONSOLIDATED FINANCIAL STATEMENTS – THE THREE CONCEPTS	8
	2.4.1 The Parent Company Theory	9
	2.4.1.1 The Parent Company Concept	10
	2.4.1.2 The Proportionate Consolidation Concept	10
	2.4.2 The Entity Theory	. 11
	2.4.2.1 The Economic Unit Concept	12
	2.4.5 Summary of the Consolidation Concepts	. 13
3	ACCOUNTING REGULATION & CONSOLIDATION ISSUES	. 13
	3.1 THE U.S. APPROACH	. 14
	3.1.1 Group Definition	. 14
	3.1.2 Accounting Practice	. 15
	3.2 THE E.U. APPROACH – THE SEVENTH DIRECTIVE	. 15
	3.2.1 Group Definition and Consolidation Rules	. 16
	3.2.2 Accounting Practice	. 17
	3.3 INTERNATIONAL ACCOUNTING STANDARDS	. 17
	3.4 THE U.K. APPROACH	. 19
	3.4.1 Group Financial Statements in the U.K	. 19
	3.4.2 Consolidated Financial Statements	. 19
	3.4.2.1 Subsidiary Undertakings	20
	3.4.2.2 Associated Undertakings	21
	3.4.2.3 Other Investments	21
	3.4.3 Balance Sheet of the Parent Company	. 21
	3.4.4 Other Information on the Group Structure	. 22
4	THE NATURE OF MINORITY INTEREST	. 22
	4.1 TAKEOVERS	. 22
	4.1.1 Tendering less than 100% for Anv-or-All Tender Offers	23
	4.1.1.1 Theoretical Explanations of the Nature of Minority Interest	24
	4.1.1.2 Theoretical Considerations on Sources of Gains in Corporate Takeovers	26
	4.1.2 Partial Acquisitions by Tender Offers	. 26
	4.1.2.1 Theoretical Explanations of Motivations for Partial Acquisitions by Tender Offers	27
	4.1.2.2 Economic Effects of Partial Takeovers on Minority Interest	28
	4.1.2.3 Legal Considerations Concerning Partial Takeovers and Minority Interest	29
	4.2 EQUITY CARVE-OUTS	. 31
	4.2.1 The Equity Offering Perspective	. 31
	4.2.2 The Sale-of-an-Asset Perspective	. 33
	4.5 UTHER CONSIDERATIONS ON THE NATURE OF MINORITY INTEREST	. 33
	4.3.1 Legal Protection of Minority Shareholders	. 33
	4.3.2 The Reputation Effect of the Majority Shareholder	. 34
	4.5.5 A Strategic Acquisition of a Minority Interest Holding	. 35
	4.4 I HE NATURE OF MINORITY INTEREST AND CONSOLIDATION PROCEDURE IMPLICATIONS	. 35

5	ANALYSIS OF THE VALUE RELEVANCE OF ALTERNATIVE FINANCIAL REPORTING				
	CONCEPTS	IN THE U.K. CONTEXT	37		
	5.1 INTROD	UCTION	37		
	5.1.1 Subj	ects of the Study	37		
	5.1.2 Valu	e Relevance	39		
	5.1.3 Rela	ted Studies	40		
	5.1.4 Gene	ral Hypotheses of the Master Thesis	40		
	5.2 THE MC	iDEL Residual Income Valuation Framework	41 11		
	5.2.1 The I	Rasic Models Used in this Study	41		
	5.3 ECONOM	METRIC ISSUES	46		
	5.3.1 The	Vuong Test	46		
	5.3.2 Testi	ng the Equality of Two Regression Coefficients	49		
	5.3.3 Scale	? Effects	50		
	5.3.4 Price	2-Earnings Non-Linearity	53		
	5.4 THE SAI	MPLE	54		
	5.5 EMPIRIO	CAL EVIDENCE	57		
	3.3.1 Ine.	The Parant Company Information Model	37		
	5512	The Proportionate Consolidation Model	57		
	5.5.1.3	The Economic Unit Model	59		
	5.5.1.4	Comparison of the Three Models	59		
	5.5.2 The	U.K. Model	61		
	5.5.3 The I	Extent-of-Control Model	62		
	5.5.4 Inter	Pretation of Results	04 64		
	5.5.4.2	Value Relevance of Consolidated vs. Unconsolidated Accounting Information	65		
	5.5.4.3	Value Relevance of the Competing Consolidation Concepts	65		
	5.5.4.4	Value Relevance of the Three Distinct Levels of Investment	66		
	5.5.5 Indu.	stry Group Analysis	66		
	5.5.6 Emp	irical Results and the U.K. Accounting Practice	0/		
6	ACCOUNTI	NG REGULATION IN SLOVENIA & CONSOLIDATION ISSUES	68		
	6.1 INTROD	UCTION	68		
	6.2 The ZG	D-F CHANGES TO THE COMPANIES LAW (ZGD)	69		
	6.3 SLOVEN	IE ACCOUNTING STANDARDS (2002)	70		
	6.3.1 Cons	olidation Issues	70		
	6.3.2 Trea	tment of the Three Levels of Investments in the Parent Financial Statements	12		
	6.4 SLOVEN STUDY.	E ACCOUNTING REGULATION IN THE CONTEXT OF THE EMPIRICAL RESULTS OF THIS	72		
7	CONCLUSI	ON	73		
R	FFFRFNCFS		75		
IX.			15		
S(OURCES		82		
A	PPENDIX A:	List of Acronyms and Abridgements Used in this Master Thesis	(1)		
A	PPENDIX B:	Overview of Symbols Representing Variables Used in the Value Relevance Analysis	s(2)		
A	PPENDIX C:	List of Industry Groups in the Analysis	(2)		
A	PPENDIX D:	Sample Characteristics	(3)		
A	PPENDIX E:	Industry Group Results	(4)		
A	PPENDIX F:	Deflation by Lagged Market Value – Results of the Value Relevance Analysis	(12)		

1 INTRODUCTION

Company organization has developed such that most important firms now operate in a multinational, multi-industry and multi-entity structure. In an attempt to reveal the financial position and operating results of such group structures to shareholders of the parent company, regulators require consolidated accounts to be produced.

In accounting literature two consolidation theories emerged, namely the parent company theory and the entity theory. Under the *parent company theory* it is presumed that consolidated financial statements are an extension of parent company financial statements and should therefore be prepared from the viewpoint and for the benefit of the parent company shareholders. Only the parent shareholders' interest in the group is treated as equity. Under the *entity theory*, which focuses on the core operating unit being the group rather than the parent, also minority interest holdings are considered as part of equity of the consolidated financial statements should thus reflect the viewpoint of the total business entity under which all resources controlled by the entity are valued consistently. In accounting practice three competing consolidation concepts developed from these theories. They mainly differ in how minority interest components of earnings and net assets are treated.

Whilst in the United States (U.S.) and in the United Kingdom (U.K.) consolidated accounts have been disclosed for some time, these are a relatively recent requirement within the European Union where the incorporation of the Seventh Company Law Directive into national legislation was carried out in the beginning of the 1990s. Consolidation rules in these countries mostly evolved from the accounting practice and therefore do not reflect an interconsistent approach but rather parts of both the parent company theory and the entity theory. However, in the last decade accounting regulators in the U.S. and the U.K. have been showing a steadily growing preference for the entity approach. The U.S. accounting rules even go so far that companies producing consolidated accounts do not need to present parent accounts.

This master thesis aims to provide evidence on the suitability of such moves. This is done in two steps. Firstly, as the basic difference between competing consolidation concepts rests on the treatment of minority interest items, the nature of minority interest is examined by reviewing the financial economics literature on corporate control transactions, and by considering some legal aspects. Secondly, the value relevance of parent company accounting information and the value relevance of alternative consolidation approaches is empirically investigated in the context of the U.K. accounting regulations and firms that are quoted at the London Stock Exchange. The emphasis is put on the investigation of the value relevance of the minority interest components of net assets and earnings along the lines of the alternative consolidation approaches. The main valuation issues regarding consolidation are straightforward: do the parent company accounts, the consolidated accounts as currently prescribed, or alternative methods of consolidation to that currently used, provide the most

useful pricing information? To test for valuation differences between the different approaches of presenting accounting information a valuation model is utilized based on the residual income valuation framework.

As the master thesis deals with the value relevance of the U.K. accounting information as currently prescribed, the results along with their implications should be in the interest of the U.K. accounting regulator, i.e. the Accounting Standards Board. However, as the prescribed U.K. financial reporting rules enable the value relevance analysis and comparison of different consolidation concepts and the parent company accounting information, the empirical analysis in this master thesis may also have more international ramifications and interest. As the Slovene accounting rules on consolidation issues were changed by introducing the new accounting standards, these are evaluated in the context of the empirical evidence of this thesis.

The master thesis is organized as follows. The next chapter deals with financial statements. Classes of users along with their needs with regard to financial statements in general and group financial statements are considered. The emphasis of this chapter is however put on the presentation of the competing approaches to consolidation stemming from the parent company theory and the entity theory. The third chapter briefly presents consolidation approaches in the U.S., the E.U. and the consolidation rules as set out in the International Accounting Standards. The U.K. accounting regulations on consolidation issues are described more in depth, as they are part of the research question. In the fourth chapter the nature of the minority interest is examined by investigating economic motivations surrounding corporate control transactions as well as by providing some other aspects. The fifth chapter of the master thesis provides the empirical value relevance analysis of the parent company accounting information and the competing consolidation concepts in the U.K. context. The first section deals with research issues such as market-based accounting research, value relevance and presents related papers and the hypotheses. Then the models are formally developed and explained. The third section is about econometric issues arising in this kind of empirical analysis whereas the fourth section presents the sample. This is followed by the results and their interpretation. The chapter is concluded by discussing the results in the context of the U.K. accounting rules. The sixth chapter presents the consolidation rules in Slovenia and discusses them in the context of the results of the previous chapter. The seventh chapter concludes.

2 FINANCIAL STATEMENTS

2.1 NEED FOR FINANCIAL STATEMENTS

Financial statements are meant to provide information that is useful to its users, namely present and potential investors, creditors, and other users, in making rational investment, credit and similar decisions (White, Sondhi and Fried, 1997, p. 2). Different users need different information in order to be able to make improved decisions. However, financial statements tend to have limitations regarding their informativeness to their users. Thus, accounting data represent but one of the inputs into the decision making process of any of the users.

In the Anglo-American financial literature it is investors and to an extent creditors that are broadly assumed to be the primary users of financial statements. This is mainly due to the historical fact that in many respective countries capital markets have provided the major source of external financing for firms (Cummins, Harris and Hassett, 1994, p. 1). Hence, information provided by financial statements is mostly tailored to the needs of equity and credit investors. Nevertheless, financial statements are being used by a number of other users as well. Various classes of users are briefly described in the following section.

2.2 CLASSES OF USERS

Financial statements are being used by several types of users, which can be classified in various ways. Considering the role they play in the relationship to the company they can be classified into: (i) *external users*, consisting of existing shareholders and potential investors, creditors, suppliers and customers as well as respective governmental and regulatory institutions; (ii) *intermediary users*, such as security analysts and the financial press; and (iii) *internal users*, namely the managerial staff and other employees as well as respective representatives. Regarding the sort and type of company information that various users are interested in these could be described either as (i) *contractual claimers* that are mostly interested in information on the default risk of the company or as (ii) *residual claimers* with claims on residual profits and net worth. The first group of users would include creditors, suppliers and employees along with the management while the latter would be represented mainly by shareholders and tax authorities (Samuels, Brayshaw, and Craner, 1995, p. 5).

The following subsections present the main users of financial statements along with the type of information that serves their interests best.

2.2.1 INVESTORS, POTENTIAL INVESTORS AND SECURITY ANALYSTS

Existing shareholders and potential investors along with their representatives and security analysts need financial statements in order to make decisions whether to buy, hold or sell a company's shares. As the return on shareholders' investment is represented by dividends and capital gains, they are interested in how the firm has managed its assets. Namely, past firm performance would represent an indication of how the firm will manage its assets in the future and thus affect the firm's profitability and ability to pay out dividends. Although economic earnings¹ are more important for issues of valuation, accounting earnings are suggested to be useful in assessing economic prospects of a firm (Bodie, Kane and Marcus, 1999, p. 570). Besides, because the required rate of return on investment is also associated with its riskiness, investors are also interested in information on the basis of which they can assess risks related to their investment. Thus, from the shareholder perspective financial statements should provide information on asset management as well as information about the impact of borrowed funds on risk.

2.2.2 LENDERS

Lenders are mainly interested in the firm's ability to make the agreed payments of interests and the principal. As loans can be of short-term or long-term nature, lenders are interested in whether the firm will dispose of enough cash to meet its current obligations stemming from the loan as well as whether the firm will be profitable and solvent enough over the long run. Besides, loans are often accompanied by certain restrictions on the borrowing company's ability to incur additional debt and make dividend payments. These debt covenants, which are imposed by lenders in order to protect themselves, are based on some financial indicators calculated from figures in financial statements. Hence, lenders are interested in particular financial indicators as well as in the methods used by a borrowing company to produce financial statements.

2.2.3 MANAGERIAL STAFF

There are many reasons for why the managerial staff of the company is interested in the firm's financial statements. One of them is that a part of the compensation contract of the managerial staff may be tied to some figures that are being reported in financial statements. For instance, the variable part of the manager's compensation package can be tied to sales, operating profit or to the return on assets. However, in such a case the principal-agent problem arises as the management in effort to pursue its own benefits could lead a business policy that would enhance those financial figures that positively affect their compensation with no regard to other factors that would influence the firm's business. Besides, the management can also make use of the data from financial statements as input variables when making financial and

¹ Economic earnings are defined as "the sustainable cash flow that can be paid out to stockholders without impairing the productive capacity of the firm" (Bodie, Kane and Marcus, 1999, p. 575).

investment decisions as well as decisions about paying out dividends to the firm's shareholders.²

2.2.4 CUSTOMERS

A rational customer whose business performance strongly depends on timely supply of an important product is interested in the financial health of its supplier. Eventually, such a customer could suffer an immense loss in case its supplier could not provide the respective product on time. Thus, the information from financial statements that a rational customer will be interested in most is information associated with profitability, financial stability and long-term viability of the supplying company.

2.2.5 SUPPLIERS

Suppliers are mainly interested in whether their customer will be able to meet its obligations from their relationship within agreed terms. Therefore, suppliers will search for information related to profitability, liquidity and the indebtedness of their clients.

2.2.6 Employees

Employees are particularly interested in long-term performance and survival probability of the company they work for. Their decisions about their careers as well as eventual negotiations on future compensation schemes are strongly associated with expectations formed also on the basis of information contained in financial statements.

2.2.7 GOVERNMENT AND OTHER INSTITUTIONS

The government and its institutions become a financial statement user mostly when it comes to accurate calculation of tax liabilities. In some countries, e.g. Germany, the accounting profit is very close to the taxable profit (Cummins, Harris and Hasset, 1994, p. 6) while in some other countries, e.g. the United Kingdom and Ireland, the taxable profit is derived from the accounting profit (ibid., p. 25). Finally, there are also some countries, e.g. the United States, where for financial reporting purposes and for tax purposes two different statements should be produced (ibid., p. 5).

 $^{^2}$ The possible effect of additional borrowing on the debt-to-equity ratio can have a great influence on actual decisions on whether the firm will borrow more or not. Similarly, in investment decisions managers are interested in how alternative investment projects will influence short-term and long-term profitability indicators (Samuels, Brayshaw and Craner, 1995, p. 5).

2.3 GROUP FINANCIAL STATEMENTS

2.3.1 HOW DID GROUP FINANCIAL STATEMENTS EVOLVE?

The twentieth century has been marked by progressive technological development and by immense social changes as well as by growing complexity in how companies are being organized (Stonehouse et al., 2000, p. 1). There is an apparent trend of running business through groups of companies usually controlled by parent companies. Their control is overwhelmingly executed through voting rights they own in their subsidiaries. In the last decades, this trend has been accelerated by waves of mergers and acquisitions, many of them crossing the borders of national economies (Gray and Needles, 1999, p. 413). In accordance with the trends mentioned a need for group financial statements has evolved in order to reveal the performance of the group of companies that is under control of the parent company's management.

Prior to the evolution of group financial statements parent company shareholders usually only received individual company accounts, which were not very informative because of the emergence of various organizational structures through which companies have operated. In parent company accounts investments were stated at cost and if a profit and loss account was provided at all, only dividends due from subsidiaries were shown. However, these accounts provided no information about the total assets and liabilities controlled by the group as a whole and no details on the profitability of subsidiaries. Thus, the information content of financial statements disclosed by two similar companies in the same business would differ subject to their legal form. A company using a divisional or departmental structure within a single legal entity would have to disclose total assets, liabilities and earnings of the whole entity. If the same company would use the same organizational structure that would differ only in its legal definition, namely instead of the divisions there would be subsidiaries, the parent company would have to disclose only the assets and liabilities of the parent and only dividends due from investments. Consequently, investors would be deprived of knowing a substantial part of information about the company they invested in (Taylor, 1996, p. 2), as shown in Figure 1 (See p. 7).

In the beginning of the twentieth century the major companies, particularly those in the U.S. and the U.K., became steadily more reliant on external capital financing provided by capital markets. On the contrary, the dominance of the families, which founded these companies, became steadily weaker. As a consequence, managerial awareness of the importance of better public relations developed (Arnold and Mathews, 2001, p. 3). Hence, some companies began to prepare group financial statements in order to make the reports more informative and interesting.

Figure 1: What is Known and what is Unseen from the Parent Company Accounting Information



Source: Taylor, 1996, p. 2.

2.3.2 PURPOSE OF GROUP FINANCIAL STATEMENTS

In contrast to parent company financial statements, group financial statements broaden the reporting entity by including all entities that are under the parent company's control or influence. Their main goal is to report financial information about the group of companies operating as one single unit (Davies, Paterson, and Wilson, 1999, p. 267). As mentioned, many users have an interest to obtain information about the financial position and performance of a group of companies as a single entity. In accordance with different reporting needs of various classes of users two major views on the purpose of group financial statements have evolved, namely the traditional and the alternative view.³

2.3.2.1 The Traditional View

The traditional view on group financial statements, especially within the Anglo-American accounting literature context, is based overwhelmingly on the interests of the parent company shareholders. Within this perspective the purpose of group financial statements is to provide either (i) supplementary information to parent company accounts, or (ii) primary financial information to parent company shareholders.

Group financial statements as a supplement to the parent company financial statements are being justified by the argument that the parent company operates also through other companies and thus additional information makes sense. From this perspective, consolidated financial statements represent but one of the alternatives to supplement parent company accounting information. Another alternative would be to supplement parent company information with the disclosure of financial statements of subsidiaries (Taylor, 1996, p. 14).

³ These two expressions are taken from Taylor (1996).

In contrast, advocates of the group financial statements as the primary source of financial information to parent shareholders claim that the legal structure of a group of companies is mainly a consequence of historical incidents. Thus a greater meaning is ascribed to consolidated financial statements and hence the parent company financial information is of secondary importance to parent company shareholders.

2.3.2.2 The Alternative View

The alternative view on group financial statements rests on the interpretation of the group of companies as a single economic unit with its own rights separated from its shareholders that represent but one of the sources of financing the company. From this perspective group financial statements are not focused only on narrow interests of parent company shareholders but are aimed at all relevant stakeholders that have a reasonable right to information arising from the public accountability of the equity.

Under this view, minority interest shareholders are recognized as shareholders of the whole group of companies, though with less rights and negotiating power than the parent company shareholders. Hence, group financial statements should provide them with valuable information to enhance their decisions.

Lenders are also perceived to gain from the preparation of group financial statements. These namely enable them to make a more reliable risk assessment of the lent funds by getting true and fair accounting information about the indebtedness, liquidity and solvency of a group of related companies.⁴

Finally, also other subjects are perceived to gain from the insight into a group of companies that is under control of one management. Group accounts that would capture such groups of economic subjects would be interesting for national economic policies while supervision of such groups in order to prevent the abuse of the power of control or the economic power would be useful for tax authorities, regulatory bodies and others.

2.4 CONSOLIDATED FINANCIAL STATEMENTS – THE THREE CONCEPTS

Consolidated financial statements represent but one form of group financial statements. They are aimed to reveal the true and fair view of the financial position and performance of the consolidated entity. These accounts present financial information about a group of companies

⁴ Whittred (1987, p. 264) describes a case of Australian corporations between 1930-1950, which had immense needs to borrow funds. Lenders demanded cross-guarantees from the borrowing corporations in order to have a secured access to assets of any of the guarantors in case of default of the borrower. Therefore, borrowing corporations voluntarily disclosed consolidated financial statements in order to attract credit investors. Another lender perspective is provided by Pellens and Linnhoff (1993, p. 114) that have analysed the financial position and performance of German companies before and after the implementation of compulsory disclosure of group financial statements. They found that group accounts revealed higher indebtedness and lower profitability suggesting that particularly non-bank lenders gained from the implementation of group accounts.

as if they would be one single company, ignoring any legal lines of separation between single companies that constitute the consolidated group.

In the accounting theory three competing concepts of presenting consolidated financial statements have evolved: the economic unit concept, the parent company concept and the proportionate consolidation concept. These alternative consolidation approaches stem from two theoretical foundations for consolidated financial reporting: the parent company theory and the entity theory of reporting.

2.4.1 THE PARENT COMPANY THEORY

The parent company theory is based on the assumption that consolidated financial statements are an extension of individual financial statements of the parent company and should be prepared from the viewpoint of parent company shareholders. Thus, the consolidated information is considered complementary to the information disclosed in parent company statements. The focus of this theory is that the interest of the parent company in its subsidiaries is strictly financial in nature (Abad et al, 2000, p. 157). Under the parent company shareholders, and it is not expected that minority shareholders can benefit significantly from the statements (Beams, 1982, p. 478).

From the viewpoint of parent company shareholders minority interest is perceived as a liability and the minority income is seen as an expense. But as Beams (1982, p. 478) points out there is some inconsistency within this view since shareholder interests, whether majority or minority, are not liabilities under any of the accepted concepts of a liability. The parent company does not owe anything to the minority shareholders. Similarly income to minority shareholders does not meet requirements for expense recognition. On the other hand, minority interest is not a part of consolidated shareholders' equity under parent company theory because the minority investors in the subsidiary do not have an ownership interest in the subsidiary's parent (Pacter, 1992). Furthermore, it is argued that minority shareholders are not owners in the sense that they cannot outvote the majority and therefore cannot influence company management (Beckman, 1995, p. 3). Therefore it is somehow unclear how to articulate the classification of minority interest from the theoretical point of view. In practice as Pacter (1992) points out minority interest has to be presented somewhere.⁵ Practically the alternatives include showing the minority interest as a liability and including it in a subtotal of total liabilities or showing minority interest as a separate classification between liabilities and stockholders' equity. The latter alternative, which is sometimes called the hybrid or the compromise approach, tends to be the overwhelming practice today. However, probably the strongest justification for including minority interest within the liabilities or between the liabilities and capital is the fact that the creditors of the parent company have only a

⁵ This means that minority interest has to be presented somewhere in case that it is intended to be presented. As seen later on in the text under the proportionate consolidation concept minority interest is not presented at all.

secondary claim against the assets of the subsidiary, which is roughly on the same level as the claim of the minority interest (Hendriksen, 1977, p. 509).

Two consolidation concepts have evolved from the parent company theory: the parent company concept and the proportionate consolidation concept, which is sometimes referred to as the extreme version (Beckman, 1995, p. 3) or as the pure version (Pacter, 1992) of the parent company concept.

2.4.1.1 The Parent Company Concept

Under the parent company concept, the consolidated financial statements reflect those shareholders' interests in the parent company itself as well as their undivided interests in the net assets of the parent's subsidiaries. The consolidated balance sheet and the consolidated income statement are essentially modifications of the parent company's balance sheet and income statement with single-line presentations of parent's investment in subsidiaries substituted by assets and liabilities of subsidiaries, and a single-line presentation of the parent's income from investment in the subsidiaries substituted by revenues, expenses, gains and losses of subsidiaries. These substitutions are intended to make the parent's financial statements more informative about the parent's total ownership holdings and not to broaden the reporting entity, which remains to be the parent company itself (Pacter, 1992). Consistently, shareholders' equity of the parent company equals the shareholders' equity of the consolidated balance sheet but not as part of consolidated shareholders' equity.

Subsidiary assets are initially consolidated at their book values, plus the parent company's share of any excess of their fair values over book values, plus any purchased goodwill. Thus the parent's share of subsidiary net assets is consolidated at the price paid by the parent for its interest while the minority interest's share is consolidated at book value. Consolidated net income, which represents earnings attributable to the capital provided by investors in the parent company, equals the net income of the consolidated entity less minority interest income, which is the same as the net income reported in the parent individual income statement, if the equity method was used.

2.4.1.2 The Proportionate Consolidation Concept

Under the proportionate consolidation concept, only the parent company's proportionate share of a subsidiary's assets, liabilities, revenues, and expenses is included in consolidated financial statements, in contrast to the parent company concept, which includes 100 % of the individual items and nets out the minority interest on a single line in the balance sheet and on a single line in the income statement. The minority interest is excluded entirely because the shareholders of the parent company are assumed to have no beneficial interest in the portion of the subsidiary's assets from which minority shareholders will derive their direct benefits

(Pacter, 1992). Thus, measurement, classification and presentation of minority interest's share of the subsidiary's net assets and minority interest's share of the subsidiary's net income is no issue under the proportionate consolidation concept.

Under both consolidation concepts stemming from the parent company theory, only the parent company shareholders' ownership interest should be presented under the shareholders' equity section of the consolidated balance sheet and only the profit or loss attributable to the parent company shareholders should be presented as the bottom line in the income statement. No matter how the minority interest is classified and whether it is classified anywhere at all, under the parent company theory, as Abad et al. (2000, p. 160) point out it is perceived that only the net assets owned by the parent will contribute to future earnings and dividends and consequently to the value of the parent.

2.4.2 THE ENTITY THEORY

Under the entity theory, which was developed by Moonitz (1951), the consolidated group of companies is considered to be a single economic unit for financial reporting purposes. Control of a group of various legal entities by a single management team is emphasised. It is assumed that the interest of the parent company is not purely financial in nature but that the parent can derive benefits from the totality of assets of the consolidated group, which the parent controls. Thus, the entirety of assets and liabilities under parent company's control and not only the parent's portion is taken into account and consolidated statements reflect the viewpoint of the total business entity (Beams, 1982, p. 479). In contrast to the parent company theory, where consolidated statements are perceived to be of secondary importance to the parent company accounting information, they are under the entity theory considered to be of primary importance and most suitable format for providing information about the financial situation of the parent.

The economic unit may have more than one class of voting ownership interest, namely the parent company shareholders and minority shareholders holding voting rights in subsidiaries. Since consolidated statements are prepared from the standpoint of the total consolidated entity as one operating unit, the minority interest is simply seen as an alternative source of equity. Therefore, its reporting should be in line with the presentation of the equity of majority shareholders. Consistently, minority interest income is a part of total net income of the consolidated entity. Under the extreme version of the entity theory, only the total figures would be disclosed and minority interest's part would not be disclosed at all, while the alternative approach would be to show the same total figures as well as their break up between the parent and minority shareholders.⁶

⁶ Subsequently, I refer to this approach as the softer or the alternative concept of the entity theory.

2.4.2.1 The Economic Unit Concept

Under the economic unit concept, which is the consolidation approach stemming from the entity theory, consolidated financial statements are prepared in such a way that they provide information about the group as a whole – a parent and its subsidiaries operating as a single unit. The consolidated income statement includes a disclosure of income to all equity holders, which might then be appropriately assigned to parent and minority shareholders. Subsidiary assets and liabilities are consolidated at their fair values as of the date the parent obtains control over the subsidiary.

However, while under the entity theory it is commonly accepted that 100 % of subsidiary's net assets should be valued consistently, there tend to be different interpretations of how to treat goodwill. In accounting literature there are two interpretations of how to measure goodwill under the economic unit concept. The purchased goodwill interpretation recognises only the amount of goodwill purchased by the parent company while there is no recognition of any goodwill pertaining to the minority interest. The full goodwill interpretation also called the full entity approach recognises 100 % of the subsidiary's goodwill. The later interpretation is consistent with the idea resting behind the economic unit approach – the totality of group's net assets as its true asset base (Abad et al., 2000, p. 160). While under the full entity approach the majority and minority interests in a subsidiary are accounted for more consistent, this consistent treatment is obtained through a questionable practice of valuing the whole subsidiary on the basis of the price paid by the parent for its majority interest (Beams, 1982, p. 481).⁷ As Abad et al. (2000, p. 160) point out, under current accounting practice in most of the large economies where consolidated statements have to be presented the full goodwill approach is not used. However, both interpretations would end up with the same goodwill figures if the parent had purchased 100 % of the subsidiary.

As under the entity theory it is assumed that the totality of net assets and liabilities of the group will contribute to the generation of a particular level of earnings for the parent company, this should be considered when making valuations about the future dividend streams of the parent company.

⁷ In financial literature questions of control premium, after-takeover-marketability of subsidiary shares, and delisting of subsidiary shares arise. These are addressed further on.

2.4.3 SUMMARY OF THE CONSOLIDATION CONCEPTS

Figure 2: Comparison of the Three Consolidation Concepts

Entity Theory	Parent Company Theory			
Economic Unit Concept	Parent Company Concept	Proportionate Consolidation		
Assets (1) Identifiable Assets 100% of fair market value at the date of acquisition by the consolidated entity	Assets (1) Identifiable Assets Subsidiary's book value plus parent's share of adjustment to fair market value	Assets (1) Identifiable Assets Parent's proportional share of fair market value of subsidiary's assets		
 (2) Goodwill Two alternatives: (a) purchased goodwill alternative; or, (b) full goodwill alternative 	(2) Goodwill Purchased goodwill only: parent's cost minus acquired percent of fair market value of net assets	(2) Goodwill Purchased goodwill only: parent's cost minus acquired percent of fair market value of net assets		
<i>Liabilities</i> 100% of fair market value at the date of acquisition by the consolidated entity	<i>Liabilities</i> Subsidiary's book value plus parent's share of adjustment to fair market value	<i>Liabilities</i> Parent's proportional share of fair market value of subsidiary's liabilities		
<i>Minority Interest in Net Assets</i> is included in the equity section of the balance sheet.	Minority Interest in Net Assets is presented between liabilities and stockholders' equity	<i>Minority Interest in Net Assets</i> is excluded entirely from the balance sheet.		
<i>Stockholders' Equity</i> includes parent's equity and minority interest in subsidiaries.	<i>Stockholders' Equity</i> Only parent's shareholders' interests are presented here.	<i>Stockholders' Equity</i> Only parent's shareholders' interests are presented here.		

Source: Beckman, 1995, p. 4. Used by kind permission of the author.

3 ACCOUNTING REGULATION & CONSOLIDATION ISSUES

As already mentioned, changes in corporate organisation and trends of companies operating through various organizational structures have resulted in the need for presenting group financial statements. Accounting regulators became aware of this and consequently began to occupy themselves with consolidation issues.

Until recently, compulsory reporting of consolidated accounting information has been an exception rather than the rule. In the European Union consolidated reporting was very uncommon until the enactment of the Seventh Company Law Directive⁸ while in many emerging economies consolidated financial statements are either recent requirements, such as

⁸ See section 4.2. on page 15.

in Slovenia, or non-existent. In contrast, in the United States and in the United Kingdom consolidated financial reporting has a longer tradition (Abad et al., 2000, p. 157).

Accounting regulators' preference for one or another consolidation concept can be assessed (i) by examining an individual accounting regulator's definition of the ownership control and, thus, the definition of the reporting group, and (ii) by examining the corresponding accounting practice regarding the categorisation of minority interest and goodwill.

In subsequent subsections, the definition of the group and the prescribed accounting practice are briefly examined for the United States and the European Union along with the consolidation rules of the International Accounting Standards. The U.K. accounting regulation is being dealt with more in depth as it is at the centre of the research. Slovene accounting standards and their approach towards consolidation are presented later on in chapter 6 of this master thesis.

3.1 THE U.S. APPROACH

In the United States reporting of consolidated annual accounts has been compulsory since 1959. However, in the 1990s accelerated activity of U.S. accounting authorities has taken place regarding consolidation and its various approaches with the objective to come out with a consolidation concept that would best serve its primary users in terms of helpful information about the company.

3.1.1 GROUP DEFINITION

At the beginning of the 1990s, the Financial Accounting Standards Board⁹ started a broad multiphase project on consolidations and related matters by issuing a Discussion Memorandum where it is argued that the parent company's management team controls all subsidiary activities. The economic unit concept best represents the totality of the group assets and liabilities under control of the parent company's management (Discussion Memorandum, 1991). In a reply, the Financial Accounting Standards Committee of the American Accounting Association¹⁰ supports FASB's preference for the entity approach (AAA, 1994, p. 120)¹¹ and agrees with the minority interest to be shown as part of the equity in the consolidated balance sheet (AAA, 1996, p. 182).¹² In 1995, FASB proposed a Statement where control over subsidiaries is defined as the parent company having decision making powers relating to another entity's individual assets (Exposure Draft, 1995). While this

⁹ Further referred to as FASB.

¹⁰ Further referred to as AAA.

¹¹ American Accounting Association's Financial Accounting Standards Committee Response to the FASB Discussion Memorandum 'Consolidation Policy and Procedures' (1994).

¹² American Accounting Association's Financial Accounting Standards Committee Response to the FASB Exposure Draft 'Proposed Statement of Financial Accounting Standards-Consolidation Policy and Procedures' (1996).

definition of control is apparently still fairly influenced by the parent company theory, the FASB's Exposure Draft of 1999 revises the definition into decision-making abilities not shared with others (Exposure Draft (Revised), 1999). Thus, the U.S. accounting regulator's control and group definition has moved closer to the entity theory.

3.1.2 ACCOUNTING PRACTICE

In the U.S. any of the three consolidation concepts may be followed in preparing consolidated financial statements. However in practice, in contrast to the group definition, accounting procedures in the U.S. are still primarily reflecting the parent company approach (Beckman 1995, p. 1). Nevertheless, the fact that U.S. firms producing consolidated financial statements do not need to disclose parent accounts, which clearly states the U.S. accounting regulator's preference for the entity theory.

3.2 THE E.U. APPROACH – THE SEVENTH DIRECTIVE

In member states of the European Union¹³ consolidated statements have been until recently a quite rare phenomenon. Before the enactment of the Seventh Council Directive of 13 June 1983 Based on the Article 54 (3) (g) of the Treaty on Consolidated Accounts (1983)¹⁴ consolidated accounts have been widely used only in the United Kingdom, the Republic of Ireland and the Netherlands. Accounting practices in these countries have been considerably influenced by the U.S. accounting practice. In some other member states consolidated financial reporting was obligatory only for public companies¹⁵, however, only subsidiaries having their domicile in Germany were accounted for in consolidated accounts. In Belgium consolidated figures in order to be quoted at the stock exchange.¹⁷ In other member states, consolidated reporting was not compulsory while in practice it occurred rarely, which is especially true for Spain, Greece and Portugal (Nobes, 1993, p. 33).

After almost a decade of discussion and negotiations the Seventh Directive was published on 18th July 1983 with the aim of harmonizing the legislation with regard to consolidated financial reporting. Requirements of the Seventh Directive were implemented by some of the

¹³ Further referred to as the E.U.

¹⁴ Further referred to as the Seventh Council Directive or the Seventh Directive.

¹⁵ See Nobes (1993, p. 33).

¹⁶ See Theunisse (1993, p. 42).

¹⁷ Since 1971 companies that sought for permission to become listed at the stock exchange or for permission to issue bonds or new shares were required by the Commission des Operations de Bourse to issue a prospectus that would also include consolidated financial statements for the past three years. However, this was a specific one-time requirement and the rules for preparing the consolidated accounts were deficient. The presented statements were thus incomparable (Pham, 1993, p. 80).

member states very soon while the majority failed to meet the implementation deadline set by the Seventh Directive¹⁸ and carried out the implementation in the beginning of the 1990s.

3.2.1 GROUP DEFINITION AND CONSOLIDATION RULES

With regard to the group to be consolidated the Seventh Directive's definitions of a subsidiary are of considerable importance. Thus, the parent company has to include another company in the consolidated accounts as a subsidiary if the parent company (Seventh Council Directive, 1983):

- (i) owns the majority of voting rights in the other company;
- (ii) has an ownership interest in the other company and has the right to appoint or remove a voting majority in the administrative, management, or supervisory board of the other company;
- (iii) has an ownership interest in the other company and has the right to exercise a dominant influence either by the Memorandum and Articles or by a contract of control;
- (iv) has an ownership interest in the other company and has on the basis of an agreement with other owners an exclusive right to control over the majority of voting rights in the other company.

In addition to the obligatory definitions outlined above, the Seventh Directive enables the member states to define a company as a subsidiary in cases (ibid.):

- (v) when the parent company owning a participating interest¹⁹ in the other company has either a controlling influence in the other company or are the parent and the other company managed on a unified basis by the parent company;
- (vi) when the parent company manages to appoint the majority of votes in the management board only by its own voting rights in the other company without controlling the majority of voting shares in the other company; ²⁰
- (vii) of horizontal groups.²¹

The directive requires that all subsidiaries disregarding their domicile have to be consolidated. Besides, a subsidiary of a subsidiary has to be treated as a subsidiary of the parent company. A subsidiary does not have to be included into consolidated accounts if such inclusion would be of negligible importance for the true and fair view.²² However, a subsidiary is not allowed

¹⁸ Year 1988.

¹⁹ A participating interest means that the parent company has an ownership share of a long term nature in the other company through which influence is executed in order to contribute to the parents performance. This influence can be performed either in the form of leadership or in the form of giving instructions. Here the directive allows for wide interpretations (Davies, Paterson and Wilson, 1999, p. 272).

²⁰ This definition covers the situation of control in circumstances of dispersed ownership.

²¹ Horizontal groups arise either when two companies are being jointly managed on the basis of a contract or the Memorandum and Articles, or the same group of persons represents the majority of votes in both management boards.

²² This is the so-called *de minimis* principle.

to be included into consolidated accounts if this would represent a divergence from the true and fair view.

A subsidiary's assets and liabilities have to be fully included into the consolidated balance sheet while its full profit or loss of the year should be included into the consolidated profit and loss account.²³ Minority interest's fraction of group equity has to be disclosed separately from the majority interest's part of equity. As such it is neither ascribed to equity nor to debt and liabilities, thus representing a so-called hybrid approach to consolidated financial reporting. Minority interest earnings also have to be shown separately from the consolidated group earnings.

Joint ventures have to be consolidated by the proportional method while for the inclusion of associated undertakings into consolidated accounts the equity method should be used.

3.2.2 ACCOUNTING PRACTICE

The Seventh Directive represents a step from presenting individual financial statements, which used to be an overwhelming practice in the EU states, towards a quasi-entity approach of presenting consolidated financial statements. Namely, subsidiary definitions indicate a concept of control that is not entirely financial in nature. The step towards the entity approach could be even stronger and more and more apparent if the directive was not allowing for numerous exceptions and possibilities that are not of obligatory nature for member states. Besides, the directive is worded in such a way that various national interpretations are placed upon it in the national regulations through which it is enacted. Thus, although the directive requires from the EU member states to enact similar consolidation principles and procedures, its practical implementation in the member states is very flexible (Abad et al., 2000, p. 162).

3.3 INTERNATIONAL ACCOUNTING STANDARDS

International Accounting Standards deal with consolidated financial reporting in the International Accounting Standard No. 22 – Business Combinations (1998), and in the International Accounting Standards No. 27 – Consolidated Financial Statements and Accounting for Investments in Subsidiaries (1989).²⁴ According to IAS 27 presenting consolidated accounts is compulsory if one company exercises control over another company. A company is presumed to exercise control over another company if the parent company along with its subsidiaries (i) has the majority of voting power in another company, (ii) owns less than 50% of voting rights of another company but controls more than 50% of voting power in accord with other shareholders, (iii) has the power to exercise control over operating and financial policies of another company on the basis of legal documents, (iv) has the power to appoint or displace the majority of another company's management board, or (v) controls

²³ Of course, intragroup transactions have to be eliminated.

²⁴ These two standards are further referred to as IAS 22 and IAS 27.

the majority of votes in the management board of another company. In addition, exercising of such control has to be of permanent and not one time nature in order for consolidated reporting to be obligatory (Epstein and Ali Mirza, 1998, p. 324).

For consolidating associated undertakings the equity method should be used. International Accounting Standard No. 28 – Accounting in Investments for Associates (1989) defines an associated undertaking as an investment that does not enable the investor to control the other company, but enables him to exercise considerable influence over its policies. Generally, considerable influence is assumed if the investor owns at least 20% but less than 50% of another company's outstanding shares.²⁵ However, in the case an investor owns such an ownership share but considerable influence cannot be assessed, the investment is allowed to be consolidated at cost.

According to IAS 27 minority interest's share of equity should be shown in the consolidated balance sheet apart from the rest of equity as well as apart from the debt. Thus, International Accounting Standards propose a hybrid approach to minority interest disclosure.

IAS 22 regulates how goodwill should be disclosed. Goodwill arises when the parent company pays a takeover price that is higher than the fair value of the target company. For allocating goodwill among majority and minority interest ownership, IAS 22 proposes two treatments, namely the benchmark treatment and the alternative treatment of goodwill.

According to the benchmark treatment, in consolidated statements the acquirer's proportion of net assets is shown at its fair value at time of acquisition. In contrast, the disclosed minority interest share value equals the minority interest's share times the pre-acquisition book value of the acquired target's net assets. Furthermore, goodwill is reported on the assets side of the balance sheet in the amount of the price paid by the acquirer less fair value of the acquirer's proportion of the target's net assets. This approach is based on the cost principle that treats a takeover as an asset acquisition. Advocates of this approach claim that minority shareholders did not participate in the takeover and therefore are not entitled to a part of goodwill (Epstein and Ali Mirza, 1998, p. 353). The benchmark treatment is thus more closely related to the parent company theory of consolidated financial reporting.

Under the alternative treatment of goodwill, the fair value of the target's equity is ascribed proportionally to both, the majority and minority interest. Goodwill is shown in the same way as under the benchmark treatment. Under this approach, the price paid for acquiring the target's net assets represents the basis for valuing the whole company. This is supported by the idea that the price paid by the acquirer to obtain control in the target company represents the most recent credible information on the target company's equity value. The alternative treatment is clearly in support of the entity approach to consolidation.

3.4 THE U.K. APPROACH

The fundamental legal framework providing regulatory rules for presenting group financial statements is the Companies Act 1985 and was amended by the Companies Act 1989. Consolidation issues are dealt with more specifically in individual Financial Reporting Standards²⁶, which are issued by the U.K. regulatory body, namely the Accounting Standards Board.²⁷

Regarding the purpose of consolidated financial statements, FRS 2 – Accounting for Subsidiary Undertakings (1992) states that they are meant to present the economic unit that carries out its activities under control of the parent company. Thus, in describing the aim of consolidation the U.K. accounting standards tend to be inclined towards the entity approach to consolidation.

3.4.1 GROUP FINANCIAL STATEMENTS IN THE U.K.

Group financial statements in the U.K. comprise three constituent parts:

- (i) Consolidated financial statements,
- (ii) Balance sheet of the parent company, and
- (iii) Notes to consolidated financial statements.

3.4.2 Consolidated Financial Statements

The Companies Act 1985 requires from parent companies to prepare consolidated financial statements that ought to include all subsidiary undertakings disregarding their legal status. In line with the Seventh Directive the Companies Act allows for some subsidiaries to be excepted from consolidation while it provides that in some cases subsidiaries must not be included into consolidated financial statements.

The Companies Act 1985 requires the preparation of the consolidated balance sheet and the consolidated profit and loss statement whereas FRS 1 – Cash Flow Statements (1996) requires presentation of the consolidated cash flow statement. There are three differing types of long term investments, namely subsidiary undertakings, associated undertakings and investments, which have to be accounted for differently in the consolidated financial statements.

²⁵ Other factors that would point out to a considerable influence include presence of the investor in the management board of another company, material transactions between the investor and the company, interchange of managerial personnel and provision of essential technical information.

²⁶ Further referred to as FRS.

²⁷ Further referred to as ASB.

3.4.2.1 Subsidiary Undertakings

The Seventh Directive's definitions of a subsidiary undertaking have been introduced into the U.K. legal framework. Thus a subsidiary is a company in which the parent company:

- (i) owns the majority of voting rights,
- (ii) as a shareholder is entitled to appoint and displace the majority of the subsidiary's board members,
- (iii) has the right to carry out a controlling influence through the memorandum and articles or a control contract,
- (iv) as a shareholder controls the majority of voting rights in accord with other shareholders of the subsidiary,
- (v) has a participating interest and either through it exercises a controlling influence or manages the subsidiary on a unified basis.

For subsidiaries line by line consolidation is demanded. Thus every item in the subsidiary's accounts has to be included in the corresponding item of the consolidated accounts. Profits and losses that arise from intra-group transactions as well as net intra-group positions have to be eliminated already up front.²⁸

When a subsidiary is not wholly owned by the parent company a minority interest is evident. In the consolidated profit and loss account, profit or loss from ordinary activities attributed to minority interest as well as the extraordinary profit or loss ascribed to minority interest have to be presented separately from the corresponding majority interest numbers. Profit or loss attributed to minority interest has to be deducted from the earnings number of the consolidated group in order to identify the profit or loss ascribed to shareholders of the parent company. As such, minority interest is thus treated as a liability that is separated from the parent shareholders' equity. Similarly, in the consolidated balance sheet the minority interest's share of capital and reserves is shown separately as a deduction from the consolidated group capital and reserves in order to identify the rules on the disclosure of minority interest are more in line with the traditional parent company theory of consolidation.

A different conclusion could be drawn from the accounting valuation of subsidiary's assets and liabilities in consolidated accounts. The Companies Act requires all subsidiary undertaking's identifiable assets and liabilities to be included into consolidated accounts at fair value. Thus, when an entity becomes a subsidiary undertaking the assets and liabilities attributable to its minority interest should be included on the same basis as those attributable to the interest held by the parent and other subsidiary undertakings. This is clearly in line with the entity theory. However, no goodwill should be attributed to the minority interest. Namely in the U.K., goodwill is recognised as the difference between the purchase price and the

²⁸ This holds for all members of the consolidated group, namely the parent company, subsidiaries, associates and joint ventures.

aggregate of the fair value of the purchased entity's identifiable assets and liabilities only up to the acquirer's proportion.²⁹

3.4.2.2 Associated Undertakings

Associated undertakings are defined as undertakings in which the parent company has an ownership interest and through this ownership interest has the ability to influence this company's operating and financial policy substantially. An ownership share of at least 20% but less than 50% is taken as an indication of substantial influence, unless proven otherwise.

Associated undertakings have to be included into consolidated accounts by using the equity method. In the consolidated profit and loss statement the proportionate part of the associate's earnings belonging to the parent company has to be reported. In the consolidated balance sheet the proportionate part of the associate's net assets corresponding to the parent's ownership share including an eventual goodwill outstanding is to be reported.

3.4.2.3 Other Investments

The third group of a parent company's long-term investments is represented by investments that carry less than 20% of voting rights in another company and at the same time a substantial or even controlling influence cannot be proven. This type of investments is shown in the consolidated balance sheet at cost while in the consolidated profit and loss statement only eventual dividends stemming from these investments occur.

3.4.3 BALANCE SHEET OF THE PARENT COMPANY

In addition to consolidated financial statements the parent company is obliged to present its own balance sheet while other individual financial statements are not compulsory. Nevertheless, if the parent company does not report its individual profit and loss account it has to disclose its individual profit or loss for the reporting year in the notes to the consolidated financial statements, according to the Companies Act 1985. Apparently, due to complex structures through which individual groups of companies nowadays operate, the applicability of the reported parent company figures is poor (Taylor, 1995, p. 11). However, the presented figures about the parent company provide some additional information, which cannot be found in consolidated financial statements such as investments into companies

²⁹ In the UK there have been broad discussions regarding the treatment of goodwill in consolidated financial statements. Before the ASB issued the FRS 10 – Goodwill and Intangible Assets (1997), Statement of Standard Accounting Practice 22 – Accounting for Goodwill (1989) or SSAP 22 allowed for two alternative methods for treating goodwill. The preferred method of treatment was an immediate write off to reserves while the alternative method treated goodwill as an asset that needed to be amortised (Hussey and Bishop, 1993, p. 160). The FRS 10 requires, however, that goodwill is to be included amongst the assets of the reporting entity. Goodwill has to be amortised systematically through the profit and loss account unless it is regarded as having an infinite life. Nevertheless, the FRS 10 is effective for accounting periods ending on or after 23 December 1998. However, data collected for this study are mostly from accounting periods before this date. Therefore, the SSAP 22 is applicable.

within the group valued at cost³⁰, information about debt relationships between the parent company and other entities within the consolidated group of companies, and information about realized and unrealized reserves of the parent.

3.4.4 Other Information on the Group Structure

This includes certain information about subsidiary undertakings which have not been included into consolidated financial statements, certain information about subsidiaries and associates that are included into consolidated financial statements and some other information.

4 THE NATURE OF MINORITY INTEREST

The basic difference between the three consolidation concepts rests on the treatment of minority interest and goodwill as a consequence of different understanding of the nature of minority interest and its impact on the firm value. In order to provide an understanding of the nature of the ownership interests in consolidated entities, namely the majority and the minority interest, literature on financial economics of corporate transactions is being examined. Minority interests in consolidated entities arise primarily from two types of corporate restructuring transactions. First, a minority interest may be a residual effect after one company takes over another through a tender offer. This could result either from a tender offer attempt to obtain 100% of the outstanding target shares towards which some lesser percentage of shares are tendered or from an initial attempt to obtain less than 100% of the target firm's outstanding shares. The second type of transaction where minority interest arises is called an equity carve-out, which means that the parent company sells a portion of its interest in a subsidiary. In addition to these transactions, there are some other aspects of the nature of minority interest that are examined in the third subsection. The chapter on the nature of the minority interest is concluded by implications the analyzed theoretical considerations have for the most appropriate consolidation approach choice.

4.1 TAKEOVERS

Takeovers or acquisitions are attempts to gain control over the target company in order to implement value-adding strategies. There is plenty of empirical evidence that the share price of the target company as well as the share price of the acquiring company on average outperform the market in a wider time window of the takeover (Hathaway, 1990, p. 28).

Thus, the basic objective of making acquisitions should be identical to any other investment associated with a company's overall strategy, which is to add value. The shareholder value added perspective is an economically sound and consistent criteria to evaluate investments that can be earmarked either for internal or external growth. The latter includes mergers and

³⁰ All types of investments, namely into subsidiaries, associates and other investments are valued at cost in the

acquisitions that, however, in contrast to investments in plant and equipment, typically cannot be purchased in relatively active markets with guoted prices. Although publicly traded companies have quoted prices, the required price the acquiring company has to pay to obtain a controlling interest in the target company is usually materially higher than the trading price before the takeover attempt took place (Rappaport, 1998, pp. 33-34). Besides, takeovers are very often but necessary investments motivated by a wide range of business considerations within a wider long-term corporate strategy.³¹ In such cases the overall strategy would have to be the subject matter of evaluation whereas the takeover would represent an option to participate in future market or industry opportunities.³²

For all these and many other reasons, assessing the intrinsic value of a target company is a difficult task of considerable complexity, especially if the takeover would represent a purchase of an option in a very long-term strategy with a very unpredictable and risky outcome. The actual price is therefore a result of a process of negotiations between buyers and sellers of the target company influenced by their expectations, speculations and subjective strategic considerations.

Successful takeover bids resulting either from any-or-all tender offers or partial acquisitions by tender offers can develop some minority interest. The following sections analyse the nature of minority interest stemming from takeovers.

TENDERING LESS THAN 100% FOR ANY-OR-ALL TENDER OFFERS 4.1.1

The following equations become applicable when analysing the behaviour of potential buyers and sellers within a takeover process:³³

Value created by acquisition	=	Value of combined company	-	Stand-alone value of buyer	Stand-alone value of seller	(3.1)
Maximum acceptable purchase price	=	Stand-alone value of seller	+	Value of acquisition synergies		(3.2)
Value created for buyer	=	Maximum acceptable purchase price	-	Price paid for seller		(3.3)

parent company's individual balance sheet. ³¹ These motivations include market entry, increase in market share, increase in product and market portfolio, reduction of competition, leveraging of core competencies, access to supply or distribution channels, product development, technology acquisition, economies of scale and scope, resource utilization, reputation enhancement and others (Stonehouse et al., 2000, pp. 341-342).

³² In such cases an acquisition would be evaluated as part of a strategy as it may not meet traditional discounted cash flow hurdle rates by itself (Rappaport, 1998, p. 35).

³³ Taken from Rappaport (1998, p. 34).

In any-or-all tender offers³⁴, the economic subjects within a takeover process have their own estimates or perceptions of the potential value of acquisition synergies. On one hand, a rational buyer would go for a part of these acquisition synergies by offering a purchase price that would be somewhere between the stand-alone value of the target and the maximum acceptable purchase price. On the other hand, individual shareholders of the target company make their decision whether to sell their shares or not on the basis of the offered purchase price, their estimation of the value created by acquisition, and their expectations about how other shareholders of the target company might react. In case the buyer succeeds in taking over a controlling share of the target while at the same time some target company shareholders decide not to sell their shares, a minority interest is created.³⁵

4.1.1.1 Theoretical Explanations of the Nature of Minority Interest

Grossman and Hart (1980) were the first to offer a theoretical explanation of motives for becoming a minority interest shareholder. They explain this phenomenon by opportunistic behaviour of target company shareholders who may find it to be optimal for them not to tender and to free ride on the gains resulting from the acquisition and new management.³⁶ The main rationale of their explanation is that target shareholders consider that the price offered for their shares is below the value potential of the target being managed by the acquirer. Otherwise the acquirer would be presumed to have no motive to make the tender offer, as he would not participate in the value created by the acquisition. In case all target shareholders follow the same rationale and act independently the takeover attempt cannot be successful as the atomistic target shareholder would not be willing to accept the offer unless the bid would be made at or above the expected value of minority shares. Such a tender offer would be sensible only if there was a mechanism whereby acquirers can raid the target firm to expropriate some wealth from the minority interest (ibid., p. 61).³⁷ Free riding of target shareholders of the minority interest offer and hence desirable transfers of

³⁴ Also referred to as unconditional tender offers.

³⁵ Empirical evidence suggests that on average in takeovers following any-or-all tender offers the appearance of minority interest is to be expected. Comment and Jarell (1987, p. 302) analyzed 241 successful any-or-all tender offers between 1981-1984. Their sample consisted of companies that were listed on the New York Stock Exchange and the American Stock Exchange as well as companies whose shares are most frequently traded on the over-the-counter market. They found that on average 12% of the target company shares remained untendered by the acquiring company.
³⁶ Their model is based on the following assumptions, which may however not hold empirically: (i) Target

³⁶ Their model is based on the following assumptions, which may however not hold empirically: (i) Target shareholders as well as the acquiring company know which transactions will be successful with certainty; (ii) all target shareholders are atomistic shareholders who do not consider themselves to be pivotal for the outcome of the tender offer; (iii) both, the acquirer and the target shareholders have the same information about the standalone price of the target under current management and about the potential incremental benefit of the acquirer's management of the target. These limiting assumptions may however not hold empirically.

³⁷ There are various mechanisms by which the controlling party would benefit while the other shareholders would not: e.g. excessive retention of free cash flows; following non-value-maximising investment policies such as acquisitions motivated by empire building ambitions; distortions of the capital allocation among the firm's divisions in order to subsidize the less efficient ones; expropriation of minority interest shareholders through transactions at preferential terms (Burkart, Gromb and Panunzi, 1998, p. 177). Moreover, some private benefits can be pecuniary, e.g. excessive compensation or expenditures on the acquirer's pet projects, whereas other are nonpecuniary, e.g. synergy in production for the acquirer or prestige (Barclay and Holderness, 1992, p. 269).

corporate control. Allowing for minority shares dilution would represent a means to overcome this problem.

Presuming rationality of economic subjects, the first assumption of the Grossman-Hart model would eventually result in all tender offers being successful. This, however, has been rejected by empirical evidence (e.g. Bradley, Desai, and Kim, 1983, p. 183). By relaxing this assumption and thus allowing for some probability that the takeover transaction could fail it can be shown that tender offers with the offered purchase price being between the stand-alone price of the seller and the price potential under the acquirer's management can turn successful as well (Bebchuk, 1989, p. 173). Namely, if the shareholder expects the tender offer to fail, then the optimal choice would be to accept the offer. In case the shareholder expects the transaction to be successful, then not tendering would be the rational decision. Apparently, for an individual shareholder there is no dominant strategy in general. Bebchuk (1989, p. 175) shows with his model that rational individual shareholders will follow mixed strategies resulting in both, successful and failing offers being possible. Bebchuk also demonstrates that for the acquirers the expected pay-off of successful any-or-all tender offers is always positive and thus they are motivated to make such bids. Minority interest, however, develops because of the target shareholders' attempts to free ride on an acquirer's value increasing efforts.

Many other authors³⁸ also developed models by which they proved that unconditional tender offers can be successful when the bid is made below the expected minority interest value while Kale and Noe (1997, p. 737) demonstrated this to hold experimentally.

Burkart, Gromb and Panunzi (1998) upgrade the Grossman-Hart model by introducing the issue of the acquirer's post-takeover moral hazard into minority interest analysis. They suggest that the expected post-takeover value of minority interest, which is crucial for the success of a tender offer, depends on the purchase price offered. Their model assumes that, after the takeover, the new controlling party manages the target company in order to extract private benefits, which can frustrate minority shareholders of part of the potential improvement in the share value. In other words, the shareholders' free-rider behaviour results in the maximization of post-takeover moral hazard, which is manifested in the bidder aiming to maximise his private gains. However, the bidder's opportunity costs increase with his final holdings. On the margin, the extraction of private benefits yields less utility gains than it costs (ibid., p. 177).³⁹ The higher the share of the target that the acquirer holds the larger part of the inefficiency he internalizes, and hence moral hazard is less severe. Therefore, the expected value of the minority interest share along with the social surplus increases in the acquirer's final holding. As the supply of target shares curve is upward sloping, higher takeover premia

³⁸ See e.g. Schleifer and Vishny (1986), Fishman (1988), Harris and Raviv (1988), Hirschleifer and Titman (1990), and Scharfstein (1988).

³⁹ Thus, the bidder tries to gain control over the target company by offering a purchase price that would result in getting a controlling share as small as possible.

attract a higher fraction of target shares to be tendered resulting in the increase of social surplus and post-takeover share value (ibid., p.175).⁴⁰

4.1.1.2 Theoretical Considerations on Sources of Gains in Corporate Takeovers

All theoretical models that have been considered in this study so far suggest that minority interest develops as a result of free-riding behaviour of target shareholders who aim to participate in the positive effects stemming from the change in the corporate governance of the target company. Potential gains from takeovers that trigger free-rider behaviour of target shareholders can be classified into three groups. The first two groups that are broadly stated in the relevant literature (Stein, 1988, p. 61; Beckman, 1995, p. 8; Bešter, 1995, p. 40) include (i) gains resulting from various synergies as a consequence of combined operating of two companies following the takeover⁴¹, and (ii) gains stemming from replacement or disciplining inefficient management of the target company. The third group of post-takeover benefits would include (iii) gains from the effect of the information asymmetry problem identified by Myers and Majluf (1984). According to the information asymmetry theory a takeover may enable the new combined entity to invest in projects with positive net present value that the target company had to abandon due to insufficient resources to finance such projects (ibid., p. 188). Thus, if the managers of the target company dispose of information on profitable projects but lack financial resources to transfer such projects into incumbent shareholders' benefits, a takeover by a company that has sufficient resources would represent an opportunity for target shareholders to participate in such benefits (ibid., p. 217).

The acquirer disposes of some mechanisms with the help of which he can try to raid some wealth from the free-riding shareholders. The most commonly used mechanisms include extraction of private gains mechanisms, two-tier tender offers, and purchasing toeholds in a potential target before a tender offer is made.⁴² The fact that these strategies are being used in the real world represents another proof of the existence of free-riding motives to become a minority interest holder.

4.1.2 PARTIAL ACQUISITIONS BY TENDER OFFERS

Partial acquisitions by tender offers can be qualified as those gaining control over the target company and its assets by a successful attempt of purchasing less than 100% of target shares with voting rights. In contrast to any-or-all tender offers, in partial acquisitions minority interest will definitely develop if the tender offer is successful. The acquirer does not plan to

 $^{^{40}}$ This has an implication of corporate governance rules (e.g. one share – one vote) that lead to acquisition of larger stakes having a positive influence on takeover premia, value of minority shares and social surplus of takeovers (ibid., p. 174).

⁴¹ This would include economies of scale, expanded use of existing facilities, financial strategies, market power, etc.

⁴² More about the extraction of private gains mechanisms is mentioned in footnote 37. For details on two-tier tender offers see e.g. Comment and Jarrell (1987) whereas details about acquiring toeholds can be found in e.g. Ravid and Spiegel (1999), and Bullow, Huang and Klemperer (1999).

purchase 100% of the target shares but aims to gain control over 100% of the target company's assets as well as over investment, financial and operative activities in the target company. Formally, from the legal perspective⁴³, the acquirer needs more than 50% of voting rights in order to gain control over the target company (Graham and Lefanowicz, 1999, p. 171). This can be achieved by either becoming the owner of more than 50% of voting rights in the target or by becoming the owner of less than 50% of the target voting rights but forming a voting majority in co-operation with some other target shareholders. In further discussion, the focus will be on the earlier way of gaining control.⁴⁴

Next sections discuss the reasons why companies opt for partial takeovers instead of any-orall tender offers, and analyze effects of partial acquisitions on minority interest holders. These effects can be categorized into economic and legal effects. Although a separate presentation of these two types of effects is provided in this paper, they are in practice usually strongly related to each other.

4.1.2.1 Theoretical Explanations of Motivations for Partial Acquisitions by Tender Offers

The earliest merger and takeover theories (e.g. Cunitz, 1971; Myers, 1976; Rappaport, 1979) deal solely with full acquisitions where the acquirer goes for 100% of the target company's shares and do however not provide a theoretical clue for partial acquisitions happening in the real world. In contrast, Roy (1988, p. 543) offers the first theoretical explanation for this phenomenon. Considering the change of control of 100% of the target company's assets as the generator of synergistic gains, his model assumes that synergistic benefits from corporate combinations may be divided among the parties within a takeover in any fashion desired and shows that the actual sharing of gains is determined by the acquisition price and the fraction of the target company acquired. Thus, at a given price an acquirer may find it optimal to acquire a certain fraction of the target in order to maximise his share of posttakeover synergistic gains and thus follow the principle of shareholder value maximisation. Hence, partial takeovers happen (ibid., p. 551).

A further perspective is offered by Burkart, Gromb and Panunzi (1998). Their approach to takeovers is general or rather focusing on any-or-all tender offers but can easily be applied to partial takeovers. As mentioned, it is the opportunity to extract private post-takeover benefits that motivates the acquirer to bid such a purchase price that would guarantee him control over the target by tendering as few shares as possible. An upward sloping supply of the target shares curve makes such efforts possible and therefore, though not formally, the acquirer de facto makes a partial takeover tender offer by setting such a purchase price that enables him to get as few voting shares in the target firm as needed to gain control. It is thus the acquirer's moral hazard that also explains motivations for partial acquisition tender offers.

⁴³ De iure.

4.1.2.2 Economic Effects of Partial Takeovers on Minority Interest

Economic effects of partial takeovers on minority interest holders refer to returns realized by the target firm's shareholders who accepted the tender offer and minority shareholders. The effects can be either positive or negative, depending on the relationship between private benefits and shared benefits as a consequence of the acquirer's control over the target firm. Shared benefits stem from the acquirer managing the target in a more efficient way than it was managed before and are shared proportionally to their fractional ownership by all shareholders of the target firm. In contrast, private benefits accrue solely to the majority shareholder. However, their impact on minority interest holdings might be negative but not necessarily. Namely, private and shared benefits do not necessarily preclude the presence of each other. In other words, the acquirer can improve the acquired company's management and extract some private benefits simultaneously.

The relationship between private and shared benefits mirrors in the relationship between three share prices of the target company, namely the pre-announcement exchange price⁴⁵, the purchase price offered by the acquirer, and the post-execution exchange price⁴⁶. If the takeover bid price exceeds the post-execution price, the acquirer is believed to anticipate receiving private benefits. However, if the bid price is higher than the pre-announcement price the difference can reflect either shared or private benefits or both (Barclay and Holderness, 1992, p. 269).

In general, broad empirical evidence suggests positive effects from the takeover on the target company's shareholders (Bešter, 1996, p. 79). Bradley (1980), who seems to be the most illustrative for the purpose of this study, examines 161 successful tender offers between July 1962 and December 1977. He finds that the average appreciation of the target shares in the 30-day window following the offer execution is 36% relative to the market while the average bid premium paid to target shareholder was 49% relative to the same benchmark (Bradley, 1980, p. 346).

The average decrease in the market value of 13 percentage points after the takeover can be explained by the following rationale: For a successful partial takeover the acquirer generally has to offer a purchase price that exceeds the expected share value of the target company under his management. This is the only way to motivate a rational target shareholder to accept the tender offer. Otherwise, a rational shareholder of the target firm can find rejecting the offer and participating in post-takeover benefits to be a better alternative. From the acquirer's point of view, the offered purchase price reflects the fact that only a certain ownership share below 100% will be sold at the price offered (Hathaway, 1990, p. 28) while the acquirer gains

⁴⁴ Due to dispersed ownership in many companies control over 100% of target company's assets may be achieved even by owning less than 50% of voting rights and without co-operation with other target shareholders at the same time.

⁴⁵ I.e. the price prior to announcement of the partial takeover tender offer.

⁴⁶ I.e. the price after execution of the partial takeover tender offer.

control over 100% of the target firm's assets. Thus, the difference between the bid price and the post-execution price represents the premium that an acquirer has to pay in order to gain control in the target company.

Obviously, target shareholders who accepted the offer are on average better off than minority interest holders. Nevertheless, Bradley's findings indicate that minority interest shareholders retain some of their influence on the target firm's share value after the execution of the takeover. Presuming that the post-announcement but pre-execution market share price of the target firm is a weighted average of the takeover bid price and the expected post-takeover value of minority shares, where weights are the fraction demanded by the bidder and the resulting minority interest fraction, respectively (ibid., p. 352), Bradley runs a regression where the realized post-takeover minority share value is used as a proxy for the corresponding expected value. Instead of the post-takeover minority share value's regression coefficient having the predicted value of 1, its estimated value is observed to be significantly less than 1, though being highly significant (ibid., p. 365)⁴⁷, indicating that the post-takeover value of the minority interest holdings as expected by the market prior to the offer closing does not identify a part of the realized post-takeover minority interest value that might be attributed to the ability of minority shareholders to execute some influence on managerial decisions and their implementation (Beckman, 1995, p. 9). The notion that minority interest can have an impact on managerial decisions of the parent firm as well as of the subsidiary is confirmed by positive effects of minority buyouts on the parent company's share value as observed by Smith and Amoako-Ado (1992, p. 42). The observed positive effects may be a consequence of the unification of shareholders' interests and the resulting decrease in agency costs. Minority shareholders are usually bought out at a premium in order to efficiently reduce the possibility of influencing parent and subsidiary company transactions through litigation (ibid.).

4.1.2.3 Legal Considerations Concerning Partial Takeovers and Minority Interest

From the legal perspective, partial acquisitions by tender offers are a subject of ongoing extensive controversial discussions concerning problems alleged to be related to partial takeovers as well as the appropriate methods of regulation of this matter (Ramsay, 1992, p. 370). Partial takeovers are viewed and dealt with differently in different countries. In the United Kingdom a partial takeover cannot be realized without the consent of the Panel of Takeovers and Mergers. Furthermore, Farrar et al. (1998, p. 595) state that the policy of the City Code on Takeovers and Mergers is aimed to discourage partial takeovers. In contrast, legislation in Germany and France is much more friendly towards partial takeovers resulting in the fact that partial takeovers are much more common in Germany and France than in the United Kingdom (Franks and Mayer, 1990, p. 191). In the United States the focus seems to be more on the coercive nature of front-end loaded two-tier tender offers, which represent a particular type of partial takeovers (Ramsay, 1992, p. 377).

⁴⁷ Bradley (1980), however, offers no explanation for this.

Although legal sources generally identify both, advantages and disadvantages of partial takeovers, with respect to minority interest holders it is the disadvantages that they are dealing with most. Among possible negative effects of partial takeovers, the theory of law exposes the problem of unfairness, the problem of exploitation, and the problem of coercion of shareholders.

The problem of unfairness, also called the problem of inequality of opportunity, is mostly associated with the possible unequal treatment of target shareholders with regard to the control premium the acquirer pays for the acquired fraction. In a partial takeover attempt for the demanded fraction of ownership the acquirer usually offers a purchase price per share, which is higher than the corresponding share price on the market. His offer includes a premium for acquiring control over 100% of the target firm's assets. Only tendering shareholders will on average get more for their shares than what is the expected post-takeover value of minority shares. Legal considerations on this matter argue whether the control premium should in accordance with the equality of shareholders principle accrue to all target shareholders proportionally to their ownership fraction, or should the control premium accrue solely to tendering target shareholders. On one hand legal opinions, being in favour of the earlier of the two options, claim the control premium to be a corporate asset and should therefore benefit all shareholders in proportion to their ownership. Besides, allowing control premiums might facilitate the transfer of a majority of voting shares to those who plan to extract pecuniary private benefits at minority interest's cost. Proposed solutions to these problems include prohibiting premiums, requiring that premiums be paid to the company and mandating that acquirers offer to buy the minority's shares on the same terms as the shares tendered (Barclay and Holderness, 1992, p. 268). On the other hand, proponents of the second option emphasize the shared benefits of control. The acquirer pays the control premium in order to gain the opportunity to improve the target firm's management. An increase in the minority share value is also due to the enhanced monitoring of the target provided by the acquirer. Thus, under this perspective, disallowing the target shareholders to receive a control premium for the tendered shares would result in a decrease of efficiency- and value-enhancing takeovers and consequently, minority shareholders would be deprived of their benefits as well. Furthermore, reduction of such transactions could also be provoked by obligation of also paying the premium to minority shareholders. Namely, the acquirers could fear that minority shareholders might enforce getting the premium through litigation which would make such transactions costlier and thus less attractive (ibid., p. 278).

The problem of exploitation arises when the acquirer as the new controller manages the target company for his own benefit rather than for the benefit of all shareholders. This leaves minority shareholders to be faced with the choice of either being locked in to the target company under new control, or throwing themselves upon the mercy of the market place to dispose of their shares. Minority shares already might be, and in reality often are, discounted to the extent that the voting power attached to these shares is ineffective to prevent the passing of an ordinary resolution by the new majority shareholder. A value decrease could also be attributed to the possibility that the liquidity of the share market for minority shares is lessened with a creation of a single majority shareholding. Thus, adding the possibility of minority shareholders being exploited by the new controlling party further reduces the minority share value (Ramsay, 1992, p. 385).

The problem of coercion is linked to the possibility of the acquirer abusing the dispersed ownership of the target company with the sole aim to pay for the demanded shares less than is their value potential under the current, i.e. pre-takeover, shareholder structure. The acquirer may offer a purchase price below the estimated current shareholders' valuation of their shares but more than the post-takeover value of minority shares. Thus, without the chance to effectively communicate with each other in order to make a collective decision, target shareholders being afraid to become minority shareholders might run to accept the offer, which might result in a successful takeover. However, in such a case, shareholders who do not decide to tender become minority shareholders and incur a loss in their share value.

4.2 EQUITY CARVE-OUTS

Equity carve-outs⁴⁸ represent another type of transactions in which a minority interest can arise. In an equity carve-out, a portion of a wholly owned subsidiary is offered for sale on the market by the parent company. Although the offered portion could theoretically fall anywhere between 0% and 100% of the subsidiary's common stock, in this the study attention is focused on such equity carve-outs where the parent company keeps a majority shareholding in the subsidiary and as a result of the transaction a minority interest develops. Thus, the parent company retains control over 100% of subsidiary's assets whereas an additional resource for financing the parent and/or the subsidiary company is gained.

From the perspective of the financial theory, an equity carve-out can be viewed either as an equity offering (e.g. Schipper and Smith, 1986; Nanda, 1991; Vijh, 1999) or as a sale of an asset of the parent company (e.g. Allen and McConnell, 1998). The fundamental distinction between these two interpretations of equity carve-outs lies in the motives of the parent company's management for deciding to sell a part of the subsidiary's common stock.

4.2.1 THE EQUITY OFFERING PERSPECTIVE

The interpretation of an equity carve-out as an equity offering is based on the assumption that the parent's management acts in the interest of the parent shareholders, i.e. maximising value of their holdings. This is the predominat view on equity carve-outs in financial literature and was first proposed by Schipper and Smith (1986).⁴⁹ In contrast to parent equity offerings where the parent share price reaction is negative on average, they find that the parent

⁴⁸ Also called partial public offerings, or spinouts, or partial subsidiary equity offerings.

⁴⁹ Their analysis captures a sample of 76 carve-outs made by New York Stock Exchange (NYSE) and American Stock Exchange (ASE) firms between 1963 and 1984.

company's share value on average increased by 1,8% when an equity carve-out was announced (ibid., p. 164).⁵⁰

Schipper and Smith suggest the following explanations for the phenomenon they observed (ibid., pp.170-175): Firstly, equity carve-outs result in more information about the subsidiary and thus about the consolidated entity becoming publicly available.⁵¹ As a consequence investor understanding of the group improves, particularly regarding the subsidiary growth opportunities. This may result in the parent's share price increase. Secondly, carve-outs are a way to obtain separate financing for subsidiary growth opportunities as opposed to parent equity offerings where a positive net present value subsidiary project might be foregone due to the anticipated negative share price effect. Finally, asset management and incentive contracts can be restructured due to the share price of the carved-out subsidiary becoming a measure of performance.

Another rationale is suggested by Nanda (1991, p. 1719) who extends the asymmetric information framework provided by Myers and Majluf (1984). Nanda's model presumes that there is asymmetric information about the value of subsidiary assets in place and about the value of assets in the rest of the group controlled by the parent company. Nanda shows that corporations are motivated to choose equity carve-outs to obtain the necessary financing for their projects when the parent's management believes that the parent stock is undervalued by the market.⁵² Furthermore, the parent firm's management typically has to face adverse selection costs when selling additional stock of the parent company to which the market usually reacts negatively. Hence, by an equity carve-out the parent's management makes use of the flexibility of the parent-subsidiary relationship in order to get additional financing while retaining or improving the parent company's stock price.

Equity carve-outs are also reported to have positive effects on the subsidiary share price and thus, on the value of minority interest holdings.⁵³ Vijh (1999) explains this by showing that carve-outs provide the subsidiary and the parent with the opportunity to focus on fewer business segments. Besides, the value of the subsidiary's newly offered stock usually represents a small fraction of the parent's market value and thus the reputation effects may prevent the overpricing of the offered subsidiary shares suggesting that market reacts efficiently to the likely future performance of an equity carve-out (ibid., pp. 305-306).

⁵⁰ More contemporaneous research also reports positive stock price effects of equity carve-outs. See e.g. Allen (1998, p. 102), or Allen and McConnell (1998, p. 165), or Vijh (1999, p. 305).

⁵¹ Due to an increased demand for information about the subsidiary when its shares become publicly traded.

⁵² Inversely, in case the management believes that the parent firm's stock is overvalued a seasoned equity offering is expected to be the fund raising approach of choice.

⁵³ Vijh (1999) examines long-term performance of subsidiary's common stock using a sample of 628 carve-outs during 1981-1995. He finds that over a three-year period following the carve-outs subsidiary stocks on average clearly outperform those from initial public offerings and seasoned equity offerings. Following an equity carve-out subsidiary stocks earn an annual average raw return of 14.3% during the first three years, compared to 3.4% for initial public offerings and 4.7% for seasoned equity offerings (Vijh, 1999, p. 305).
4.2.2 THE SALE-OF-AN-ASSET PERSPECTIVE

The alternative perspective of equity carve-outs interprets such a transaction as a sale of an asset and is based on the rationale that managers undertake carve-outs only when the firm is capital constrained. If a firm is capital constrained and needs additional financing, fresh capital can be obtained by selling an asset, or by the same token, by selling a part of a subsidiary that remains under parent management's control. In contrast to the outright sale of an asset, after an equity carve-out the parent management retains control over 100% of subsidiary assets. On the other hand, carve-outs are similar to conventional asset sales in that funds raised can be either retained by the firm for discretionary purposes or paid out to creditors or equity investors.

The alternative interpretation presumes that the managers' compensation is correlated with the size of the firm in terms of the dollar amount of the firm's assets they control, even if this would conflict with the interests of shareholders. Consequently, they are against an equity carve-out unless there is no other way of raising the funds needed, suggesting that equity carve-outs are carried out by firms that are highly leveraged and/or have recently experienced poor earnings performance (Allen and McConnell, 1998, p. 164). Allen and McConnell (1998) examined impacts of carve-outs on the parent company's share price subject to whether the funds raised have been used to lower debt or for other discretionary purposes. Consistently with the rationale of the alternative interpretation carve-outs had positive effects on the parent's common stock if debt was repaid, while using the collections for other purposes had a slightly negative effect on the stock price (ibid., p. 165).

4.3 OTHER CONSIDERATIONS ON THE NATURE OF MINORITY INTEREST

There are some other aspects of the nature of minority interest that are not specific for any of the theoretical frameworks discussed above but apply to all of them in a more general fashion. The legal protection of minority shareholders, the phenomenon of the reputation effect and the strategic acquisition of a minority interest are addressed in this study.

4.3.1 LEGAL PROTECTION OF MINORITY SHAREHOLDERS

In the process of corporate decision making shareholders express their interests through the voting rights attached to their shares. Therefore, when evaluating shareholders' rights legal scholars focus on how the voting mechanisms and procedures work. Legal protection of investors differs from country to country. When measuring how strongly a legal system protects minority shareholders, the following rights need to be considered (La Porta et al., 1998, pp. 1127-1128):

1. *The possibility of sending a proxy vote by mail:* In some countries shareholders have to appear in person or send an authorized representative to a shareholders' meeting in order

to be able to vote. Legal systems that are more in favour of minority shareholders in contrast allow sending respective proxy votes by mail.

- 2. *Proportional representation of shareholders on the board:* Some countries allow that the majority shareholders nominate the whole board of managers. Minority interest rights are however protected better in cases when they may nominate a proportional number of directors or when cumulative voting for directors is allowed.
- 3. *Legal mechanisms against perceived oppression by directors:* In addition to outright fraud, which is illegal everywhere, such mechanisms include rights to contest management decisions through litigation, or the right to force a repurchase of minority shares by the firm in case minority shareholders oppose to fundamental decisions of the board of directors or the assembly of shareholders.
- 4. *Pre-emptive right to purchase newly issued shares:* If such a pre-emptive right is ensured by the respective legal system it is perceived that minority interest's rights are more protected than in the case of non-existence of pre-emptive rights.
- 5. *The percentage of shares required to call an extraordinary shareholders' meeting:* The lower it is, the better the protection of minority interest.

Empirical evidence suggests that high ownership concentration and high proportion of corporate financing through bank lending are associated with poor legal protection of minority interest's rights. La Porta et al. (1998) analyzed legal systems in 49 countries. They examined the legal protection of the minority interest in relationship to the firm's management and the majority shareholder regarding the described minority interest's rights as stipulated in the legislation and as implemented in reality. Their findings suggest that legal environments are on average only weakly protective of shareholders either because of deficient laws or because of poor enforcement of otherwise good laws. They further find that ownership concentration is extremely high around the world and tends to be correlated with poor legal protection (ibid., p.1152). Furthermore, an inadequate legal framework is argued to interfere with the development of security markets by allowing expropriation of minority interest holders. Consequently, in countries with poor investor protection bank lending appears to be a more viable and reliable form of intermediation (Modigliani and Perotti, 2000, p. 5).

4.3.2 THE REPUTATION EFFECT OF THE MAJORITY SHAREHOLDER

With regard to the presence of majority shareholder's moral hazard, agency problems, and inadequate legal protection, as observed by recent financial literature, the following question might arise: Why are investors prepared to be minority shareholders at all? This question becomes even more relevant with the empirical findings stating that average market capitalization in hands of minority shareholders represents about 40% of GNP in the sample of 49 countries analyzed by La Porta et al (1997, p. 1138).

The phenomenon may be explained by the majority shareholder's reputation effect. Majority shareholding corporations can implicitly commit themselves not to expropriate minority

shareholders. In other words, majority shareholders can develop a reputation of treating minority investors exemplary. Otherwise, investors would change their discount rate, which would result in a fall of the subsidiary's share price. By being an owner of a considerable fraction of the subsidiary, majority shareholders are motivated to build on their reputation, especially in the case of a company with growth opportunities having huge needs for external financing. The reputation effect tends to be particularly important in cases where the moral hazard behaviour would represent an especially immense problem (Gomes, 2000, p. 617).

4.3.3 A STRATEGIC ACQUISITION OF A MINORITY INTEREST HOLDING

Sometimes companies may find it very beneficial to invest in a minority interest share of an otherwise majority controlled subsidiary. Acquisition of the minority interest holding may be a part of a wider contractual agreement between the parent and the minority interest acquirer and may fit well into strategic considerations of both. For instance, the minority interest acquirer brings new technology to the parent who is thereby guaranteed to have a competitive edge in his market, while at the same time the acquirer ensures a wider use of his technology. Such creation of minority interest markets is especially likely in high-tech industries where various global firms try to make their technology to become the standard global technology. Apparently, in such cases minority interest is not subject to unequal treatment or moral hazard as this investment is more strategic than financial in nature.

4.4 THE NATURE OF MINORITY INTEREST AND CONSOLIDATION PROCEDURE IMPLICATIONS

There are several consolidation procedure implications that can be derived from the theoretical frameworks described in previous subsections of this chapter. Beginning with anyor-all tender offers, there is sufficient evidence provided that shareholders who are motivated not to tender do this mainly in attempt to free ride on gains that can only be achieved through the consolidation between the acquirer and the target. From this perspective minority interest represents an ownership interest in the combined entity supporting the entity theory of consolidated financial reporting. Burkart, Gromb and Panunzi (1998) also acknowledge the existence of free-riding motivations, but do however directly point out the extraction of private benefits by the acquirer. This suggests that minority interest represents another class of equity within the combined entity other than the parent firm's equity. Henceforth, the softer or the alternative application of entity theory of showing total numbers as well as their division between parent and minority shareholders is to be proposed. No clear implications can however be derived regarding the treatment of goodwill.

Financial literature examining partial takeovers predominantly maintains that partial takeovers are attempts to gain control over 100% of the target assets in order to grasp synergistic benefits without buying 100% of shares. This implies the totality of assets of the consolidated entity and thus supports the entity theory of consolidated financial reporting. This literature

also acknowledges the existence of both, private and shared benefits, suggesting that minority shareholders do benefit from the combined entity, though in another way than the parent company shareholders. This implies that minority interest holdings can be identified as an ownership interest in the combined entity, however representing another class of equity than parent company shareholders. This is further supported by Beckman's (1995) interpretation of Bradley's (1980) results regarding the influence component of the post-takeover minority interest value as well as by the evidence of buying out minority interest at premium indicating that minority interest has an influence on the parent's management decisions. Regarding the goodwill treatment, empirical evidence shows that control premia are paid in partial takeovers, but not to minority shareholders, implying the purchased goodwill approach. In general, the financial literature dealing with partial takeovers provides plenty of evidence that the softer application of the entity theory ought to be the consolidation approach of choice.

Legal considerations on partial takeovers mostly deal with the processes within the subsidiary that has been acquired. From the legal point of view, i.e. de iure, minority interest undoubtedly represents an equity interest in the subsidiary but not in the combined entity. Nonetheless, dealing with the problems of coercion, exploitation and inequality of target shareholders clearly shows that legal scholars acknowledge that the acquirer wins control of 100% of the target's assets. This indicates the totality of the combined entity's assets.

When it comes to equity carve-outs, empirical evidence by extension suggests that this type of external equity financing clearly has positive effects on the parent's share value. Besides, investors that decide to buy newly offered shares within a carve-out must be motivated by positive value expectations regarding their holdings. Indeed, there is some empirical evidence that supports this as well. It is the alternative source of equity financing that enables the combined entity to operate more efficiently and both parties, namely the parent firm's shareholders and the minority interest acquirers, attempt to gain from it. Therefore, minority interest resulting from an equity carve-out transaction represents an ownership interest in the combined entity. Although financial literature speaks about partial separation of subsidiary assets from the parent firm's assets, it at the same time asserts that the parent retains control over 100% of subsidiary assets, indicating the totality of the consolidated entity's assets. However, carve-outs represent an alternative option of equity financing for the consolidated entity when the parent firm's shares are perceived to be undervalued by the market. Thus, a minority interest represents a distinct class of equity of the combined entity and as such differs from the parent firm's common equity.⁵⁴ The financial literature examining equity carve-outs clearly supports the entity theory of consolidated financial reporting, though favouring its softer application.

⁵⁴ This is supported not only by the equity offering interpretation but also by the sale-of-an-asset interpretation of carve-outs asserting that the parent firm's management would choose fund raising through selling an alternative type of equity only if other financing options were not available.

Theoretical discussions on the legal protection of minority interest shareholders deal with intrasubsidiary matters. However, in theory there should be minority interest protection and some of the corresponding minority interest rights may undoubtedly have an influence on the parent firm's management's decisions if properly enforced. This slightly supports the entity theory. The reputation effect phenomenon, in contrast, provides a strong argument supporting the entity theory as companies concerned with the effect of their reputation for minority interest treatment are averse to minority interest expropriation and thus enable minority interest holders to receive their part of benefits stemming from the corporate combination. In the case of a strategic acquisition of a minority interest holding there is mutual interest to benefit from the corporate combination. The entity theory is thus again supported.

To summarize, financial literature presented in this chapter is by extension in support of the entity theory of consolidated financial reporting, fundamentally by putting forward two arguments: Firstly, the parent company's management holds control over 100% of the subsidiary's assets. Thus, the totality of the consolidated group's assets and liabilities should be included in financial reporting. Secondly, minority interest is argued to represent an ownership interest in the entire consolidated entity. However, theoretical assertions by extension imply minority interest to represent a class of ownership that is different from the parent company's common equity ownership as the corresponding rights attached to each of the equity classes differ from each other. Consequently, when approaching consolidated financial reporting, the softer application of the entity theory ought to be pursued, under which in addition to the total numbers their division among majority and minority interest is also presented.

5 ANALYSIS OF THE VALUE RELEVANCE OF ALTERNATIVE FINANCIAL REPORTING CONCEPTS IN THE U.K. CONTEXT

5.1 INTRODUCTION

5.1.1 SUBJECTS OF THE STUDY

In this part of the thesis the value relevance of the parent company accounting information, the value relevance of consolidated information as currently reported under the U.K. accounting standards, and the value relevance of alternative methods of consolidation is investigated. As the difference between alternative consolidation concepts predominantly rests on how minority interest is to be treated, the emphasis is put on the investigation of the value relevance of the minority interest components of net assets and earnings along the lines of the alternative consolidation approaches. The main valuation issues regarding consolidation are straightforward: do the parent company accounts, the consolidated accounts as currently prescribed, or alternative methods of consolidation to that currently used, provide the most useful pricing information? This study aims to give an answer to these questions in the

context of the U.K. accounting regulations and firms that are quoted at the London Stock Exchange. This is done in a manner of market-based accounting research.

Market-based accounting research is an economics-based approach to financial reporting⁵⁵ which began to emerge in the late 1960s following the seminal paper of Ball and Brown (1968). Its aim is to test empirical propositions about accounting using the real world share price on one side of the equation and accounting information on the other (Walker, 1997, p. 342). As potential end users of market-based research financial accounting literature identifies (i) public policy makers which are mostly interested in the usefulness and appropriateness of the content and the form of presented financial information as well as (ii) companies which like to know what factors drive their share price, and (iii) investment analysts and private investors who are interested in how the market responds to accounting information in general, and earnings in particular (ibid., p. 344).

This study is mainly directed to accounting regulators as end users⁵⁶, especially to the ones in the U.K. Due to the required form of consolidated financial statements in the U.K., which makes testing and comparing the value relevance of consolidation approaches and of parent company accounting information possible, issues addressed here, however, may also be in a wider international interest.⁵⁷ Especially in the light of the finding that accounting regulators are increasingly "depending upon entity concepts of consolidation to define the extent of ownership control and, thus, the definition of the reporting group" (Abad et al., 2000, p. 157). This study casts some light on the suitability of such moves.

In addition, an empirical evaluation is provided of the currently prescribed treatment of the three distinct levels of investment, namely investments, associated companies and subsidiaries. The main difference between the three is the extent of control. As disclosure requirements attempt to mirror the differences in control the following questions are to be answered: Do investors value these distinctions? Are the distinctions adequate? These issues are related to the consolidation issues, and thus provide an additional insight into the matter of interest.

⁵⁵ Walker (1997, p. 342) identifies three major bodies of work within the economics based approach that takes neo-classical economics as a theoretical foundation for accounting: the market based accounting research, the information economics approach which consists of more abstract theoretical research based on advanced mathematical economics, and the positive accounting theory which "sought to combine the empirical methods of positive economics with the insights of the property rights view of agency theory". ⁵⁶ It is assumed that it is in the interest of accounting regulators that accounting data provide as value relevant

⁵⁶ It is assumed that it is in the interest of accounting regulators that accounting data provide as value relevant information as possible. As accounting rules do affect the market value/accounting data relationship (Ohlson and Zhang, 1998, p. 87), this analysis of value relevance of different accounting concepts clearly should be in the interest of accounting regulators.

⁵⁷ In the U.S., for instance, parent companies reporting consolidated financial statements do not have to present individual parent company financial statements. Therefore, value relevance of consolidated versus unconsolidated accounting information cannot be tested empirically. Besides, the U.S. accounting standards do not explicitly require the disclosure of minority interest components but allow companies to choose any of the three consolidation concepts.

5.1.2 VALUE RELEVANCE

The notion of value relevance is central to this thesis. Value relevance is a term that is a common feature of market based accounting studies regardless of the potential interest or end user behind the study. As there are many different definitions of the value relevance of accounting numbers, it is necessary to explain what is meant by using this term in this study.

Francis and Schipper (1999, pp. 325-327) provide four possible interpretations of value relevance that are most frequently used in market-based accounting research. First interpretation considers accounting information to be value relevant if the information provided by financial statements captures intrinsic share value toward which stock prices tend to drift. This would effectively mean that financial statement information leads share prices and is eventually closer to intrinsic value. The second interpretation claims that financial information is value relevant if variables used in a valuation model can be found in or predicted by financial statements numbers. The third interpretation suggests that accounting numbers' value relevance would be indicated by a statistical association between financial information in question in setting. Finally, under the fourth interpretation accounting information is value relevant if it captures or summarizes information that has affected share prices in the past.

The last two interpretations are consistent with Easton (1999, p. 400), where it is asserted that there are essentially two perspectives that have influenced research methods in the marketbased accounting research studies. The first is the information perspective, which Easton describes as "an investor, a user, or a finance perspective that views accounting as a source of information for use, either actual or potential, in investment decisions". The second perspective views financial statements as "a summary of events that have affected the firm over the fiscal period for which the report has been prepared".

In this study, end of accounting period share price or firm market value is taken as a benchmark to evaluate the informative potential of competing concepts of presenting financial information. It has to be pointed out that it is not the effect of disclosed accounting numbers on the share price that is in our interest, but rather the answer to the question: how valuable are the different concepts to investors in terms of providing the appropriate information? Thus, the value relevance interpretation of this study is mainly in the spirit of the fourth interpretation of Francis and Schipper (1999) and the second perspective provided by Easton (1999).

5.1.3 RELATED STUDIES

In recent financial accounting literature there are many papers that have empirically addressed the issue of the value relevance of information provided in financial statements.⁵⁸ While the majority of the papers perform the value relevance analysis on a cross-sectional, or interindustry basis, Amir and Lev (1996, p. 6) provide a value relevance study on an industry specific basis and support their approach by the fact that "much of economic research, particularly in the industrial organization area, has shifted years ago from cross-sectional studies to industry or sectoral analysis". Despite this being true, the analysis in this thesis concentrates mainly on cross-sectional data as it addresses the value relevance of current versus alternative disclosure rules that generally hold for all of the companies in an economy. Furthermore, it is quite unlikely that the future will bring industry specific accounting standards, as this would most probably be too costly. However, I do not deny that any accounting procedures would provide differences in the value relevance of accounting numbers among single industries. Share prices of companies in some industries will always be more associated with accounting numbers than the share prices of companies in some other industries. Papers that in contrast to Amir and Lev (1996) do perform a general inter-industry analysis (e.g., Collins, Maydew and Weiss (1997), Francis and Schipper (1999)), mostly concentrate on the change of value relevance of accounting numbers in the course of time. The analysis performed in this thesis, however, focuses more on the search for the most value relevant of the theoretical accounting concepts. To my knowledge, the only paper in recent financial accounting literature that addresses the same issues empirically as this study is Abad et al. (2000), where this is done in a context of the Madrid Stock Exchange. Again, to my knowledge, the same issue is yet to be addressed directly in the context of the U.K. companies.

5.1.4 GENERAL HYPOTHESES OF THE MASTER THESIS

As already mentioned, the financial economics literature overwhelmingly shows a clear preference for the entity concept of consolidated financial reporting. Furthermore, the U.K. and especially the U.S. accounting regulations have been steadily moving closer towards the entity concept. This leads to a logical need to test empirically whether the entity concept is indeed superior to the parent company concepts of consolidation. This master thesis is aimed to provide empirical proof that the entity concept is more value relevant than any of the parent company concepts. The main null hypothesis to be rejected is that the entity concept of consolidated reporting in terms of value relevance is superior neither to the parent company concept nor to the proportionate consolidation concept.

In the search for the most value relevant concept this hypothesis implicitly presumes that another hypothesis is true, namely that consolidated accounts are superior to parent company

⁵⁸ Lo and Lys (2000) refer to this kind of literature as "a long list of studies in the value relevance genre that look at the association of prices with book value and earnings." (p. 362)

accounts. This has to be proved as well. Thus, the appropriate null hypothesis to be rejected here would be that consolidated figures are not more value relevant than the parent company figures.

5.2 THE MODEL

5.2.1 THE RESIDUAL INCOME VALUATION FRAMEWORK

For testing the value relevance of different accounting concepts of presenting financial information a valuation framework based on the residual income valuation model is used. The residual income valuation model was already proposed by Preinreich (1938) and used by Edwards and Bell (1961), Edey (1962) and Peasnell (1982). The model has become very popular in the contemporary accounting literature, since Ohlson (1995) reintroduced it into valuation research.⁵⁹ The framework applied in this study permits the share price to be modelled as a function of purely accounting variables, namely as a weighted average of capitalized current earnings and current book value, while allowing for additional value relevant information beyond accounting variables.

The starting point of the residual income valuation model is the dividend discount model, which expresses a firm's ex-dividend market value as present value of the expected future dividends:

$$P_{t} = \sum_{\tau=1}^{\infty} R^{-\tau} E_{t} [d_{t+\tau}]$$
(5.1.)

Where:

 P_t represents market capitalisation at the end of period t,

dt represents dividends received at the end of period t,

 $\mathbf{R}=(1+\mathbf{r}),$

r represents cost of capital or the discount rate, and

 E_t [] represents the expectations operator based on the information set at the end of period t.

In order to derive the residual income valuation model from the dividend discount model two additional assumptions have to be made. First, the clean surplus accounting relation is assumed, that is:

$$bv_t - bv_{t-1} = e_t - d_t (5.2.)$$

⁵⁹ The literature often refers to the residual income valuation model, "which provides a simple accounting equivalent to the traditional dividend discount model" (Rees, 1997, p. 1111), as the Edwards-Bell-Ohlson (EBO) model or the abnormal earnings valuation model (e.g. White, Sondhi and Fried, 1997, p. 1062).

Where:

et represents the total value of ordinary shareholder earnings for period t, and

bv_t represents the book value of ordinary shareholder equity at the end of accounting period t.

All other variables are as previously defined.

With the second assumption a regularity condition is imposed, namely that the book value of equity grows at a rate less than R and this can formally be stated as (Lo and Lys, 2000, p. 341):

$$R^{-\tau}E_t[bv_{t+\tau}] \xrightarrow{\tau \to \infty} 0 \tag{5.3.}$$

With the application of these two assumptions to the dividend discount model and some rearranging an expression of firm market value as a function of current book value of equity and discounted expected abnormal earnings can be derived:⁶⁰

$$P_{t} = bv_{t} + \sum_{\tau=1}^{\infty} R^{-\tau} e_{t+\tau}^{a}$$
(5.4.)

Where:

 $e_t^a = (e_t - r \cdot bv_{t-1})$ represents abnormal earnings⁶¹ for period t which is defined as earnings minus a charge for the use of the capital.

All other variables are as previously defined.

A growing list of research is dedicated to the residual income valuation model, but most of that research, however, does not provide any formal tests of the model. The problem of model (5.4.) is that, as such, it is neither implementable nor testable (Lo and Lys, 2000, p. 355). In order to arrive to an empirically testable model, some restricting assumptions need to be placed on the abnormal earnings dynamics. Accounting literature takes different paths in setting assumptions, depending on different objectives in hypothesis testing (Rees, 1997, p. 1116). However, many of the recent studies eventually come to some form of the following linear regression (Easton, 1999, p. 402):

$$MV_{it} = \beta_0 + \beta_1 B V_{it} + \beta_2 E_{it} + \varepsilon_{it}$$
(5.5.)

Where:

MV_{it}	represents market value of firm i at time t,
BV_{it}	represents book value of equity for firm i at time t, and
E_{it}	represents earnings for firm i for the period ending at time t.

⁶⁰ This is the so-called residual income model.

⁶¹ The literature often refers to abnormal earnings as residual income.

Equation (5.5.) represents the basic model for testing empirical propositions in this study. In words, this equation states that a firm's market value at time t equals a linear combination of firm's current book value of equity and current earnings plus a constant β_0 , which represents non-accounting information that is value relevant.⁶²

Financial accounting literature acknowledges that there are some limitations, which a researcher has to bear in mind when using this valuation framework. There might be some practical problems due to possible deviations from clean surplus accounting in real accounting systems, which is also the case in the U.K. (Walker, 1997, p. 352). Lo and Lys (2000, p. 353) approach this limitation by providing a theoretical refinement of residual income valuation model that allows for dirty surplus accounting and eventually leads to the same empirically testable model. Another limitation is the implicit assumption that accounting and disclosure choices are exogenous to firm performance. This assumption is not supported by findings from the literature which has shown that, for example, firms going though a bad period may try to smooth their reported profits upwards (White, Sondhi and Fried, 1997, p. 66) or firms that need to access funds for expansion tailor their accounting methods to their needs (Walker, 1997. p. 353). Finally, the performance of the model (5.5.) is sensitive to how recently the firm went public, to the probability for the firm of being taken over and to the differing price-earnings relationships for profitable and unprofitable firms.^{63, 64}

Despite these limitations the residual income valuation framework is used in this study as it provides the best known practical approach to test the outlined propositions. Besides, some of the limitations are coped with econometric solutions provided in the subsequent sections.

5.2.2 THE BASIC MODELS USED IN THIS STUDY

To investigate the value relevance of the parent company accounting information and consolidated information the basic models to be tested are the following:

$$MV_{it} = \beta_0 + \beta_1 E_{it}^P + \beta_2 BV_{it}^P + \varepsilon_{it}$$
(B.1)

$$MV_{it} = \beta_0 + \beta_1 E_{it}^G + \beta_2 BV_{it}^G + \varepsilon_{it}$$
(B.2)

$$MV_{it} = \beta_0 + \beta_1 \left(E_{it}^G + E_{it}^M \right) + \beta_2 \left(BV_{it}^G + BV_{it}^M \right) + \varepsilon_{it}$$
(B.3)

$$MV_{it} = \beta_0 + \beta_1 E_{it}^G + \beta_2 E_{it}^{M} + \beta_3 BV_{it}^G + \beta_4 BV_{it}^{M} + \varepsilon_{it}$$
(B.4)

⁶² Easton (1999, pp. 401-402) interprets model (5.5.) by using the following rationale: For some company assets book value could be used as a best guess basis for determining market value. For other company assets earnings would be the first approximation for assessing value. By allowing for additional information captured by β_0 to influence firm value, firm value can be determined by using model (5.5.).

⁶³ The latter phenomenon, which is called the negative earnings non-linearity, is dealt with later on with the econometric issues.

⁶⁴ An in depth discussion of the limitations of market-based accounting research including the residual income model can be found in Walker (1997).

Where:

- P represents the parent company figures
- G represents the consolidated group figures, and
- MI represents the minority interest figures.

Thus, model (B.1) investigates parent company, i.e. unconsolidated accounting information, model (B.2) refers to the proportionate consolidation approach and represents the parent company theory. Model (B.3) refers to the economic unit concept of consolidation.⁶⁵ Basic model comparisons for these three models are tested by using the Vuong test which gives an indication of which of the two models that are being compared provides a statistically significantly better explanation of the dependent variable. A more detailed presentation of how the Vuong test works and how it is designed is shown later on in section 5.3.1.

Consolidation is further investigated by examining model (B.4). This model is referred to as the U.K. model as it contains distinct items, i.e. group and minority interest numbers, as presented in U.K. firms' financial reports. By testing this model a direct evaluation of the U.K. accounting regulation can be made. Model (B.4) enables us to test the value relevance of the alternative version of the economic unit concept that was not possible by testing models (B.1), (B.2), and (B.3), respectively. Besides, the robustness of the previously applied Vuong test results can be assessed.

The U.K. model (B.4) deals with this issue in the following way: Obviously, the extreme version of the economic unit approach would be indicated if β_1 and β_2 are significant and equal, and if β_3 and β_4 are significant and equal. Current reporting practice, which represents the softer version of the economic unit concept, would be supported by either β_2 or β_4 being significant and statistically different from β_1 and β_3 , respectively. While the last two statements are pretty straightforward, it is however, not entirely clear whether the entity or the proportionate consolidation concept would turn out to be more value relevant if both β_2 and β_4 are statistically insignificant. Statistical insignificance of the two response coefficients would indicate that presenting minority interest figures separately from group numbers is meaningless. As the extreme version of the economic unit concept as well as the proportionate consolidation concept do not prescribe disclosing the minority interest numbers, additional tests would have to be introduced to come to a meaningful conclusion. Testing the equality of regression coefficients β_1 and β_2 , and β_3 and β_4 , respectively, might provide a useful indication. If the respective regression coefficients turn out to be statistically significantly different, proportionate consolidation is the approach of choice. If the differences are not significant, this would indicate that group and minority interest items should be valued on an equal basis, thus supporting the economic unit concept.

⁶⁵ In fact, (B.3) represents the extreme version of the economic unit concept as it does not account for the minority interest numbers separately from the total numbers.

The value relevance of the parent company concept as set out in section 2.4.1.1. is not tested in this study. As mentioned, a value relevant minority interest item in model (B.4) means that the prescribed presentation of minority interest, namely at fair value at time of acquisition plus retained minority interest earnings, is value relevant. Unfortunately, this tells nothing about the value relevance of the minority interest figure presented at pre-acquisition book value, as would be the case under the parent company concept. As there is no detailed information about the minority interest item structure, which would enable an assessment of the pre-acquisition book value, the parent company concept cannot be tested on the U.K. data.

Searching for the most value relevant concept of presenting accounting information among the consolidation concepts implicitly presumes that consolidated accounts are superior to the parent company accounts in terms of value relevance. In order to find the most value relevant accounting concept this assumption has to be tested as well. Here this assumption is additionally tested by investigating the value relevance of using three different methods for the three types of investments under the currently prescribed consolidation rules versus showing these respective numbers at cost, as this is the case in the parent company accounts. This is done by breaking up the consolidated group earnings in the following way:

Parent earnings are made up of earnings that are made by the parent company's own business⁶⁶, dividends from investments, dividends from associated undertakings and dividends from subsidiary undertakings. This can formally be expressed as:

$$E^{P} = E_{P}^{+} + DIV_{I} + DIV_{A} + DIV_{S}$$

$$(5.6.)$$

Group earnings are made up of earnings that are made by the parent company's own business⁶⁷, dividends from investments, group's share of associated undertaking's earnings and group's share of subsidiary undertaking's earnings. This can formally be expressed as:

$$E^{G} = E_{P}^{-} + DIV_{I} + E_{A}^{G} + E_{S}^{G}$$
(5.7.)

After simplifying for $E_P^+ = E_P^-$, the difference between the consolidated group earnings, as presented in the consolidated income statement, and unconsolidated parent company earnings, which can usually be found in notes to the accounts, can be expressed as:

$$E^{G} - E^{P} = \left(E_{A}^{G} - DIV_{A}\right) + \left(E_{S}^{G} - DIV_{S}\right).$$
(5.8.)

Let's replace the right hand side of the equation above with

$$RE^{A} = E_{A}^{G} - DIV_{A}$$
and
$$(5.9.)$$

⁶⁶ Unfortunately including profits from transactions with associates and subsidiaries.

⁶⁷ Unfortunately excluding profits from transactions with associates and subsidiaries.

$$RE^{S} = E_{S}^{G} - DIV_{S}.$$

$$(5.10.)$$

Group earnings are known, parent earnings are known, associated earnings must be disclosed in the group income statement, associated dividends in the group cash flow statement⁶⁸, thus an estimate of RE^S can be achieved:

$$RE^{S} = E^{G} - E^{P} - RE^{A}$$

$$(5.11.)$$

Therefore, group earnings can be decomposed in the following way:

$$E^G = E^P + RE^S + RE^A \tag{5.12.}$$

An analogous split for book value cannot be made because group book value of equity includes goodwill write-offs, which are unknown, as well as proportions of retained earnings from associated undertakings, and subsidiary undertakings, which are unknown as well. Consequently, a check on the robustness of the earlier results can be made by testing the model:

$$MV_{it} = \beta_0 + \beta_1 E_{it}^P + \beta_2 R E_{it}^S + \beta_3 R E_{it}^A + \beta_4 B V_{it}^G + \varepsilon_{it}$$
(B.5)

Consolidated accounts would be indicated to be more value relevant than unconsolidated accounts by β_2 and β_3 being significant. Insignificance of these two response coefficients would mean either that unconsolidated accounts are more value relevant or that the accounting methods currently used are inappropriate. A difference between β_2 and β_3 would indicate the value relevance of different accounting procedures for subsidiaries and associates, but not necessarily those currently mandated. If β_1 , β_2 and β_3 are equal, this would stress the value relevance of the group earnings figure. I refer to (B.5) and its modifications as the extent-of-control model.⁶⁹

5.3 ECONOMETRIC ISSUES

5.3.1 THE VUONG TEST

Recall that the research question addressed in this thesis is: which of the competing concepts of presenting accounting information is the most value relevant, i.e. provides the best summary of events that have affected the market capitalization of the firm in the reporting period? Therefore, the parent company accounting information, the parent company theory of consolidated reporting and the entity theory are set up and evaluated as nonnested models represented by (B.1), (B.2), and (B.3) in order to formally discriminate between the three competing specifications and to provide the first step in answering the research question.

⁶⁸ Perhaps not accrual but a reasonable estimate.

⁶⁹ I refer to RE^S as residual subsidiary earnings and to RE^A as residual earnings from associated undertakings.

The majority of value relevance studies use the determination coefficient, i.e. the R²-statistic, as a measure of value relevance.⁷⁰ Unfortunately, comparing R²-statistics of the competing models would not provide statistically reliable evidence as to which model is superior to the others (Dechow, 1994, p. 23). Therefore, a technique provided by Vuong (1989) is used. The Vuong test is a likelihood ratio test for model selection.⁷¹ Its advantage is that it does not require, in contrast to many other model selection techniques, that under the null either of the models is true. Intuitively, this technique tests the null hypothesis that the two models that are being compared are equally close to explaining the true data generation process against the alternative that one of the models is closer to it. In addition to that, the Vuong test makes it possible to determine which set of variables has relatively more explanatory power. Thus, Vuong's statistic allows both competing models to have explanatory power and at the same time "provides direction concerning which of the two is closer to the true data generating process" (Dechow, 1994, p. 38).

Here the Vuong procedure is shown for comparing models (B.1) and (B.2).⁷² The same procedure as shown for this example can easily be implemented when making all the relevant model comparisons in this study. Let's start with $(B.1)^{73}$ and the assumption that MV_i are independently and normally distributed with mean $\beta_0 + \beta_1 E_i^P + \beta_2 B V_i^P$ and a common variance σ_P^2 . This can be formally expressed as follows:

$$MV_i = \beta_0 + \beta_1 E_i^P + \beta_2 BV_i^P + \varepsilon_i, \qquad \varepsilon_i \sim \text{iid } N(0, \sigma_P^2)$$
(V.1)

The joint probability density of the observations $MV_1, MV_2, ..., MV_n$, given their interindependence and the preceding mean and variance can be written as

$$f(MV_{1},...,MV_{n}|\beta_{0} + \beta_{1}E_{i}^{P} + \beta_{2}BV_{i}^{P},\sigma_{P}^{2}) = \prod_{i=1}^{n} \frac{1}{\sigma_{P}\sqrt{2\pi}} \exp\left[-\frac{1}{2\sigma_{P}^{2}}(MV_{i} - \beta_{0} - \beta_{1}E_{i}^{P} - \beta_{2}BV_{i}^{P})^{2}\right]$$
.
(V.2)

⁷⁰ See e.g. Amir and Lev (1996), Collins, Maydew and Weiss (1997), Francis and Schipper (1999).

⁷¹ The Vuong's test is a test of nonnested models. Two models are said to be nested when either of the two models is a special case of the other model. However, two models are said to be nonnested when either of the two models cannot be derived as a special case of another (Gujarati, 1995, p.487). Thus, models (B.1), (B.2) and (B.3) are nonnested and the Vuong's test can be applied. Unfortunately, model (B.4) is nested with both (B.2) and (B.3), while model (B.5) is nested with (B.2). Besides models (B.4) and (B.5) are nested with each other. Therefore, the Vuong's procedure cannot be applied in these cases.

 $^{^{72}}$ The explanation follows the explanation of Dechow (1995, p. 37-40).

⁷³ For simplicity time subscripts are excluded but understood.

The log-likelihood function is⁷⁴

$$\ln LF(MV_{P}) = \sum_{i=1}^{n} \ln LF(MV_{P_{i}}) = \sum_{i=1}^{n} \left[-\frac{1}{2} \ln \left(2\pi \sigma_{P}^{2} \right) - \frac{1}{2\sigma_{P}^{2}} \left(MV_{i} - \beta_{0} - \beta_{1} E_{i}^{P} - \beta_{2} BV_{i}^{P} \right)^{2} \right].$$
(V.3)

As the maximum likelihood estimators of β_0, β_1 , and β_2 are the same as under the method of the least squares. After substituting the least squares estimators $\hat{\beta}_0, \hat{\beta}_1$, and $\hat{\beta}_2$ for β_0, β_1 , and β_2 for each *i* can be defined:

$$e_{P_i} = MV_i - \hat{\beta}_0 - \hat{\beta}_1 E_i^P - \hat{\beta}_2 BV_i^P.$$
(V.4)

In the same way the log-likelihood function for (B.2) can be obtained:

$$\ln LF(MV_G) = \sum_{i=1}^{n} \ln LF(MV_{Gi}) = \sum_{i=1}^{n} \left[-\frac{1}{2} \ln(2\pi\sigma_G^2) - \frac{1}{2\sigma_G^2} (MV_i - \beta_0 - \beta_1 E_i^G - \beta_2 BV_i^G)^2 \right]$$
(V.5)

and

$$e_{Gi} = MV_i - \hat{\beta}_0 - \hat{\beta}_1 E_i^G - \hat{\beta}_2 BV_i^G.$$
 (V.6)

The maximum likelihood estimations of regression variances differ from the least squares estimations and can be obtained as

$$\hat{\sigma}_{P}^{2} = \frac{RSS_{P}}{n}$$
 and $\hat{\sigma}_{G}^{2} = \frac{RSS_{G}}{n}$, (V.7)

respectively, where:

 RSS_P represents the residual sum of squares figure from regression (B.1), and RSS_G represents the residual sum of squares figure from regression (B.2).

After performing the likelihood ratio

$$LR = \ln\left(\frac{LF(MV_{P})}{LF(MV_{G})}\right) = \frac{n}{2}\left(\ln(\hat{\sigma}_{G}^{2}) - \ln(\hat{\sigma}_{P}^{2})\right) + \sum_{i=1}^{n}\left(\frac{e_{Gi}^{2}}{2\hat{\sigma}_{G}^{2}} - \frac{e_{Pi}^{2}}{2\hat{\sigma}_{P}^{2}}\right),$$
(V.8)

and after estimating the variance of the likelihood ratio which is given by

$$\hat{\omega}^{2} = \frac{1}{n} \sum_{i=1}^{n} \left(\frac{1}{2} \ln(\hat{\sigma}_{G}^{2}) - \frac{1}{2} \ln(\hat{\sigma}_{P}^{2}) + \frac{e_{G_{i}}^{2}}{2\hat{\sigma}_{G}^{2}} - \frac{e_{P_{i}}^{2}}{2\hat{\sigma}_{P}^{2}} \right) - \left(\frac{1}{n} LR \right)^{2}, \quad (V.9)$$

⁷⁴ This is a natural logarithm function of the likelihood function denoted by $LF(\beta_0, \beta_1, \beta_2, \sigma_p^2)$ where $MV_1, ..., MV_n$ are known or given and the parameters $\beta_0, \beta_1, \beta_2$, and σ_p^2 are unknown and have to be found via the method of maximum likelihood (Gujarati, 1995, p. 111).

Vuong's Z-statistic is formed as

$$Z = \frac{1}{\sqrt{n}} \frac{LR}{\hat{\omega}} \,. \tag{V.10}$$

For the model comparisons in this study a simpler approach for obtaining Vuong's Z-statistic is available (Vuong, 1989, p. 318). After substituting (V.7) into (V.3) and (V.5) and then the later two into (V.8) the following can be obtained, for each observation i:

$$LR_{i} = \ln\left(\frac{LF(MV_{P_{i}})}{LF(MV_{G_{i}})}\right) = \frac{1}{2}\ln\left[\frac{RSS_{G}}{RSS_{P}}\right] + \frac{n}{2}\left[\frac{e_{G_{i}}^{2}}{RSS_{G}} - \frac{e_{P_{i}}^{2}}{RSS_{P}}\right]$$
(V.11)

The Z-statistic can be obtained by regressing LR_i on unity. The t-statistic from this regression multiplied by $\sqrt{(n-1)/n}$ results in Vuong's Z-statistic, which tends in distribution to a standard normal random variable. If the Z-statistic is positive and significant, the Vuong's test indicates that in this example (B.1) is superior to (B.2), while the opposite would be indicated by a negative and significant value of the Z-statistic.

5.3.2 TESTING THE EQUALITY OF TWO REGRESSION COEFFICIENTS

Regressions (B.4) and (B.5) require testing the equality of regression coefficients. In this section the testing procedure is illustrated for the regression model (B.4). After estimating the regression:

$$MV_{it} = \beta_0 + \beta_1 E_{it}^G + \beta_2 E_{it}^M + \beta_3 BV_{it}^G + \beta_4 BV_{it}^M + \varepsilon_{it},$$

the following procedure is applied to test for instance whether or not β_1 and β_2 are equal. Therefore, the null and the alternative hypotheses to be tested are:

$$H_0: \beta_1 = \beta_2$$

$$H_1: \beta_1 \neq \beta_2$$
(T.1)

Under classical assumptions, the appropriate test is the t-test:

$$t = \frac{\hat{\beta}_1 - \hat{\beta}_2}{\sqrt{\operatorname{var}(\hat{\beta}_1) + \operatorname{var}(\hat{\beta}_2) - 2\operatorname{cov}(\hat{\beta}_1, \hat{\beta}_2)}},$$
(T.2)

with (n-k) degrees of freedom. If the t variable computed from (T.2) exceeds the critical t value at a significance level sufficiently low and for given degrees of freedom, the null can be rejected, which would indicate that the regression coefficients in question are not equal (Gujarati, 1995, p. 255).

5.3.3 SCALE EFFECTS

One of the most important econometric issues in market based accounting research is the issue of scale and scale effects. This finding is supported by the long list of recent financial accounting literature that puts great emphasis on identifying and mitigating the effects of scale.⁷⁵ An overview of how these papers describe scale and scale effects is presented in this section. In addition, various remedies for spurious effects of scale are considered. Finally, the findings are applied to the models of this study.

The concept of scale is mostly described in terms of variables that can be used as a basis for analysing scale effects empirically.⁷⁶ Christie (1987, p. 237), for example, finds the market value of equity at the beginning of each period to be the correct deflator for controlling scale in returns studies, while Brown, Lo and Lys (1999, p. 103) favour the lagged market value in price-level studies.⁷⁷ Barth and Kallapur (1996, p. 530) define scale as the amount originally invested in the firm, which is unfortunately very difficult, to be observed, if at all. Barth and Clinch (2000, p. 15) characterize scale as net capital infusions into firms and Easton (1998, p. 238) and Easton and Sommers (2000, p. 10) argue that the market capitalization is the appropriate measure of scale at firm level and price per share is the appropriate measure at the per share level. This is supported by the intuition that firm size is predominantly perceived in terms of market capitalization.

Econometrically speaking, when considering price-levels regressions, two concepts of interpreting scale are known. The first one treats scale like an omitted variable in the regression of interest (e.g. Barth and Kallapur, 1996, p. 530), while the second interpretation suggests that scale is the dependent variable in this kind of regressions (e.g. Easton, 1998, p. 238). To summarize, the one thing in common to all scale interpretations is that what is meant by scale is very much related to the size of an observation.

The effects resulting from scale in a levels regression are due to heteroscedasticity and nonlinearity in the relation between the dependent and the independent variables. They can be explained as follows. In general, large (small) firms have large (small) market capitalization, large (small) book value of equity and large (small) net income.⁷⁸ Many other variables for these large (small) firms will be large (small) as well. So, when running a linear levels regression a small group of large firms unduly influences the regression inferences. This influence is referred to as scale effects. Scale effects are more than just heteroscedasticity

⁷⁵ See e.g. Christie (1987), Landsman and Magliolo (1988), Kothari and Zimmerman (1995), Barth and Kallapur (1996), Easton (1998), Barth and Clinch (1998), Barth and Clinch (2000), Easton (1999), Brown, Lo and Lys (2000), Lo and Lys (2000), and Easton and Sommers (2000).

⁷⁶ When defining scale it seems to be difficult to do this without referring to scale effects et vice versa. However, as Easton and Sommers (2000, p. 14) point out, scale and scale effects are quite different phenomena.

⁷⁷ Returns studies take the market rate of return as the dependent market variable of interest, in contrast to ricelevels studies, which usually use the price per share or the market capitalization as the dependent market variable.

(Easton and Sommers, 2000, p. 27), which is a relation between the magnitude of the dependent variable and the magnitude of the residual variance. Scale effects are mainly caused by non-linearity in the relation between market and accounting variables.⁷⁹ As the nature of the classical normal linear regression model is such that it tries to minimize the sum of squared residuals (Gujarati, 1995, p. 54), only a small group of the largest observations drives the regression results. Thus, in case of non-linearity associated with size the regression coefficient estimates and the related inferences are similar to those in the sub-sample of the observations with the largest market capitalization, book value and net income (Easton and Sommers, 2000, p. 16).⁸⁰ Brown, Lo and Lys (1999, p. 107) show that the R² statistic, which is extensively used as an indicator of the value relevance in the financial accounting literature⁸¹, is also affected by the spurious effects of scale.

In order to get some meaningful research results a researcher has to make an attempt to mitigate spurious effects of scale unless they are related with the researcher's interest. There are two approaches that are commonly used to deal with spurious scale effects. The first is to introduce an additional variable representing scale into the model.⁸² The second approach estimates the regression of interest after deflating all variables by a scale proxy. Many variables have been used as scale proxies in an attempt to cure scale problems in market based accounting research. These include book value of equity, total assets, number of shares outstanding, sales, net income, market capitalization, lagged market capitalization and many more.

In this study, deflation by firm market capitalization is used to mitigate scale effects. Inclusion of a scale proxy variable is not used as this would change the economic meaning of the model and consequently the model would be pushed out the research interest area of the study. Easton and Sommers (2000, p. 10) argue that market capitalization is the best measure of scale, as the empirical literature in accounting and finance predominantly measures firm size by its market capitalization. Use of accounting numbers as proxies for scale is inferior to market capitalization as they are under the influence of various accounting policies and procedures. It is also difficult to accept number of shares outstanding to be the proxy for scale as this variable is exposed to managerial discretion. A stock split or a reverse stock split would change the scale of a firm and thus influence regression inferences while leaving firm's economic characteristics untouched (Easton, 1998, p. 263). Following this rationale, market

⁷⁸ As Easton and Sommers (2000, p. 13) note, there are some obvious shortcomings in this intuition, as it says nothing about the magnitude or the sign of the earnings variable relative to market capitalization.

⁷⁹ Here, non-linearity is understood in association with size. This means that for different size groups of firms the relation between market capitalization, book value and net income is different.

⁸⁰ Easton (1999) and Easton and Sommers (2000) prove this by performing several interesting empirical experiments. They are not described here as this would go beyond the purpose of this thesis.

⁸¹ See e.g. Collins, Maydew and Weiss (1997), and Francis and Schipper (1999).

⁸² This approach goes hand in hand with the omitted-variable-definition of scale.

capitalization provides an unbiased scale proxy and is supported by a firm theoretical justification.⁸³

After deflating variables in the basic models (B.1), (B.2), (B.3), (B.4), and (B.5) by using market capitalization, the following respective models are to be examined:

$$1 = \beta_0 \frac{1}{MV_{it}} + \beta_1 \frac{E_{it}^P}{MV_{it}} + \beta_2 \frac{BV_{it}^P}{MV_{it}} + \varepsilon_{it}$$
(BS.1)

$$1 = \beta_0 \frac{1}{MV_{ii}} + \beta_1 \frac{E_{ii}^G}{MV_{ii}} + \beta_2 \frac{BV_{ii}^G}{MV_{ii}} + \varepsilon_{ii}$$
(BS.2)

$$1 = \beta_0 \frac{1}{MV_{ii}} + \beta_1 \frac{\left(E_{ii}^G + E_{ii}^M\right)}{MV_{ii}} + \beta_2 \frac{\left(BV_{ii}^G + BV_{ii}^M\right)}{MV_{ii}} + \varepsilon_{ii}$$
(BS.3)

$$1 = \beta_0 \frac{1}{MV_{it}} + \beta_1 \frac{E_{it}^G}{MV_{it}} + \beta_2 \frac{E_{it}^M}{MV_{it}} + \beta_3 \frac{BV_{it}^G}{MV_{it}} + \beta_4 \frac{BV_{it}^M}{MV_{it}} + \varepsilon_{it}$$
(BS.4)

$$1 = \beta_0 \frac{1}{MV_{it}} + \beta_1 \frac{E_{it}^P}{MV_{it}} + \beta_2 \frac{RE_{it}^S}{MV_{it}} + \beta_3 \frac{RE_{it}^A}{MV_{it}} + \beta_4 \frac{BV_{it}^G}{MV_{it}} + \varepsilon_{it}$$
(BS.5)

The models above need some comment, in particular regarding the treatment of the intercept and the dependent variable. As it can be seen, intercepts from (B.1), (B.2), (B.3), (B.4), and (B.5) have been deflated along with other variables from these models. This has been done in order to keep the same economic meaning of the equations. Including an intercept instead of the inverse of the scale proxy or including an additional intercept into the deflated model would effectively mean that the scale proxy has been included into the model as an additional explaining variable, which consequently would change the economic characteristics of the model. In the case of deflation by market capitalization an introduction of the intercept would result in a senseless regression.

The approach of mitigating scale effects using deflation by the dependent variable, that is market capitalization, has come under harsh criticism by Barth and Clinch (2000, p. 7). They argue that earnings and book value numbers have no explanatory power, as the dependent variable is a column of 1's. Thus, if market capitalization was the "true" scale factor, "then any variation in market value of equity is uninteresting from an accounting or finance perspective" (ibid.). For this study, however, the column of 1's is very meaningful as market value is used as the benchmark for evaluating the validation of accounting numbers. In this case market capitalization seems to be the best deflator to mitigate scale effects.⁸⁴

⁸³ Actually, the sales figure could compete with market capitalization to be the best scale proxy. Easton and Sommers (2000, p. 7) provide evidence, which suggests that deflating by sales mitigates scale effects considerably. Unfortunately, the collected data, which are used in this study, do not include sales numbers.

⁸⁴ There are some related studies that perform market based accounting research by using regressions with unity as the dependent variable in order to mitigate spurious effects of scale, e.g. Easton and Sommers (2000), and

5.3.4 PRICE-EARNINGS NON-LINEARITY

Modelling of the regression relations in this study suggests that observations should be grouped into subsamples with similar attributes. Therefore, another econometric issue has to be dealt with in this thesis, namely a special type of non-linearity in the relation between market capitalization and earnings. This type of non-linearity differs from non-linearity mentioned in the previous section, where the effects of different relation between the dependent and the independent variables for different size groups were considered. Here non-linearity is about the different relation between positive earnings, i.e. profits and firm market value on the other hand. I refer to this phenomenon as the price-earnings non-linearity.

If not taken care of, price-earnings non-linearity can lead to a weak observed price-earnings association. Consequently, the R^2 of regressions examining value relevance of earnings and book value numbers can be affected. An understanding of price-earnings non-linearity and mitigating its disturbing effects is important for getting some meaningful results from an investigation of the value relevance of accounting numbers.

The phenomenon of price-earnings non-linearity can be explained as follows. Reported losses are perceived by investors as temporary. Since shareholders have always an option to liquidate the firm, negative earnings are not expected to persist indefinitely. In other words, shareholders have a put option on future cash flows of the firm. Consequently, the value of firm's equity is the higher of the present value of its expected future cash flows and its liquidation value (Hayn, 1995, p. 126, 127).⁸⁵ Eventually, the relation between the value of the firm and earnings is not linear, i.e. there is a price-earnings non-linearity. Effectively this means that firms reporting negative earnings have different earnings response coefficients than firms reporting positive earnings. The transitory nature of negative earnings and consequently non-linearity is additionally explained by the finding that the presence of conservatism in accounting results in earnings reflecting bad news more quickly or more completely than good news (Basu, 1997, p. 5).⁸⁶ When earnings are negative value relevance shifts typically from earnings to book values which is consistent with the firm's abandonment value becoming more relevant for assessing shareholder value as the firm experiences losses (Collins, Maydew and Weiss, 1997, p. 44).

Beatty, Riffe, and Thompson (1999). In order to provide a qualitative check on the robustness of this approach, also lagged market value is used as deflator in this study. Results of this approach are to be found in the appendix.

⁸⁵ Hayn (1995, p. 127) asserts that actually "losses represent only a specific case of a more general situation where the earnings signal indicates future earnings that are sufficiently low (albeit positive) as to make the liquidation option attractive".

⁸⁶ Basu (1997, p. 4) provides an illustrative example of unrealized losses being typically recognized earlier than unrealized gains.

In order to prevent unfavourable effects of price-earnings non-linearity on regression results, a dummy variable is introduced into equations (BS.1), (BS.2), (BS.3), (BS.4), and (BS.5), which consequently change into:

$$1 = \beta_0 \frac{1}{MV_{ii}} + \beta_1 D_{ii} \frac{1}{MV_{ii}} + \beta_2 \frac{E_{ii}^P}{MV_{ii}} + \beta_3 D_{ii} \frac{E_{ii}^P}{MV_{ii}} + \beta_4 \frac{BV_{ii}^P}{MV_{ii}} + \beta_5 D_{ii} \frac{BV_{ii}^P}{MV_{ii}} + \varepsilon_{ii}$$
(BSE.1)

$$1 = \beta_0 \frac{1}{MV_{ii}} + \beta_1 D_{ii} \frac{1}{MV_{ii}} + \beta_2 \frac{E_{ii}^G}{MV_{ii}} + \beta_3 D_{ii} \frac{E_{ii}^G}{MV_{ii}} + \beta_4 \frac{BV_{ii}^G}{MV_{ii}} + \beta_5 D_{ii} \frac{BV_{ii}^G}{MV_{ii}} + \varepsilon_{ii}$$
(BSE.2)

$$1 = \beta_{0} \frac{1}{MV_{ii}} + \beta_{1}D_{ii} \frac{1}{MV_{ii}} + \beta_{2} \frac{\left(E_{ii}^{G} + E_{ii}^{M}\right)}{MV_{ii}} + \beta_{3}D_{ii} \frac{\left(E_{ii}^{G} + E_{ii}^{M}\right)}{MV_{ii}} + \beta_{4} \frac{\left(BV_{ii}^{G} + BV_{ii}^{M}\right)}{MV_{ii}} + \beta_{5}D_{ii} \frac{\left(BV_{ii}^{G} + BV_{ii}^{M}\right)}{MV_{ii}} + \varepsilon_{ii}$$
(BSE.3)

$$1 = \beta_{0} \frac{1}{MV_{u}} + \beta_{1}D_{u} \frac{1}{MV_{u}} + \beta_{2} \frac{E_{u}^{G}}{MV_{u}} + \beta_{3}D_{u} \frac{E_{u}^{G}}{MV_{u}} + \beta_{4} \frac{E_{u}^{M}}{MV_{u}} + \beta_{5}D_{u} \frac{E_{u}^{M}}{MV_{u}} + \beta_{6} \frac{BV_{u}^{G}}{MV_{u}} + \beta_{7}D_{u} \frac{BV_{u}^{G}}{MV_{u}} + \beta_{8} \frac{BV_{u}^{M}}{MV_{u}} + \beta_{9}D_{u} \frac{BV_{u}^{M}}{MV_{u}} + \varepsilon_{u}$$
(BSE.4)

$$1 = \beta_{0} \frac{1}{MV_{u}} + \beta_{1} D_{u} \frac{1}{MV_{u}} + \beta_{2} \frac{E_{u}^{P}}{MV_{u}} + \beta_{3} D_{u} \frac{E_{u}^{P}}{MV_{u}} + \beta_{4} \frac{RE_{u}^{S}}{MV_{u}} + \beta_{5} D_{u} \frac{RE_{u}^{S}}{MV_{u}} + \beta_{6} \frac{RE_{u}^{A}}{MV_{u}} + \beta_{7} D_{u} \frac{RE_{u}^{A}}{MV_{u}} + \beta_{8} \frac{BV_{u}^{G}}{MV_{u}} + \beta_{9} D_{u} \frac{BV_{u}^{G}}{MV_{u}} + \varepsilon_{u}$$
(BSE.5)

respectively, where

$$D_{it} = \begin{cases} 1, & E_{it}^G < 0\\ 0, & E_{it}^G \ge 0 \end{cases}$$

5.4 THE SAMPLE

The sample is taken out of a population of non-financial firms quoted at the London Stock Exchange for the time range between 1989 up to and including 2000. The initial sample of 1955 observations was obtained from two sources. The accounting data were collected from every individual firm's financial reports available on the Global Access⁸⁷, while the market data, i.e. share prices were obtained from FT Extel Company Analysis.

After excluding cases with accounting information denominated in Irish pounds the missing values have been replaced by zero. This is justified by the fact that this master thesis is intended to investigate the value relevance of the current practice of presenting financial information. Thus, it is assumed that an accounting variable not shown in firm's reported financial statements does not enhance information available to investors, i.e. it is perceived by them to have a value of zero. Data were then deflated by the end of reporting period market value, i.e. the end of period price per share times number of shares outstanding. As usual for these types of studies, to control for the effect of the extreme values the top and bottom one

⁸⁷ The database can be found at URL: http://www.primark.com/ga/.

percent of the basic three variables, i.e. the inverse of the market value, group earnings and group book value of equity, are excluded.⁸⁸

This results in a final sample consisting of 326 companies providing 1838 firm-year observations. Almost all of the firm-year cases, namely 1831, do have subsidiary undertakings and 942 of them face minority interest holdings. 883 of the firm-year observations are identified to have associated undertakings⁸⁹, while 801 have other long-term investments.

At first sight, to some readers the sample not containing minority interest numbers and associated undertakings numbers, i.e. having values of zero, for all of the observations might appear a bit strange. While it is true that this study investigates accounting concepts that differ mainly in the way they understand and treat minority interest, the study tries to find an answer to the research question in a more general fashion. The presence of minority interest holdings is often determined by industry and firm specific factors of historical and economic nature. In my opinion, accounting regulations ought to be designed in a way that suits best the whole economy. Thus, firms not facing minority interest holdings are part of the U.K. economic reality that has to be taken into account when searching for the appropriate accounting concept.

Descriptive statistics and a correlation matrix for the model variables are to be found in Tables 1 and 2, respectively (See p. 56).

⁸⁸ An extreme value often called an outlier is an observation that appears to deviate markedly from other members of the sample in which it occurs (Grubbs, 1969, p. 2). An outlier can arise for different reasons. Barnett and Lewis distinguish three of these (1994, p. 33):

[•] *Inherent variability*. This is an expression of how observations vary within/over the population. It is uncontrollable and reflects the distributional properties of a correct basic model describing the generation of the data.

[•] *Measurement error*. A further source of variability is due to errors made by taking physical measurements on members of a population under study. Part of the measurement error variability is due to rounding of obtained values and mistakes in recording.

[•] *Execution error*. Another source of variability arises because of imperfect collection of the data. The sample in question could be biased or could include individual units not truly representative of the population that was intended to be analyzed with the help of the sample.

A number of techniques to control for the effect of outlying observations is discussed in Barnet and Lewis (1994). The approach imposed in this master thesis is normal in these types of study (Abad et al, 2000, p. 170).

⁸⁹ Including any joint ventures.

	$\frac{E_{it}^{G}}{MV_{it}}$	$\frac{BV_{it}^{G}}{MV_{it}}$	$\frac{E_{it}^{P}}{MV_{it}}$	$\frac{BV_{it}^{P}}{MV_{it}}$	$\frac{E_{it}^{G} + E_{it}^{M}}{MV_{it}}$	$\frac{BV_{it}^{G} + BV_{it}^{M}}{MV_{it}}$	$\frac{E_{it}^{MI}}{MV_{it}}$	$\frac{BV_{it}^{MI}}{MV_{it}}$	$\frac{RE_{it}^{s}}{MV_{it}}$	$\frac{RE_{it}^{A}}{MV_{it}}$	$\frac{1}{MV_{ii}}$
Mean	0,03631	,6045	0,03928	,6391	0,03832	,6206	0,002005	0,01614	0,001573	0,000976	3,626E-08
Median	0,06396	,4844	0,03873	,4935	0,06547	,4982	,0000	,0000	0,01993	,0000	7,752E-09
Std. Deviation	,1546	,5200	,1448	,5579	,1552	,5336	0,007034	0,05371	,1357	0,007470	8,651E-08
Skewness	-4,278	1,828	-2,178	2,350	-4,242	1,881	4,894	6,424	-2,983	,607	5,572
Std. Error of Skewness	,057	,057	,057	,057	,057	,057	,057	,057	,057	,057	,057
Kurtosis	24,835	5,470	38,896	9,542	24,596	5,822	40,938	55,909	27,467	122,493	42,900
Std. Error of Kurtosis	,114	,114	,114	,114	,114	,114	,114	,114	,114	,114	,114
Minimum	-1,26	-,60	-1,53	-,34	-1,26	-,60	-,05	-,03	-1,43	-,13	,00
Maximum	,38	3,58	1,38	6,06	,42	4,11	,09	,80	1,06	,13	,00
Observations	1838	1838	1838	1838	1838	1838	1838	1838	1838	1838	1838

Table 1. Summary Statistics for Variables Used in the Regression Models

Source: Calculation.

Table 2. Correlation Matrix for Variables Used in the Regression Models

	$\frac{E_{it}^{G}}{MV_{it}}$	$\frac{BV_{it}^{G}}{MV_{it}}$	$\frac{E_{it}^{P}}{MV_{it}}$	$\frac{BV_{it}^{P}}{MV_{it}}$	$\frac{E_{it}^{G} + E_{it}^{M}}{MV_{it}}$	$\frac{BV_{it}^{G} + BV_{it}^{M}}{MV_{it}}$	$\frac{E_{it}^{M}}{MV_{it}}$	$\frac{BV_{it}^{MI}}{MV_{it}}$	$\frac{RE_{it}^{S}}{MV_{it}}$	$\frac{RE_{it}^{A}}{MV_{it}}$	$\frac{1}{MV_{it}}$
$\frac{E_{it}^{G}}{MV_{it}}$	1,000										
$rac{BV_{it}^{G}}{MV_{it}}$,028	1,000									
$\frac{E_{it}^{P}}{MV_{it}}$,546	,032	1,000								
$\frac{BV_{it}^{P}}{MV_{it}}$	-,183	,578	-,008	1,000							
$\frac{E_{it}^{G} + E_{it}^{MI}}{MV_{it}}$,999	,032	,545	-,180	1,000						
$\frac{BV_{it}^{G} + BV_{it}^{MI}}{MV_{it}}$,025	,995	,029	,578	,032	1,000					
$\frac{E_{ii}^{MI}}{MV_{ii}}$,062	,088	,026	,050	,107	,150	1,000				
$\frac{BV_{it}^{MI}}{MV_{it}}$	-,019	,205	-,027	,146	,010	,300	,630	1,000			
$\frac{RE_{it}^{s}}{MV_{it}}$,496	,004	-,412	-,169	,496	,004	,040	,006	1,000		
$rac{RE_{it}^{A}}{MV_{it}}$,090	,100	,089	,065	,096	,102	,155	,049	-,044	1,000	
$\frac{1}{MV_{it}}$	-,224	,292	-,120	,304	-,226	,280	-,049	-,046	-,124	,031	1,000

Source: Calculation.

5.5 EMPIRICAL EVIDENCE

Results of the empirical value relevance analysis are presented in Tables 3-9. For each of the models the estimated unstandardized regression coefficients, their OLS standard errors⁹⁰, significances⁹¹ as well as standardized beta coefficients⁹² are reported. Besides, for each of the models the adjusted R^2 of the model is reported.

5.5.1 THE THREE MODELS

5.5.1.1 The Parent-Company-Information Model

The parent-company-information model (BSE.1) results are to be found in Panel A of Table 3 (See p. 58). Model results show an adjusted R^2 of 0,609 which indicates moderately high information content of explanatory variables used in the model.

Regression coefficients for observations with non-negative group earnings are as follows: The estimated earnings and book value unstandardized regression coefficients are both significant and positive. This indicates that these figures capture some of the information that affected the share price positively. In contrast, the value relevance of other information not disclosed in the parent accounts is insignificant. The respective standardized beta coefficients reveal that it is the parent company book value number that carries the most value relevant information among the variables used in the parent-company-information model.

Regression coefficients for observations with negative group earnings reveal as follows: Parent company earnings are much less value relevant in the case of negative group earnings as the respective unstandardized regression coefficient slips slightly below zero as compared to the earnings regression coefficient of 1,275 when group earnings are positive. The estimated parent company book value regression coefficient remains positive and the respective standardized beta coefficient shows that parent company book value is the most value relevant variable. However, its information content in terms of the beta coefficient is lower compared to the beta of 0,783 when group earnings are positive. The only variable that becomes more value relevant compared to its positive group earnings counterpart is the other information variable, which in case of negative group earnings becomes more significant. Besides, the corresponding regression coefficient and the standardized beta coefficient become positive on average suggesting a positive influence of other information on the firm's share price in times when group earnings are negative.

⁹⁰ Unfortunately White standard errors are not reported, as the statistical software package – SPSS for Windows, Release 8.0.0, which was used to run the regressions, does not provide them.

⁹¹ Significance level of 1% is taken as the benchmark for significance of regression coefficients.

⁹² Beta coefficients, sometimes called standardized regression coefficients, are the regression coefficients when all variables are expressed in standardized (z-score) form. Transforming the independent variables to standardized form makes the coefficients more comparable since they are all in the same units of measure.

Panel A: T	The parent-company-	-information model ((BSE.1)		
$1 = \beta_0 \frac{1}{1} + \beta_0$	$\beta_1 D_u \frac{1}{1 + m} + \beta_2 \frac{E_u^p}{m} + \beta_3 D_u$	$\frac{E_{i}^{P}}{E_{i}} + \beta_{4} \frac{BV_{i}}{E_{i}} + \beta_{5} D_{ii} \frac{BV_{i}}{E_{i}}$	$\frac{V_{ii}}{V_{ii}}^{p} + \varepsilon_{ii}$	Adjusted R ²	0,609
MV _{it}	MV _{ii} MV _{ii}	MV_{ii} MV_{ii} M	ν _μ	No. of observations	1838
	Unstandardiz	ed Coefficient	Standard Error	Significance	Standardized Coefficient Beta
β0	-91539,444		253352,412	,718	-,009
β_1		1203090,436	357954,830	,001	,080
β_2	1,275		,162	,000	,191
β_3		-1,278	,216	,000	-,137
β_4	,923		,027	,000	,783
β5		-,377	,044	,000	-,182
Panel B: T	The proportionate con	nsolidation model (E	3SE.2)		
$=\beta_0 \frac{1}{1} + \beta_0$	$\beta_1 D_{ii} \frac{1}{1} + \beta_2 \frac{E_{ii}^G}{E_{ii}} + \beta_3 I$	$D_{\mu} \frac{E_{\mu}^{G}}{B_{\mu}} + \beta_{4} \frac{BV_{\mu}^{G}}{B_{\mu}} + \beta_{5} D_{\mu}$	$\frac{BV_{ii}^{G}}{BW_{ii}} + \varepsilon_{ii}$	Adjusted R ²	0,726
MV _{it}	MV _{it} MV _{it}	MV _{it} MV _{it}	MV _{it}	No. of observations	1838
	Unstandardiz	Significance	Standardized Coefficient Beta		
β_0	-412349,130		211731,917	,052	-,039
β_1		1076652,131	306365,421	,000	,071
β_2	6,563		,231	,000	1,042
β3		-7,558	,256	,000	-1,003
β₄	,398		,030	,000,	,317
β5		8.148E-02	.048	.090	.032
Panel C: T	The economic unit m	odel (BSE.3)	<u>,</u> , ,	,	,
$=\beta_0 \frac{1}{MV_0} + \beta_1$	$D_{ii} \frac{1}{MV_{a}} + \beta_2 \frac{\left(E_{ii}^G + E_{ii}^{M}\right)}{MV_{a}} + \beta_3$	$D_{ii} \frac{\left(E_{ii}^{G} + E_{ii}^{M}\right)}{MV} + \beta_4 \frac{\left(BV_{ii}^{G} + E_{ii}^{M}\right)}{MV}$	$\left(\frac{M}{a}\right) + \beta_{s} D_{a} \left(\frac{BV_{a}^{G} + E_{a}^{M}}{MV_{a}}\right) + \varepsilon_{a}$	Adjusted R ²	0,726
/ it	u u	u ava ju	····· it	No. of observations	1838
	Unstandardiz	zed Coefficient	Standard Error	Significance	Standardized Coefficient Beta
β ₀	-294292,190		210801,200	,163	-,028
β_1		987211,713	305272,992	,001	,065
β_2	6,463		,228	,000	1,033
0		-7,441	,253	,000	-,986
β_3					
β ₃ β ₄	,372		,030	,000	,304

Table 3. Results of Regression Models (BSE.1), (BSE.2), and (BSE.3)

Source: Calculation.

5.5.1.2 The Proportionate Consolidation Model

The proportionate consolidation model (BSE.2) results are to be found in Panel B of Table 3. The adjusted R^2 for this model is 0,726, which implies a high information content of explanatory variable used in the model.

Regression coefficients for observations with non-negative group earnings are as follows: The estimated group earnings and group book value regression coefficients are significant. Their

positive value suggests that they capture information that affects the share price positively. The other information regression coefficient is insignificant. The respective standardized beta coefficients reveal that it is the consolidated group earnings that is the most value relevant variable in the model. The group book value's value relevance is lower, while the other information's value relevance is negligible.

Regression coefficients for observations with negative group earnings are as follows: The estimated regression coefficient for information not disclosed in group accounts is positive and at least more significant than its non-negative group earnings counterpart. This means that in case of negative group earnings non-accounting information becomes value relevant and influences the firm's share price positively on average. The same can be concluded by looking at the corresponding standardized beta coefficient. The estimated group earnings regression coefficient is negative and earnings value relevance drops dramatically compared to when group earnings are not negative. The most value relevant variable when group earnings are negative is group book value of equity. Its response coefficient is not significantly different from its non-negative group earnings counterpart.

5.5.1.3 The Economic Unit Model

The economic unit model (BSE.3) results are to be found in Panel C of Table 3 (See p. 58). The adjusted R^2 statistic for this model is 0,726, which implies a high information content of explanatory variables included in the model.

Regression coefficients for observations with non-negative group earnings are as follows: The estimated earnings and book value regression are both significantly different from zero and positive. This implies that these two items tend to capture information that affects the share price positively. However, the estimated other information regression coefficient is insignificant. Beta coefficients show that earnings that are the most value relevant variable in the model, while book value carries some information that is mirrored in the firm's share price but still less than the earnings variable.

The estimated regression coefficients for observations with negative group earnings are as follows: The regression coefficient for information not disclosed in the economic unit's financial reports becomes more significant than its respective non-negative earnings counterpart. Here again non-accounting information is on average more value relevant than in the non-negative group earnings case. The estimated earnings regression coefficient is negative and less value relevant than book value whose value relevance doesn't change compared to its respective non-negative earnings counterpart.

5.5.1.4 Comparison of the Three Models

In this section, models (BSE.1), (BSE.2) and (BSE.3) are being compared with each other in terms of value relevance. This is done by comparing the respective adjusted R^2 statistics of

the competing models and by examining the Vuong test results. The Vuong test results and a summary of the adjusted R^2 statistics can be found in Table 4 below.

Adjusted R^2 figures in Panel A of Table 4 suggest that in terms of value relevance consolidated accounting information is superior to unconsolidated accounting information. The reason for a lower R^2 of the unconsolidated model may lie in the fact that investors know that it is not only the parent company *per se* they own by owning the firm's shares and thus understand that parent company earnings and parent company book value are by far not the only flow and stock that affect the value of their shares. While the R^2 issue of consolidated versus unconsolidated accounting information appears to be straightforward, the respective R^2s of the proportionate consolidation model and the economic unit model however cannot be declared as different. Therefore, comparison of determination concepts is the most value relevant.

Panel A: Adjusted R ² statistics for models (BSE.1), (BSE.2) and (BSE.3)						
	Adjusted R ²					
Parent-company-information model	0,609					
Proportionate consolidation model	0,726					
Economic unit model	0,726					
Panel B: Vuong test results: a significan model 1	t positive Z-statistic indicates that	model 2 is rejected in	n favour of			
Comparison of the value relevance of model 1 vs. t	he value relevance of model 2	Vuong's Z-statistic	Significance			
Proportionate consolidation model vs. Parent-com	pany-information model	9,67	0,000			
Economic unit model vs. Parent-company-information	9,32	0,000				
Economic unit model vs. Proportionate consolidati	-0.17	0.433				

 Table 4. Comparison of the Three Models

Source: Calculation.

The Vuong test results are to be found in Panel B of Table 4. The first column of the panel describes which models are being compared. In the second column of the panel respective calculated Vuong's Z-statistics are presented and in the third column there are the respective significances. If a significance is below the 5% margin it means that one of the two models that are being compared is more value relevant than the other. In the case a significance is over this margin neither of the models can be identified to be more relevant than the other. A positive Vuong's Z-statistic would suggest that the first of the two models is more value relevant and a negative Z would indicate the inverse.

Again, looking at the results both consolidation concepts turn out to be significantly more value relevant than unconsolidated accounting information. Unfortunately, also the Vuong test does not identify a winner among the two competing consolidation approaches as the

respective Z-statistic is not significantly different from zero. Possible explanations for this outcome are subsequently discussed in section 5.5.1.7.

5.5.2 THE U.K. MODEL

The U.K. model (BSE.4) represents a check on the robustness of the results from the earlier two consolidation models. Results of this model are to be found in Table 5 below. The adjusted R^2 statistic of this model is 0,727 and is similar to both R^2 s of consolidation models that have already been tested. This does not come surprisingly as both (BSE.2) and (BSE.3) represent two special cases of the U.K. model (BSE.4).

Regression coefficients for observations with non-negative group earnings are as follows: The estimated regression coefficient for group earnings and for group book value are both positive and significant indicating a theoretically sound positive relation with the firm's share price. The corresponding beta coefficients reveal that group earnings are the most value relevant variable in the model with group book value to be the second most value relevant variable in the model. Both minority interest regression coefficients are statistically insignificant and the corresponding beta coefficients indicate a negligible value relevance compared to the value relevance of group numbers. The other information regression coefficient is insignificant implying that information not disclosed in the accounts has a negligible value relevance when group earnings are positive.

$1 = \beta_{0} \frac{1}{MV_{u}} + \beta_{1}D_{u} \frac{1}{MV_{u}} + \beta_{2} \frac{E_{u}^{G}}{MV_{u}} + \beta_{3}D_{u} \frac{E_{u}^{G}}{MV_{u}} + \beta_{4} \frac{E_{u}^{M}}{MV_{u}} + \beta_{5}D_{u} \frac{E_{u}^{M}}{MV_{u}} + \beta_{6} \frac{BV_{u}^{G}}{MV_{u}} + \beta_{7}D_{u} \frac{BV_{u}^{G}}{MV_{u}} + \beta_{8} \frac{BV_{u}^{M}}{MV_{u}} + \beta_{9}D_{u} \frac{BV_{u}^{M}}{MV_{u}} + \varepsilon_{u}$							
Adju	Adjusted R ²		No. of obser	vations	1838		
	Unstandardize	ed Coefficient	Standard Error	Significance	Standardized Coefficient Beta		
βο	-369400,234		212794,539	,083	-,035		
β_1		1081288,150	308343,012	,000	,072		
β_2	6,533		,233	,000	1,038		
β3		-7,502	,258	,000	-,996		
β_4	2,661		2,774	,338	,019		
β5		7,756	5,456	,155	,021		
β_6	,387		,031	,000	,308		
β_7		7,294E-02	,050	,147	,028		
β_8	,174		,387	,653	,010		
β9		,373	,639	,560	,010		

Table 5. Regression Results of the U.K. Model (BSE.4)

Source: Calculation.

Regression coefficients for observations with negative group earnings are as follows: The estimated group earnings regression coefficient is negative. Its beta coefficient shows a substantial drop in value relevance of group earnings when they become negative. The estimated regression coefficient and the beta coefficient for group book value reveal no significant change in value relevance of group book value compared to its counterpart when

group earnings are non-negative. Thus, group book value becomes the most value relevant number. Both minority interest numbers remain insignificant in terms of value relevance, as their respective regression coefficients are statistically insignificant. The estimated regression coefficient for information not disclosed in financial reports is significant and positive, implying a positive influence on firm's share price in times when group earnings are negative. The respective beta coefficient shows that its value relevance is small compared to the value relevance of group book value.

H _o : H ₁ :	$\beta_2 = \beta_4$ $\beta_2 \neq \beta_4$	$\beta_6 = \beta_8$ $\beta_6 \neq \beta_8$	$\beta_3 = \beta_5$ $\beta_3 \neq \beta_5$	$\beta_7 = \beta_9$ $\beta_7 \neq \beta_9$
t-statistics	1,375	0,538	-2,787	-0,456
Significance	0,169	0,591	0,005	0,647

Table 6. Results of Equality of Regression Coefficients Tests for the U.K. Model (BSE.4)

Source: Calculation.

Recall, that it is an advantage of this model to allow the testing whether minority interest numbers should be represented either as prescribed by U.K. accounting regulation, or as part of the economic unit figures, or totally excluded from financial reporting. This is done by testing the equality of regression coefficients. Results of these tests are to be found in Table 6. The results indicate that the estimated group regression coefficients do not significantly differ from the respective estimated minority interest regression coefficients. This finding implies that minority interest earnings and group earnings can be presented as one number and minority interest book value and group book value can be presented as one item in financial reports and at the same time no value relevant information is lost. This gives an indication that the economic unit approach might be more value relevant than the proportionate approach.

5.5.3 THE EXTENT-OF-CONTROL MODEL

Results of the extent-of-control model (BSE.5) are to be found in Table 7 (See p. 63). The adjusted R^2 statistic for this model is 0,708, implying a high information content of explanatory variables.

Regression coefficients for observations with non-negative group earnings are as follows: The estimated regression coefficients for parent earnings, residual subsidiary earnings and for group book value are all significant and positive consistent with theoretical foundations of company valuation. Their beta coefficients reveal that parent company earnings and residual subsidiary earnings are the most value relevant variables in the model followed by the consolidated group book value of equity. The estimated regression coefficient for residual earnings from associated undertakings is insignificant at the 0,01 level. Its beta coefficient is negligibly low compared to respective betas of the other two earnings variables, suggesting that investors do not appreciate the equity method when it comes to associated undertakings.

The other information regression coefficient is insignificant and its beta coefficient reveals a negligible value relevance of this variable.

$1 = \beta_0 - \frac{M}{M}$	$\frac{1}{W_{ii}} + \beta_1 D_{ii} \frac{1}{MV_{ii}} + \beta_2 \frac{E}{MV_{ii}}$	$\frac{P}{M_{ii}} + \beta_3 D_{ii} \frac{E_{ii}}{M_{ii}} + \beta_4 \frac{RE}{M_{ii}}$	$\frac{\frac{S}{it}}{V_{it}} + \beta_5 D_{it} \frac{RE_{it}}{MV_{it}} + \beta_6 \frac{RE_{it}^A}{MV_{it}}$	$-+\beta_7 D_{ii} \frac{RE_{ii}^{A}}{MV_{ii}} + \beta_8 \frac{BV_{ii}}{MV_{ii}}$	$\int_{a}^{b} + \beta_{9} D_{ii} \frac{BV_{ii}^{G}}{MV_{ii}} + \varepsilon_{ii}$
Adji	usted R ²	0,708	No. of obser	vations	1838
	Unstandardize	ed Coefficient	Standard Error	Significance	Standardized Coefficient Beta
β ₀	-499501,531		219057,720	,023	-,047
β_1		1252263,220	318739,384	,000	,083
β_2	5,723		,230	,000	,858
β3		-6,282	,268	,000	-,671
β_4	5,829		,248	,000	,791
β_5		-7,014	,286	,000	-,728
β_6	5,387		2,217	,015	,041
β_7		-8,954	3,485	,010	-,043
β_8	,454		,031	,000	,362
β9		4,331E-02	,049	,380	,017

Table 7. Regression Results of the Extent-of-Control Model (BSE.5)

Source: Calculation.

Regression coefficients for observations with negative group earnings are as follows: The estimated regression coefficients for parent earnings, residual subsidiary earnings and residual earnings from associated undertakings are all significant and the respective beta coefficients all drop suggesting a fall in their value relevance as opposed to their non-negative group earnings counterparts. The group book value regression coefficient does not change significantly compared to when group earnings are not negative. Thus, the consolidated group book value is the most value relevant variable in the negative group earnings part of the model. Information not presented in the consolidated group financial reports becomes significant and positive indicating a positive influence on the firm's share price in times when group earnings are negative. Its beta coefficient reveals that the other information variable improves in its value relevance compared to cases when group earnings are non-negative.

 Table 8. Results of Equality of Regression Coefficients Tests for the Extent-of-Control Model (BSE.5)

H _o : H ₁ :	$\beta_2 = \beta_4$ $\beta_2 \neq \beta_4$	$\beta_2 = \beta_6$ $\beta_2 \neq \beta_6$	$\beta_4 = \beta_6$ $\beta_4 \neq \beta_6$	$\beta_3 = \beta_5$ $\beta_3 \neq \beta_5$	$\beta_3 = \beta_7$ $\beta_3 \neq \beta_7$	$\beta_5 = \beta_7$ $\beta_5 \neq \beta_7$
t-statistics	-0,698	0,151	0,200	3,405	0,763	0,556
Significance	0,485	0,880	0,842	0,001	0,446	0,578

Source: Calculation.

Recall that the extent-of-control model (BSE.5) is designed with the aim to provide an answer to the following question: Are the distinctions in the accounting presentation the three different types of investment adequate in terms of value relevance or not? Similarly as in the previous section, this is done by testing the equality of regression coefficients. Results of these tests are to be found in Table 8 (See p. 63). The results for the non-negative-groupearnings part of the model reveal that none of the pairs of the different types of earnings stemming from different types of investments that are being compared show statistically significant differences. This stresses the value relevance of the consolidated group earnings. Results of testing the equality of incremental regression coefficients for negative-groupearnings part of the model reveal a statistically significant difference between the incremental regression coefficients of parent company earnings and residual subsidiary earnings. This result implies that when group earnings are negative, investors value distinct accounting methods for investments and subsidiaries.

5.5.4 INTERPRETATION OF RESULTS

5.5.4.1 Value Relevance of Variables in the Models

In all consolidated accounting information models the value relevance characteristics of the basic explanatory variables, namely earnings, book value and other information, tend to be the same. When group earnings are non-negative the value relevance of earnings is predominantly higher than the value relevance of the remaining explanatory variables. Negative group earnings however adversely affect the value relevance of earnings. Inversely, the relative importance of book value is lower when group earnings are positive but higher when group earnings are negative. These findings are consistent with the findings of recent financial accounting literature.⁹³ The explanation for the value relevance of earnings and book value moving inversely to one another is that book value serves as a proxy for the firm's abandonment option. Namely, when a firm experiences losses or financial distress the firm's abandonment value becomes more value relevant for assessing shareholder value. As book values tend to be more closely related with firms' abandonment values than are earnings, in times of negative earnings book value becomes more value relevant (Collins, Maydew and Weiss, 1997, p. 44).

The other information variable's value relevance also moves inversely to the value relevance of earnings. When group earnings are non-negative, the other information's explanatory power is insignificant while when group earnings are negative other information tends to have a significant positive influence on shareholder value. The following explanation is suggested: When group earnings are positive on average all the good news that relevantly influences the firm's share price positively is already contained and summarized in earnings and book value. However, when group earnings are negative then conservatism rules. Certain information however affects shareholder value positively and is not contained in accounting figures due to conservatism. This explanation is consistent with Basu (1997, p. 15) who argues that in conservative accounting systems firms are obliged to incorporate bad news into earnings more

⁹³ See e.g. Basu (1997), Berger, Ofek and Swary (1996), Burgstahler and Dichev (1997), Collins, Maydew and Weiss (1997), Elliot and Hanna (1996), Hayn (1995).

quickly than good news, and with Hayn (1995, p. 141) who suggests that shareholders have always an option of liquidating the firm and thus losses cannot persist indefinitely.

5.5.4.2 Value Relevance of Consolidated vs. Unconsolidated Accounting Information

Value relevance of consolidated versus unconsolidated accounting information has been assessed by comparing R^2 statistics of models (BSE.1), (BSE.2), and (BSE.3), by the Vuong test, and by examining the extent-of-control model (BSE.5). All three tests point out to the same conclusion. The R^2 figures of the two consolidation models are notably higher of the R^2 of the model representing parent company information, thus providing a rule-of-thumb indication that consolidated accounts are more value relevant than unconsolidated accounts. The indication is firmly proved by the Vuong test results showing that both consolidation models are significantly closer to the true data generation process than model (BSE.1). Regression results of the extent-of-control model (BSE.5) further confirm this finding by implying that investors value the disclosure of total subsidiary earnings in the group accounts as opposed to only dividends from subsidiaries in the parent company accounts. Altogether, it can be concluded that consolidated accounts tend to capture more information that affects the share price than do the parent company accounts.

However, model (BSE.1) indicates that parent company accounting information is not value irrelevant. Furthermore, model (BSE.5) shows that particularly in times of negative group earnings separate reporting of parent accounting information is valued by investors.

5.5.4.3 Value Relevance of the Competing Consolidation Concepts

The search for the most value relevant consolidation model is central to this study. The comparison of R^2 statistics of the proportionate consolidation model (BSE.2) and the economic unit model (BSE.3) provides no indication in regard to which of the two models is more value relevant. Furthermore, the Vuong test comparing these two models does not reject the null hypothesis that the models are equally close to the true data generation process.

Regression results of the U.K. model (BSE.4) imply insignificance and hence value irrelevance of the minority interest items. This finding eventually explains why the Vuong test could not differentiate between (BSE.2) and (BSE.3), as the difference between the proportionate and the economic unit earnings and between the proportionate and the economic unit book value figures is represented by corresponding minority interest figures, which are insignificant.

One of the possible explanations for minority interest items being value irrelevant may be that on average minority interest holdings represent such a small fraction of a group that they are on average neglected by investors.⁹⁴ This explanation is supported by very high Pearson

⁹⁴ The reason for this may lie in the UK legal environment that on one hand discourages partial takeovers (Farrar et al., 1998, p. 595) and on the other hand cannot efficiently ensure minority interest protection (see Miller,

correlation between the proportionate consolidation and the economic unit earnings, and between the proportionate consolidation and the economic unit book value (see Table 2 on p. 53). Furthermore, value relevance of the competing consolidation concepts might be industry specific. This is analyzed later on in section 5.5.5.

Altogether, value relevance analysis did not provide firm evidence for any of the consolidation concepts being more value relevant than the others. However, equality tests show that in the U.K. model (BSE.4) the corresponding group and minority interest regression coefficients are not significantly different, indicating that they should be represented by one number. In other words, they should be valued on the same basis. This gives an indication that the entity approach might be more valuable to investors than the proportionate approach. Despite being insignificant, in terms of value relevance minority interest figures might make sense as part of the economic unit numbers.

5.5.4.4 Value Relevance of the Three Distinct Levels of Investment

The extent-of-control model (BSE.5) provides insight into the appropriateness of different accounting methods used for the three distinct levels of investment. Regression results show that not only the dividend from subsidiaries but also the total group's share of subsidiary earnings is value relevant. However, when group earnings are positive investors do not seem to value the equity method as currently prescribed when it comes to associated undertakings, suggesting that equity earnings from associates are perceived as unrealized earnings. Interest in associates is thus considered to be rather financial in nature. In contrast, when group earnings are negative, investors seem to value the equity method being used for consolidating associates.

Results also show that when group earnings are positive, the three earnings regression coefficients are not significantly different. This indicates that in good times investors seem to be interested only in summary information that is captured in the group earnings variable. In case of negative group earnings, however, parent earnings and residual subsidiary earnings regression coefficients are significantly different. Thus, in bad times investors tend to be more cautious and value more detailed accounting information.

5.5.5 INDUSTRY GROUP ANALYSIS

Results of the industry group subsamples analysis are to be found in the Appendix E. There are eight industry groups as shown in Table 9 (See p. 67). Value relevance characteristics of the basic variables in the models are consistent with the aggregate sample analysis. When group earnings are non-negative, earnings represent the most value relevant variable whereas

^{1999,} p. 582). This also may explain why minority interest holdings exist in just over a half of the sample observations.

when group earnings are positive book value is the most value relevant variable. The other information variable's value relevance tends to be industry specific.

In all industry groups, consolidated accounting information tends to be more value relevant than unconsolidated accounting information. Table 9 lists which of the consolidation concepts is the most value relevant for each of the industry groups. The second column of Table 9 shows which of the consolidation concepts is the most value relevant according to the Vuong test results. The third column of Table 9 presents which of the consolidation concepts is indicated to be the most value relevant according to the U.K. model (BSE.4).

Table 9. Summary of the Most Value Relevant Consolidation Concept Choice for Industry Groups

Industry Group	TheVoung Test Choice	The U.K. Model Indication
A: Construction and building materials	No choice	Economic unit
B: Energy	Economic unit	Economic unit
C: Engineering and machinery	No choice	Economic unit
D: Supermarkets and telecom	Economic unit	Economic unit
E: Household goods and textiles	No choice	Economic unit
F: Software and computer services	No choice	The U.K. model
G: Non-cyclical consumer goods	Proportionate consolidation	The U.K. model
H: Cyclical service industries	No choice	Economic unit

Source: Calculation.

Industry group results indeed show that value relevance of the competing consolidation concepts is industry specific. However, in five out of eight industry groups the Vuong test could not choose between the proportionate consolidation and the economic unit concept. The U.K. model (BSE.4) analysis thereafter in all cases indicated that the entity theory might be more value relevant than the parent company theory.

5.5.6 EMPIRICAL RESULTS AND THE U.K. ACCOUNTING PRACTICE

The aggregate sample Vuong tests provide no choice between the proportionate consolidation and the economic unit concept. This tends to be caused by the minority interest items being irrelevant in general. However, the industry group analysis reveals that in some cases the minority interest figures are value relevant and in these cases the U.K. model is indicated to be the value relevant model of choice. From this perspective, therefore, the U.K. model tends to be the best practical solution from the bunch of the models examined, as it covers cases when minority interest is value relevant as well as cases where it is irrelevant. Results also indicate that group and minority interest items should be valued on the same basis, which supports the U.K. accounting practice as currently prescribed.

Regarding the three levels of investment, sample results show that investors generally value the line-by-line consolidation of subsidiaries. For associates the cost method is appreciated rather than the equity method when group earnings are positive, whilst in bad times investors value the prescribed equity method. Besides, industry group results show that in some cases the equity method is valuable even when group earnings are positive. Sample results also reveal that especially in bad times investors tend to value more detailed disclosure, as parent earnings and residual subsidiary earnings are valued differently. All these findings are supportive of the U.K. accounting practice prescribing the preparation of both, parent and consolidated accounts.

6 ACCOUNTING REGULATION IN SLOVENIA & CONSOLIDATION ISSUES

6.1 INTRODUCTION

For almost a decade financial reporting in Slovenia has been regulated by the seventh chapter of the Companies Law (1993)⁹⁵ and the old Slovene Accounting Standards (1993).⁹⁶ Consolidation issues are dealt with in the Companies Law (1993) rather poorly and are more or less left to the SAS (1993).⁹⁷ However, also the old SAS (1993) in general provide very lax regulation leaving much space for various interpretations of the accounting practice.

Under the old SAS (1993) the group to be consolidated is comprised of the parent company and its subsidiaries whereby the parent company is defined as the company that directs its subsidiaries. Thus, associated undertakings are not treated as a part of the group. Neither are they clearly defined in the ZGD (1993) nor in the old SAS (1993). Furthermore, they are valued at cost as other long-term investments in both the parent's individual accounts as well as in the consolidated accounts. Therefore, there are no eliminations of profits and losses from transactions between the consolidated group members and their associates. This means that the considerable influence a company might have over its associate's operations and financial policy decisions is ignored by the old SAS (1993).

The old SAS (1993) define a subsidiary as a company in which the parent company (i) possesses an absolute majority of voting rights, or (ii) has the right to appoint the majority of members in the management board, or in the supervisory board, or (iii) has the majority of voting rights due to an agreement with other equity investors. Albeit not stated explicitly in the standards, it can be deduced from the individual standards' stipulations that subsidiaries are to be consolidated using line-by-line consolidation.

⁹⁵ Zakon o gospodarskih družbah (1993). Further referred to as ZGD.

⁹⁶ Slovenski računovodski standardi (1993). Slovene Accounting Standards are further referred to as SAS.

⁹⁷ All the law requires is that related companies have to prepare and present also consolidated financial statements comprised by the consolidated balance sheet and the consolidated income statement with adequate explanations.
According to the old SAS (1993), in consolidated accounts the equity held by minority investors is to be presented separately alongside the equity held by the parent company shareholders. Similarly, the profit or loss attributable to the minority investors is to be presented alongside the profit or loss attributable to the parent company owners and is not required to be represented as a deduction leading to come to the final business result. These regulations are strongly felt in the entity theory spirit. Nevertheless, the old SAS (1993) lack some clarity and detail when it comes to defining whether or not the identifiable assets and liabilities attributable to the minority interest, are to be treated on equal basis. Neither it is clear whether goodwill is to be attributed to the minority interest as well.

Altogether, the ZGD (1993) and the old SAS (1993) provide relatively weak regulations on consolidation. In response to an evermore-demanding corporate and institutional environment the ZGD-F changes to the Companies Law (2001) were enacted in 2001. Shortly thereafter the new SAS (2002) were published. These two documents provide much more detailed and comprehensive regulations on financial reporting. Furthermore, they improve and clarify the approach to many financial reporting issues including consolidated financial reporting. The new approach to consolidated financial reporting is presented in the sections to follow.

6.2 THE ZGD-F CHANGES TO THE COMPANIES LAW (ZGD)

The ZGD-F changes to the Companies Law $(2001)^{98}$ lay down the legal foundation for preparing annual financial reports for accounting years beginning on 1st January 2002 or later. In Art. 53, the ZGD-F (2001) deals with consolidated financial reporting.

ZGD-F thus stipulates that a company having its domicile in the Republic of Slovenia is obliged to present consolidated financial statements if it is a parent company of one or more subsidiaries having their domiciles in Slovenia or elsewhere (ZGD-F, 2001).

The definition of a subsidiary undertaking is provided by defining the parent company. Thus, a company is considered to be the parent company if (ibid.):

- (i) it has the majority of voting rights in another company,
- (ii) has the right to appoint or dismiss the majority of the management board or the supervisory board of another company,
- (iii) it has the right to exercise a controlling influence in another company on the basis of a contract or on the basis of any other legal foundation,
- (iv) it owns at least 20% of the voting rights in another company and the majority of the members of the management board or the supervisory board of the latter has been appointed to their posts exclusively in order to execute the voting rights of the parent company,

⁹⁸ Zakon o spremembah in dopolnitvah Zakona o gospodarskih družbah (2001). Further referred to as ZGD-F.

- (v) it has an ownership share in another company and controls the majority of voting rights in the other company in accord with other owners of the latter,
- (vi) it owns at least 20% of another company and either exercises a controlling influence over the other company or both companies are subject to uniform leadership of another controlling company.

Besides, a subsidiary of a subsidiary is required to be treated as a subsidiary of the parent in the consolidated accounts. All subsidiaries have to be included into consolidation along with the parent company, unless an inclusion of a subsidiary along with other subsidiaries would be immaterial for the true and fair view of the respective group of companies.^{99,100}

The constituent parts comprising the consolidated annual report are:

- (i) the consolidated balance sheet,
- (ii) the consolidated profit and loss statement,
- (iii) notes to the consolidated statements,
- (iv) statement of shareholders' equity,
- (v) the consolidated cash flow statement, and
- (vi) the business report of the companies comprising the consolidated group.

ZGD-F mandates the Slovene Accounting Standards to provide detailed instructions for the preparation of the consolidated annual report along with other details regarding various consolidation issues (ZGD-F, 2001).

6.3 SLOVENE ACCOUNTING STANDARDS (2002)

6.3.1 CONSOLIDATION ISSUES

Slovene Accounting Standards (2002)¹⁰¹ address consolidation issues in the 9th chapter of the introduction to the standards and in special subsections of most of the 38 individual standards. Thus, within SAS 1-20 and SAS 23 it is prescribed how the individual accounting categories should be dealt with in the consolidated financial statements whereas within SAS 24-27 it is prescribed how the individual statements are to be prepared. SAS 30 provides general guidelines for presenting accounting information, and in a special subsection the guidelines for presenting consolidated accounting information are outlined.

In SAS (2002), the group of companies to be consolidated is comprised of (i) the parent company, (ii) subsidiary undertakings, (iii) associated undertakings, and (iv) joint ventures.

⁹⁹ SAS 30 (2002) provides more detailed definitions of cases when subsidiaries or associates are allowed or obliged to be excluded from consolidation.

¹⁰⁰ The requirement that consolidated financial statements have to be prepared in accordance with the true and fair view principle in itself represents a considerable improvement from the Companies Law (1993) before the enactment of the ZGD-F amendment when there was no single mentioning of the true and fair view notion at all. ¹⁰¹ Slovenski računovodski standardi (2002). Further referred to as SAS (2002).

SAS (2002) interpret the group of companies as a single economic entity. Therefore, in consolidated financial statements the group should be represented as if it were a single company. Apparently, this wording is clearly in support of the entity theory of consolidation.

Consolidated accounts are to be prepared on the basis of individual financial statements of the entities comprising the group whereas intra-group transactions and relationships have to be eliminated appropriately. According to SAS 30 subsidiaries should be consolidated by using full, i.e. line-by-line consolidation. For associates the equity method is to be applied while for joint ventures either equity method or proportionate consolidation can be used. The 9th chapter of the introduction to the standards contains more specific stipulations on the respective methods of inclusion into consolidated financial statements.

According to SAS 24 the consolidated balance sheet contains an item representing the minority interest equity that is shown separately from the rest of equity. SAS 8 stipulates that the consolidated group's equity is comprised by the parent company's equity and the minority interest equity that is defined as additional equity of subsidiaries belonging to the remaining subsidiary owners. Thus, the standards ascribe a separate ownership status to the minority shareholders, indicating a preference for the entity theory.

SAS 25 regulates the profit and loss statement preparation. In the consolidated profit and loss account the net income belonging to the minority interest holders is shown as a deduction leading to the consolidated group's net income. This, however, is more in line with the parent company theory, stressing the parent's interest in the consolidated group to be rather financial in nature.

SAS 26 and SAS 27 deal with the cash flow statement preparation and the equity development statement preparation. In the consolidated cash flow statement the cash flow ascribed to the minority interest should not be eliminated and can either be shown separately or not shown at all. The later alternative can be interpreted as being supportive of the entity theory. According to SAS 27, in the statement of shareholders' equity the minority interest is neither shown separately nor there is any clause that would require it to be excluded from the statement.¹⁰² As such, SAS 27 is rather in the spirit of the entity theory of consolidation.

According to the line-by-line consolidation method described in SAS (2002), goodwill is defined as the difference between the purchase price for the controlling share of the subsidiary and the value of subsidiary's identifiable assets and liabilities. Identifiable assets and liabilities of the subsidiary are shown as sum of the fair value of the controlling entity's share and the pre-acquisition book value of the minority interest's share of the subsidiary's identifiable assets and liabilities. This treatment of goodwill and minority interest is consistent

¹⁰² As mentioned, SAS 8 defines the consolidated group's equity as sum of the parent company's equity and additional equity belonging to minority interest holders.

with the benchmark interpretation of goodwill as defined in the IAS and is more in line with the parent company theory of consolidation.

6.3.2 TREATMENT OF THE THREE LEVELS OF INVESTMENTS IN THE PARENT FINANCIAL STATEMENTS

In parent company accounts investments into subsidiary and associated undertakings are both valued by using the equity method. Thus, each year investment into subsidiaries and associates is revalued for the proportionate part of the subsidiary's or associate's earnings belonging to the parent. On the liabilities side equity is adjusted appropriately. However, it is up to the parent company whether the proportionate share of subsidiary's or associate's earnings will be shown in the profit and loss account.

6.4 SLOVENE ACCOUNTING REGULATION IN THE CONTEXT OF THE EMPIRICAL RESULTS OF THIS STUDY

Empirical results in this master thesis provide some illustrative considerations regarding the Slovene accounting regulator's approach to consolidation issues. Three considerations are presented in this section. One has to bear in mind though that U.K. accounting standards may not be directly applicable to the Slovene capital market and corporate reality.

First, empirical evidence suggests that consolidated accounts are more informative and more value relevant than the parent company accounts. From this perspective, the broader definition of a subsidiary provided by ZGD-F (2001) represents an improvement from how a subsidiary was previously defined by the old SAS (1993). Besides, Slovene accounting rules prescribe that parent companies ought to prepare their individual financial statements, which is supported by the empirical evidence.

Second, U.K. results indicate that minority interest book value and group book value attributed to the parent company shareholders are to be valued equally, namely at fair value. This is, however, not demanded by the Slovene accounting regulation, as SAS (2002) require the minority interest to be valued at pre-acquisition book value. Although the group definition is in the spirit of the entity approach, the prescribed accounting practice thus remains to be in line with the parent company concept. From this perspective, therefore, SAS (2002) ought to be reconsidered.

Third, results of model (BSE.5) clearly suggest that distinct presentation of parent company accounting information, wherein subsidiaries are valued at cost, is valued by investors, especially in periods of negative earnings. Besides, it is suggested that associates on average should be included at cost not only in the parent company accounts but also in the consolidated accounts. SAS (2002) are not in line with that. By prescribing valuation of subsidiaries in parent company accounts, and valuation of associates in parent and

consolidated accounts via the equity method, any equity earnings that might be considered as unrealized earnings are hidden to investors. Therefore, this should be taken in account as well when revising SAS (2002).

To summarize, empirical results in this study support the Slovene accounting regulation's move towards a more detailed regulation of consolidation topics and the feature of compulsory reporting of parent company accounts. However, they also provide some suggestions how SAS could further be improved in order to make the accounting information more useful to investors.

7 CONCLUSION

The master thesis provides a value relevance analysis of parent company accounting information and consolidated accounting information as currently prescribed under the U.K. accounting standards as well as of alternative consolidation approaches. In order to examine and compare the value relevance of different accounting concepts, a valuation model is utilized based on the residual income model. Value relevance characteristics of the variables in the empirical models are consistent with findings of recent accounting research suggesting that the models are properly specified.

Overwhelming evidence is found that consolidated financial information is more value relevant than the parent company information. This supports accounting regulators' requirements to prepare consolidated financial statements. However, parent company accounting information is far from being found value irrelevant. This master thesis provides evidence suggesting that separate reporting of parent company information makes sense in periods when firms are experiencing losses. This evidence thus supports the U.K. accounting rules requiring from the companies to prepare parent company accounts. Hereby also the Slovene accounting practice is supported. This finding further points out the inappropriateness of the U.S. accounting regulation not prescribing the disclosure of the parent company financial statements.

The value relevance analysis also revealed some evidence indicating that the equity method used for consolidating associates is value relevant in periods of losses while in times of profits it is not. These findings are in support of the current U.K. accounting practice that requires both associates being valued at cost in parent company accounts and being valued via the equity method in the consolidated accounts. Slovene accounting practice is not supported by these findings, as it requires the equity method in both parent company and consolidated accounts.

Undoubtedly the most topical question of this master thesis is the following: which of the consolidation concepts is the most value relevant? The International Accounting Standards and the guidelines set out by the Seventh Company Law Directive are being very general

regarding this issue and allow for utilizations of both the parent company theory and the entity theory of consolidated financial reporting. The U.S. and the U.K. regulators in contrast are expressing a clear preference for the entity approach. Nevertheless, the U.S. accounting rules allow the companies to follow any of the three concepts, namely the parent company concept, the proportionate consolidation concept and the economic unit concept. The U.K. rules however are in line with the softer version of the economic unit concept.

The review of the financial economics literature on corporate control transactions as well as of some other aspects of legal and economic nature provides valuable insights into the nature of the minority interest, which in general is leading to important theoretical support for the entity theory. The reviewed literature by extension stresses the parent company's control over 100% of the subsidiaries assets as well as the derivation of benefits from exercizing this control. Besides, minority interest is asserted to represent an equity interest in the consolidated entity though differing from the parent company's equity ownership. These features support the U.K. version of the entity approach.

Empirical evidence from the aggregate sample analysis does not provide any support for a separate presentation of the minority interest items in the consolidated accounts. Two consolidation concepts have the feature of not prescribing minority interest figures to be reported, namely the proportionate consolidation concept and the extreme version of the economic unit concept. However, the model selection procedures applied in this master thesis did not provide any answer as to which of the two is more value relevant. Nonetheless, results of testing the equality of regression coefficients of group and minority interest items suggests that group and minority interest figures should be valued on the same basis implying a slight preference for the economic unit concept. In the search for an explanation for minority interest being value irrelevant, the same regressions and tests were applied to industry group sub-samples. Evidence is provided that minority interest figures are value relevant in some industry groups.

These findings have important implications for the consolidation debate. It is understood that financial reporting is hardly going to be regulated on an industry specific basis. Rather should the consolidation rules embrace the value relevance characteristics of different segments of the national economy. From this perspective the U.K. accounting standards seem to represent a viable approach to consolidation. While they allow for minority interest items being valued on the same basis as the group figures attributed to the parent company shareholders, they cover both cases with value relevant minority interest figures as well as cases where minority interest figures make sense as being part of economic unit figures.

To summarize, findings of this master thesis in general support the U.K. financial reporting rules. In particular the requirement and the methods of presenting parent company information along with consolidated accounting information is valued. Besides, the U.K. approach to consolidation is found to be very practical in nature. The evidence and findings

from this master thesis also support the move towards more detailed regulation of consolidation issues in Slovenia. However, some Slovene practices are not supported, in particular the treatment of associates and the use of the parent company concept. Hence, there is a need for future research to deal with these issues in the Slovenian context.

REFERENCES

- Abad Cristina, Laffarga Joaquina, García-Borbolla Amalia, Larrán Manuel, Pińero Juan Manuel, Garrod Neil: An Evaluation of the Value Relevance of Consolidated versus Unconsolidated Accounting Information: Evidence from Quoted Spanish Firms. Journal of International Financial Management and Accounting, Oxford, (11)2000, 3, pp. 156-177.
- 2. Allen Jeffrey W., McConnell John J.: *Equity carve-outs and managerial discretion*. The Journal of Finance, Cambridge, (53)1998, 1, pp. 163-186.
- 3. Allen Jeffrey W.: Capital markets and corporate structure: The equity carve-outs of *Thermo Electron*. Journal of Financial Economics, Amsterdam, (48)1998, 1, pp. 99-124.
- 4. Amir Eli, Baruch Lev: Value relevance of non-financial information: The wireless communications industry. Journal of Accounting and Economics, Amsterdam, 22(1996), 1, pp. 3-30.
- Arnold A.J., Matthews D.R.: Patterns of UK financial disclosure in the second quarter of the twentieth century. [URL: http://www.essex.ac.uk/AFM/aboutus/workingpapers/ WP01-01.pdf], 17.8.2001.
- 6. Ball Ray, Brown Philip: An Empirical Evaluation of Accounting Income Numbers. Journal of Accounting Research, Chicago, 6(1968), 1, pp. 159-178.
- 7. Barclay Michael J., Holderness Clifford G.: *The Law and Large-Block Trades*. Journal of Law and Economics, Chicago, 35(1992), 2, pp. 265-294.
- Barnett Vic, Lewis Toby: Outliers in Statistical Data, 3rd ed. Chichester : John Wiley & Sons, 1994, 584 pp.
- 9. Barth Mary E., Kallapur Sanjay: The effects of Cross-Sectional Scale Differences on Regression Results in Empirical Accounting Research. Contemporary Accounting Research, Toronto, 13(1996), 2, pp. 527-567.
- 10.Barth Mary E., Clinch Greg: Revalued Financial, Tangible, and Intangible Assets: Association with Share Prices and Non-Market-Based Value Estimates. Journal of Accounting Research, Chicago, 36(1998), Supplement, pp.199-233.
- 11.Barth Mary E., Clinch Greg: Scale Effects in Capital Markets-Based Accounting Research. [URL: http://papers.ssrn.com/sol3/delivery.cfm?cfid=24466&sftoken=482345 76&abstracted=201228], 31.1.2000.

- 12.Basu Sudipta: *The conservatism principle and the asymmetric timeliness of earnings.* Journal of Accounting and Economics, Amsterdam, 24(1997), 1, pp. 3-37.
- 13. Bešter Janez: *Prevzemi podjetij in njihovi učinki na delničarje, zaposlene, upnike in državo*. Ljubljana : Gospodarski vestnik, 1996. 157 pp.
- 14.**Beams Floyd A.:** Advanced Accounting, 2nd ed. Englewood Cliffs : Prentice Hall, Inc., 1982, 904 pp.
- 15.Beatty Randolph P., Riffe Susan, Thompson Rex: The Method of Comparables and Tax Court Valuations of Private Firms: An Empirical Investigation. Accounting Horizons, Sarasota, 13(1999), 3, pp. 177-199.
- 16.**Bebchuk Lucian Arye:** *Takeover Bids below the Expected Value of Minority Shares.* Journal of Financial and Quantitative Analysis, 24(1989), 2, pp. 171-184.
- 17.Beckman Judy K.: The Economic Unit Approach to Consolidated Financial Statements: Support From the Financial Economics Literature. Journal of Accounting Literature, 14(1995), 1, pp. 1-23.
- 18.Berger Philip G., Ofek Eli, Swary Itzhak: *Investor valuation of the abandonment option*. Journal of Financial Economics, Amsterdam, 42 (1996), 2, pp. 257-287.
- 19. Bodie Zvi, Kane Alex, Marcus Alan J.: *Investments, 4th ed.* Boston : Irwin McGraw-Hill, 1999, 967 pp.
- 20.Bradley Michael, Desai Anand, Kim E. Han: The Rationale Behind Interfirm Tender Offers: Information or Synergy?. Journal of Financial Economics, Amsterdam, 11(1983), 1-4, pp. 183-206.
- 21.Bradley Michael: Interfirm Tender Offers and the Market for Corporate Control. Journal of Business, Chicago, 53(1980), 4, pp. 345-376.
- 22.Brown Stephen, Lo Kin, Lys Thomas: Use of R^2 in accounting research: measuring changes in value relevance over the last four decades. Journal of Accounting and Economics, Amsterdam, 28(1999), 2, pp. 83-115.
- 23.**Bullow Jeremy, Huang Ming, Klemperer Paul**: *Toeholds and Takeovers*. Journal of Political Economy. Chicago : The University of Chicago, (107)1999, 3, pp. 427-454.
- 24.Burgstahler David C., Dichev Ilia D.: *Earnings, Adaptation, and Equity Value.* The Accounting Review, Ann Arbor, 72(1997), 2, pp. 187-215.
- 25.Burkart Mike, Gromb Denis, Panunzi Fausto: Why higher takeover premia protect minority shareholders. The Journal of Political Economy, Chicago, (106)1998, 1, pp. 172-204.
- 26.Christie Andrew A.: On Cross-Sectional Analysis in Accounting Research. Journal of Accounting and Economics, Amsterdam, 9(1987), 3, pp. 231-258.

- 27.Collins Daniel W., Maydew Edward L., Weiss Ira S.: Changes in the value-relevance of earnings and book values over the past forty years. Journal of Accounting and Economics, Amsterdam, 24(1997), 1, pp. 39-67.
- 28.Comment R, Jarrell G.A.: *Two-tier and negotiated tender offers: The imprisonment of the free-riding shareholder*. Journal of Financial Economics, Amsterdam, 19(1987), 2, pp. 238-310.
- 29.Cummins Jason G., Harris Trevor S., Hassett Kevin A.: Accounting standards, information flow, and firm investment behavior. Cambridge : National Bureau of Economic Research (Working paper series), 1994, 44 pp.
- 30.Cunitz J.: Valuing Potential Acquisitions. Financial Executive, Morristown, 39(1971), 1, pp. 16-28.
- 31. Davies Mike, Paterson Ron, Wilson Allister: UK GAAP: Generally Accepted Accounting Practice in the United Kingdom, 6th ed. Croydon : Butterworths Tolley, 1999, 2171 pp.
- 32.Dechow Patricia M.: Accounting earnings and cash flows as measures of firm performance: The role of accounting accruals. Journal of Accounting and Economics, Amsterdam, 18(1994), 1, pp. 3-42.
- 33.Easton Peter D.: Discussion of Revalued Financial, Tangible, and Intangible Assets: Association with Share Prices and Non-Market-Based Value Estimates. Journal of Accounting Research, Chicago, 36(1998), Supplement, pp. 235-247.
- 34.Easton Peter D.: Security Returns and the Value Relevance of Accounting Data. Accounting Horizons, Sarasota, 13(1999), 4, pp. 399-412.
- 35.Easton Peter D., Sommers Gregory A.: Scale and Scale Effects in Market-Based Accounting Research. Working paper, Ohio State University, 2000, [URL: http://papers.ssrn.com/sol3/delivery.cfm?cfid=24466&sftoken=48234576&abstractid=212 708], 22.4.2000.
- 36.Edey H.: *Business Valuation, Goodwill and the Super-Profit Method.* Baxter W., Davidson S., eds., Studies in Accounting Theory. London : Sweet and Maxwell, 1962, pp. 201-217.
- 37.Edwards Edgar O., Bell Philip W.: *The Theory and Measurement of Business Income*. Berkeley : University of California Press, 1961, 323 pp.
- 38.Elliot J., Hanna J.: Repeated Accounting Write-Offs and the Information Content of *Earnings*. Journal of Accounting Research, Chicago, 34(1996), Supplement, pp. 135-155.
- 39. Epstein Barry J., Ali Mirza Abbas: Wiley IAS 98: interpretation and application of International Accounting Standards 1998. New York : John Wiley & Sons, 1998, 842 pp.

- 40.**Farrar John H., Hannigan Brenda, Furey Nigel E., Wylie Philip:** *Farrar's Company Law, 4th ed.* London : Butterworths, 1998, 802 pp.
- 41. Fishman Michael J.: *A Theory of Preemptive Takeover Bidding*. The Rand Journal of Economics, Mountmorris, 19(1988), 1, pp. 88-102.
- 42. Francis Jennifer, Schipper Katherine: *Have Financial Statements Lost Their Relevance?*. Journal of Accounting Research, Chicago, 37(1999), 2, pp. 319-352.
- 43.**Franks Julian, Mayer Colin:** *Capital markets and corporate control: a study of France, Germany and the UK.* Economic Policy, Cambridge, 10(1990), 1, pp. 189-231.
- 44.Gomes Armando: Going public without governance: Managerial reputation effects. The Journal of Finance, Cambridge, (55)2000, 2, pp. 615-646.
- 45.Graham Roger C. Jr., Lefanowicz Craig E.: Majority and minority ownership of publicly-traded firms: A test of the value of control using market multiples. Journal of Business Finance & Accounting, Oxford, (26)1999, 1-2, pp. 171-198.
- 46.**Gray Sidney J., Needles Belverd E. Jr.:** *Financial Accounting: A Global Approach.* Boston : Houghton Mifflin Company, 1999, 599 pp.
- 47.Grossman Sanford J., Hart Oliver D.: Takeover Bids, the Free-Rider Problem and the Theory of the Corporation. Bell Journal of Economics, Santa Monica, 11(1980), 1, pp. 42–64.
- 48.**Grubbs F. E.:** *Procedures for Detecting Outlying Observations in Samples.* Technometrics, 11(1969), 1, pp. 1-21.
- 49. Gujarati Damodar N.: *Basic Econometrics, 3rd ed.* New York : McGraw-Hill, 1995, 838 pp.
- 50.Harris Milton, Raviv Artur: Corporate Control Contests and Capital Structure. Journal of Financial Economics, Amsterdam, (20)1988, 1-2, pp. 55-86.
- 51.**Hathaway Neville:** *Partial Takeovers as Put Options.* Accounting and Finance, Clayton, 30(1990), 1, pp. 27-38.
- 52.Hayn Carla: *The information content of losses*. Journal of Accounting and Economics, Amsterdam, 20(1995), 2, pp. 125-153.
- 53.**Hendriksen Eldon S.:** Accounting Theory, 3rd ed. Homewood : Richard D. Irwin, 1977, 636 pp.
- 54. Hirshleifer David, Titman Sheridan: Share Tendering Strategies and the Success of Hostile Takeover Bids. The Journal of Political Economy, Chicago, (98)1990, 2, pp. 295-324.
- 55.**Hussey Roger, Bishop Mary:** Corporate Reports: A guide for preparers and users. New York : Woodhead-Faulkner, 1993, 292 pp.

- 56.Kale Jayant R., Noe Thomas H.: Unconditional and Conditional Takeover Offers: Experimental Evidence. The Review of Financial Studies, Oxford, 10(1997), 3, pp. 735-766.
- 57.Kothari S.P., Zimmerman Jerold L.: *Price and Return Models*. Journal of Accounting and Economics, Amsterdam, 20(1995), 2, pp. 155-192.
- 58.La Porta Rafael, Lopez-de-Silanes Florencio, Shleifer Andrei, Vishny Robert W.: *Law and finance.* The Journal of Political Economy, Chicago, (106)1998, 6, pp. 1113-1155.
- 59.La Porta Rafael, Lopez-de-Silanes Florencio, Shleifer Andrei, Vishny Robert W.: *Legal determinants of external finance*. The Journal of Finance, Cambridge, (52)1997, 3, pp. 1131-1150.
- 60.Landsman W. R., Magliolo J.: Cross-Sectional Capital Markets Research and Model Specification. The Accounting Review, Ann Arbor, 63(1988), 4, pp. 586-604.
- 61.Lo Kin, Lys Thomas: The Ohlson Model: Contribution to Valuation Theory, Limitations, and Empirical Applications. Journal of Accounting, Auditing and Finance, Boston, 15(2000), 3, pp. 337-367.
- 62. Miller Sandra K.: How Should U.K. and U.S. Minority Shareholder Remedies for Unfairly Prejudicial or Oppressive Conduct Be Reformed?. American Business Law Journal, New York, 36(1999), pp. 579-632.
- 63. Modigliani Franco, Perotti Enrico C.: Security versus Bank Finance: the Importance of a Proper Enforcement of Legal Rules. [URL: http://papers.ssrn.com/sol3/delivery .cfm/991216550.pdf?abstractid=200559], 2.2.2000.
- 64. Moonitz Maurice: The Entity Theory of Consolidated Statements. New York : Arno Press, 1951, 96 pp.
- 65.Myers Stewart C., Majluf Nicholas S.: Corporate Financing and Investment Decisions When Firms Have Information That Investors Do Not Have. Journal of Financial Economics, Amsterdam, (13)1984, 2, pp. 187-221.
- 66. Myers Stewart C.: A Framework for Evaluating Mergers. Myers Stewart C. ed. Modern Developments in Financial Management. New York : Frederick A. Preger, Inc., 1976, pp. 631-646.
- 67.Nanda Vikram: On the Good News in Equity Carve-Outs. The Journal of Finance, Cambridge, (46)1991, 5, pp. 1717-1737.
- 68.Nobes Christopher: Implementing the European Community Seventh Directive: an overview. S. J. Gray, A. G. Coenenberg, P. D. Gordon, ed., International Group Accounting: Issues in European Harmonization, 2nd ed. London : Routledge, 1993, pp. 33-40.

- 69. Ohlson James A., Zhang Xiao-Jun: *Accrual Accounting and Equity Valuation*. Journal of Accounting Research, Chicago, 36 (1998), Supplement, pp. 85-112.
- 70.**Ohlson James A.:** *Earnings, Book Values, and Dividends in Equity Valuation.* Contemporary Accounting Research, Toronto, 11(1995), 2, pp. 661-687.
- 71.**Pacter Paul:** *Revising GAAP for consolidations: Join the debate.* The CPA Journal Online, [URL: http://www.nysscpa.org/cpajournal/old/12826669.htm], 1.7.1992.
- 72.Peasnell K. V.: Some Formal Connections Between Economic Values and Yields and Accounting Numbers. Journal of Business Finance and Accounting, Oxford, 9(1982), 1, pp. 361-381.
- 73.Pellens Bernhard, Linnhoff Ulrich: Financial analysis of group accounts in Germany: an empirical study. S. J. Gray, A. G. Coenenberg, P. D. Gordon, ed., International Group Accounting: Issues in European Harmonization, 2nd ed. London : Routledge, 1993, pp. 110-120.
- 74.**Pham Dang:** Group accounting in France. S. J. Gray, A. G. Coenenberg, P. D. Gordon, ed., International Group Accounting: Issues in European Harmonization, 2nd ed. London : Routledge, 1993, pp. 79-96.
- 75.**Preinreich G.A.D.:** *Annual Survey of Economic Theory: The Theory of Depreciation.* Econometrica, Menasha, 6(1938), 2, pp. 219-241.
- 76.**Ramsay Ian:** *Balancing law and economics: The case of partial takeovers.* The Journal Of Business Law, London, (1992), pp. 369-397.
- 77.**Rappaport Alfred**: *Calculating The Value-Creation potential of a Deal*. Mergers & Acquisitions, Philadelphia, 33(1998), 1, pp. 33-44.
- 78.Rappaport Alfred: Strategic Analysis for More Profitable Acquisitions. Harvard Business Review, Boston, 57(1979), 4, pp. 99-111.
- 79. Ravid S. Abraham, Spiegel Mathew: *Toehold strategies, takeover laws and rival bidders*. Journal of Banking & Finance, Amsterdam, 23(1999), 8, pp. 1219-1242.
- 80.**Rees William P.:** *The Impact of Dividends, Debt and Investment on Valuation Models.* Journal of Business Finance and Accounting, Oxford, 24(1997), 7-8, pp. 1111-1140.
- 81.Roy Asim: Optimal Acquisition Fraction And A Theory For Partial Acquisitions. Journal of Business Finance & Accounting, Oxford, (15)1988, 4, pp. 543-555.
- 82.Samuels J.M., Brayshaw R.E., Craner J.M.: *Financial Statement Analysis in Europe*. London : Chapman & Hall, 1995, 454 pp.
- 83. Scharfstein David: *The Disciplinary Role of Takeovers*. The Review of Economic Studies, Oxford, (55)1988, 2, pp. 185-199.

- 84.Schipper Katherine, Smith Abbie: A Comparison of Equity Carve-Outs and Seasoned Equity Offerings: Share Price Effects and Corporate Restructuring. Journal of Financial Economics, Amsterdam, (15)1986, 1-2, pp. 153-186.
- 85. Shleifer Andrei, Vishny Robert W.: Large Shareholders and Corporate Control. The Journal of Political Economy, Chicago, (94)1986, 3, pp. 461-488.
- 86.Smith Brian F., Amoaku-Ado Ben: *Minority Buyouts and Ownership Characteristics: Evidence From the Toronto Stock Exchange*. Financial Management, Tampa : The Financial Management Association, 24(1992), 2, pp. 41-51.
- 87.Stein Jeremy C.: *Takeover Threats and Managerial Myopia*. Journal of Political Economy, Chicago, 96(1988), 1, pp.61-80.
- 88. Stonehouse George, Hamill Jim, Campbell David, Purdie Tony: Global and Transnational Business: Strategy and Management. Chichester : John Wiley & Sons, 2000, 463 pp.
- 89. **Taylor Paul A.:** *Consolidated Financial Reporting*. London : Paul Chapman Publishing Ltd, 1996, 372 pp.
- 90.**Theunisse Hilda:** Group accounting in Belgium. S. J. Gray, A. G. Coenenberg, P. D. Gordon, ed., International Group Accounting: Issues in European Harmonization, 2nd ed. London : Routledge, 1993, pp. 42-65.
- 91.Vijh Anand M.: Long-term returns from equity carveouts. Journal of Financial Economics, Amsterdam, (51)1999, 2, pp. 273-308.
- 92.Vuong Quang H.: Likelihood Ratio Tests for Model Selection and Non-nested Hypotheses, Econometrica, Evanston, 57(1989), 2, pp. 307-333.
- 93. Walker Martin: Clean Surplus Accounting Models and Market-based Accounting Research: A Review. Accounting and Business Research, London, 27(1997), 4, pp. 341-355.
- 94. White Gerald I., Sondhi Ashwinpaul C., Fried Dov: *The Analysis and Use of Financial Statements*, 2nd ed. New York : John Wiley and Sons, Inc., 1997, 1224 pp.
- 95. Whittred G.: *The Derived Demand for Consolidated Financial Reporting*. Journal of Accounting and Economics, Amsterdam, 9(1987), 3, pp. 259-285.

SOURCES

- 1. American Accounting Association's Financial Accounting Standards Committee Response to the FASB Discussion Memorandum 'Consolidation Policy and Procedures'. Accounting Horizons, Sarasota, 8(1994), 2, pp. 120-125.
- American Accounting Association's Financial Accounting Standards Committee Response to the FASB Exposure Draft 'Proposed Statement of Financial Accounting Standards-Consolidation Policy and Procedures'. Accounting Horizons, Sarasota, 10(1996), 2, pp. 182-185.
- 3. Companies Act 1989. London : Sweet & Maxwell, 1990.
- 4. *Discussion Memorandum: Consolidation Policy and Procedures.* Norwalk : Financial Accounting Standards Board, 1991.
- 5. Exposure Draft (Revised): Proposed Statement of Financial Accounting Standards-Consolidated Financial Statements: Purpose and Policy. Norwalk : Financial Accounting Standards Board, 1999.
- 6. Exposure Draft: Proposed Statement of Financial Accounting Standards-Consolidated Financial Statements: Purpose and Policy. Norwalk : Financial Accounting Standards Board, 1995.
- 7. Financial Reporting Standard 1: Cash Flow Statements. Milton Keynes : Accounting Standards Board, 1996.
- 8. *Financial Reporting Standard 10: Goodwill and Intangible Assets*. Milton Keynes : Accounting Standards Board, 1997.
- 9. *Financial Reporting Standard 2: Accounting for Subsidiary Undertakings*. Milton Keynes : Accounting Standards Board, 1992.
- 10. FT Extel Company Analysis.
- 11. Global Access. [URL: http://www.primark.com/ga], 20.10.2000.
- 12. International Accounting Standard 22: Business Combinations. London : International Accounting Standards Committee, 1998.
- 13. International Accounting Standard 27: Consolidated Financial Statements and Accounting for Investments in Subsidiaries. London : International Accounting Standards Committee, 1989.
- 14. *International Accounting Standard 28: Accounting for Investments in Associates*. London : International Accounting Standards Committee 1989.

- 15. Seventh Council Directive of 13 June 1983 Based on the Article 54 (3) (g) of the Treaty on Consolidated Accounts. Brussels : The Council of the European Communities (83/349/EEC).
- 16. *Slovenski računovodski standardi*. Ljubljana : Zveza računovodij, finančnikov in revizorjev Slovenije, 1993. 209 pp.
- 17. *Slovenski računovodski standardi*. Ljubljana : Zveza računovodij, finančnikov in revizorjev Slovenije, 2002. 319 pp.
- 18. *Statement of Standard Accounting Practice 22: Accounting for Goodwill*. Milton Keynes : Accounting Standards Committee, 1989.
- 19. Zakon o gospodarskih družbah (Uradni list RS, št. 30/93).
- 20. Zakon o spremembah in dopolnitvah Zakona o gospodarskih družbah (Uradni list RS, št. 45/01).

AAA	American Accounting Association
AAA, 1994	American Accounting Association's Financial Accounting Standards Committee Response to the FASB Discussion Memorandum 'Consolidation Policy and Procedures'. Accounting Horizons, Sarasota, 8(1994), 2, pp. 120-125.
AAA, 1996	American Accounting Association's Financial Accounting Standards Committee Response to the FASB Exposure Draft 'Proposed Statement of Financial Accounting Standards- Consolidation Policy and Procedures'. Accounting Horizons, Sarasota, 10(1996), 2, pp. 182-185.
ASB	Accounting Standards Board
ASE	American Stock Exchange
Discussion Memorandum, 1991	Discussion Memorandum: Consolidation Policy and Procedures. Norwalk : Financial Accounting Standards Board, 1991.
Exposure Draft, 1995	Exposure Draft: Proposed Statement of Financial Accounting Standards-Consolidated Financial Statements: Purpose and Policy. Norwalk : Financial Accounting Standards Board, 1995.
Exposure Draft (Revised), 1999	Exposure Draft (Revised): Proposed Statement of Financial Accounting Standards-Consolidated Financial Statements: Purpose and Policy. Norwalk : Financial Accounting Standards Board, 1999.
FASB	Financial Accounting Standards Board
FRS	Financial Reporting Standards or Financial Accounting Standard
IAS	International Accounting Standards or International Accounting Standard
NYSE	New York Stock Exchange
SAS	Slovene Accounting Standards or Slovene Accounting Standard
Seventh Council Directive (or Seventh Directive)	Seventh Council Directive of 13 June 1983 Based on the Article 54 (3) (g) of the Treaty on Consolidated Accounts. Brussels : The Council Of The European Communities (83/349/EEC).
SSAP	Statement of Standard Accounting Practices
U.K.	United Kingdom
U.S.	United States
ZGD	Zakon o gospodarskih družbah (Uradni list RS, št. 30/93).
ZGD-F	Zakon o spremembah in dopolnitvah Zakona o gospodarskih družbah (Uradni list RS, št. 45/01).

APPENDIX A: List of Acronyms and Abridgements Used in this Master Thesis

APPENDIX B: Overview of Symbols Representing Variables Used in the Value Relevance Analysis

Symbol	Variable description
E^{P}	Parent earnings. Usually disclosed in notes to the consolidated income statement.
BV^{P}	Parent book value of equity. Reported in the parent balance sheet.
$E^{{}_G}$	Group earnings (Net income attributable to parent shareholders). Reported in the consolidated income statement.
BV^{G}	Group book value of equity. Reported in the consolidated balance sheet.
E^{M}	Minority interest earnings (Minority share of net income). Reported in the consolidated income statement.
BV^{M}	Minority interest book value. Reported in the consolidated balance sheet.
$E^{\scriptscriptstyle G}_{\scriptscriptstyle A}$	Group's share in earnings of associates. Disclosed in the consolidated income statement.
DIV_{A}	Dividends from associates. Usually reported in the consolidated cash flow statement.
RE^{A}	$RE^{A} = E_{A}^{G} - DIV_{A}$
RE^{s}	$RE^{S} = E^{G} - E^{P} - RE^{A}$
MV	Market value of the parent company (End of accounting year price per share times number of shares outstanding).

APPENDIX C: List of Industry Groups in the Analysis

Industry group A:	Construction and building materials
Industry group B:	Energy
Industry group C:	Engineering and machinery
Industry group D:	Supermarkets and telecom
Industry group E:	Household goods and textiles
Industry group F:	Software and computer services
Industry group G:	Non-cyclical consumer goods
Industry group H:	Cyclical service industries

APPENDIX D: Sample Characteristics

	Total Industry group subsamples							oles	
	sample	Α	В	С	D	Е	F	G	Н
Number of firms	326	80	43	42	35	34	31	33	28
Total number of firm-year observations	1838	469	205	189	192	192	199	197	195
Number of firm-year observations where groups include subsidiary undertakings	1831	469	205	189	190	192	194	197	195
Number of firm-year observations containing non-zero minority interest items	942	235	109	89	59	84	63	166	137
Number of firm year observations where groups include associated undertakings	883	242	136	76	56	68	69	132	104
Number of firm-year observations containing other investments items	801	227	137	73	114	66	64	63	57
Number of firm-year observations with negative group earnings	281	72	19	38	46	30	34	26	16

Table D.1: Sample Structure Characteristics

Source: Global Access, 2000.

Table D.2: Time Distribution	n of Sample	Observations
------------------------------	-------------	---------------------

	Number of firm-year observations										
Voor	Total		I	ndustr	y grou	p subs	ample	s			
real	sample	Α	В	С	D	E	F	G	Н		
1989	1	1	0	0	0	0	0	0	0		
1990	1	1	0	0	0	0	0	0	0		
1991	10	2	1	1	1	1	0	4	0		
1992	78	14	6	4	6	7	12	15	14		
1993	220	59	26	24	14	27	26	22	22		
1994	268	68	32	31	21	30	29	32	25		
1995	270	74	34	29	21	31	30	27	24		
1996	267	70	29	30	27	28	29	27	27		
1997	257	64	27	27	32	28	27	25	27		
1998	249	65	26	23	34	23	26	24	28		
1999	205	50	23	20	31	17	20	19	25		
2000	12	1	1	0	5	0	0	2	3		
Total	1838	469	205	189	192	192	199	197	195		

Source: Global Access, 2000.

APPENDIX E: Industry Group Results

Panel A	1: Resul	ts of regi	ression ^{a, b,}	c						
	(BS	SE.1)	(BSE	.2)	(BSE	.3)	(BSI	E.4)	(BSI	E.5)
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{ii}}$	-172324 (,813)	-,011	-2159656 (,001)	-,136	-1951010 (,002)	-,123	-1866238 (,004)	-,118	-1977852 (,002)	-,125
$D_{ii} \frac{1}{MV_{ii}}$	1915911 (,050)	,089	1108062 (,237)	,051	1200840 (,188)	,056	817850 (,404)	,038	1432726 (,132)	,066
$\frac{E_{ii}^X}{MV_{ii}}$,738 (,001)	,125	4,369 (,000)	,783	4,298 (,000)	,775	4,269 (,000)	,765	4,257 (,000)	,722
$D_{ii} \frac{E_{ii}^X}{MV_{ii}}$	-,523 (,110)	-,059	-5,152 (,000)	-,788	-5,072 (,000)	-,775	-5,038 (,000)	-,771	-4,426 (,000)	-,496
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$							5,430 (,293)	,037		
$D_{ii} \frac{E_{ii}^{MI}}{MV_{ii}}$							2,290 (,784)	,007		
$\frac{RE_{ii}^{S}}{MV_{ii}}$									3,776 (,000)	,717
$D_{ii} \frac{RE_{ii}^s}{MV_{ii}}$									-4,629 (,000)	-,686
$\frac{RE_{it}^{A}}{MV_{it}}$									13,185 (,000)	,133
$D_{ii} \frac{RE_{ii}^A}{MV_{ii}}$									-18,180 (,000)	,149
$\frac{BV_{it}^{X}}{MV_{it}}$,929 (,000)	,906	,645 (,000)	,616	,624 (,000)	,612	,616 (,000)	,589	,629 (,000)	,600
$D_u \frac{BV_u^X}{MV_u}$	-,422 (,000)	-,248	-,113 (,160)	-,063	-,130 (,090)	-,075	-7,85E-02 (,373)	-,044	-0,090 (,259)	-,050
$\frac{BV_{ii}^{Ml}}{MV_{ii}}$,832 (,241)	,054		
$D_{ii} \frac{BV_{ii}^{aai}}{MV_{ii}}$							-,948 (,288)	-,044		
Adj. R ²	,697		,784		,787		,787		,791	
n	469		469		469		469		469	
Panel L	B: Vuon	g test res	ults ^d							
Compariso	n of the valu	ue relevance o	of model 1 vs.	the value r	elevance of m	odel 2		Vuong's Z-statistic	Sig	nificance
Proportiona	ate consolid	ation model	vs. Parent-con	npany-info	rmation mode	1		4,69	(0,000
Economic	unit model v	vs. Parent-cor	npany-informa	ation mode	1			4,66	(0,000
Economic	unit model v	vs. Proportion	ate consolidat	ion model				1,18	(0,119
Panel (C: Testir	ng equali	ty of regr	ession a	coefficien	ts ^e				
		(B	SE.4)		<u> </u>			(BSE.5)		
Ho :		$\beta_2 = \beta_4$	$\beta_6 = \beta_6$	3 ₈		β	$_{2} = \beta_{4}$	$\beta_2 = \beta_6$	ß	$B_4 = \beta_6$

Table E.1: Value Relevance Analysis Results for Industry Group A: Construction and Building Materials

a. $E_{ii}^{X} = E_{ii}^{P}$ in models (BSE.1) and (BSE.5). $E_{ii}^{X} = E_{ii}^{G}$ in models (BSE.2) and (BSE.4). $E_{ii}^{X} = \left(E_{ii}^{G} + E_{ii}^{M}\right)$ in model (BSE.5). $BV_{a}^{X} = BV_{a}^{P}$ in model (BSE.1). $BV_{a}^{X} = BV_{a}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{a}^{X} = \left(BV_{a}^{G} + BV_{a}^{M}\right)$ in model (BSE.3).

 $\beta_2\neq\beta_6$

-2,508

0,012

 $\beta_2 \neq \beta_4$

0,321

0,749

 $\beta_4\neq\beta_6$

-2,537

0,011

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

 $\beta_6\neq\beta_8$

-0,299

0,765

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Source: Calculation.

H1:

t-statistics Significance $\beta_2 \neq \beta_4$

-0,221

0,825

Panel 2	4: Rest	ults of reg	ression ^{a,b,}	,С						
	(BSE.1)	(BSE	E.2)	(BSE	2.3)	(BSI	E.4)	(BSE	E.5)
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{\mu}}$	1092127 (,000)	,137	6082985 (,010)	,077	5594631 (,018)	,070	5510466 (,022)	,069	6659675 (,004)	,084
$D_{it} \frac{1}{MV_{it}}$	-282199 (,669)	-,014	-815050 (,879)	-,004	-330373 (,950)	-,002	-1028700 (,850)	-,005	1769539 (,738)	,009
$\frac{E_{it}^X}{MV_{it}}$	3,432 (,000)	,384	5,055 (,000)	,568	4,965 (,000)	,560	4,945 (,000)	,556	5,398 (,000)	,603
$D_{it} rac{E_{it}^X}{MV_{it}}$	-1,004 (,167)	-,054	-7,855 (,000)	-,374	-7,754 (,000)	-,369	-7,647 (,000)	-,364	-2,861 (,003)	-,155
$\frac{E^{MI}_{it}}{MV_{i(t-1)}}$							18,284 (,527)	,041		
$D_{it} \frac{E_{it}^{MI}}{MV_{it}}$							-388,936 (,202)	-,051		
$\frac{RE_{it}^{S}}{MV_{it}}$									4,184 (,000)	,330
$D_{\mu} \frac{RE_{\mu}^{s}}{MV_{\mu}}$									-3,713 (,001)	-,166
$\frac{RE_{it}^{A}}{MV_{it}}$									-9,339 (,272)	-,028
$D_{ii} \frac{RE_{ii}^{A}}{MV_{ii}}$	000		617		526		520		-2,858 (,892)	-,004
$\frac{BV_{it}^{A}}{MV_{it}}$,996 (,000)	,574	,517 (,000)	,383	,526 (,000)	,393	,528 (,000)	,391	,498 (,000)	,369
$D_{ii} \frac{BV_{ii}^{A}}{MV_{ii}}$	-9,313E- (,608)	-,019	,446 (,016)	,079	,439 (,016)	,078	,567 (,021)	,100	,581 (,001)	,103
$\frac{BV_{ii}}{MV_{ii}}$							-,277 (,901)	-,008		
$D_{ii} \frac{BV_{ii}}{MV_{ii}}$							4,588 (,683)	,015		
Adj. R ²	,821		,883		,884		,885		,889	
n	205		205		205		205		205	
Panel 1	B: Vuo	ng test re	sults ^d							
Compariso	on of the v	alue relevance	of model 1 vs.	the value r	elevance of n	nodel 2		Vuong's Z-statistic	Sigi	nificance
Proportion	ate consol	idation model	vs. Parent-cor	npany-info	rmation mode	1		4,25	(0,000
Economic	unit mode	el vs. Parent-co	mpany-inform	ation mode	1			4,39	(0,000
Economic	unit mode	el vs. Proportio	nate consolida	tion model				2,25	(0,012
Panel (<u>C: Test</u>	ting equal	ity of regr	ession o	coefficien	ets ^e				
	(BSE.4)							(BSE.5)		
Ho :		$\beta_2=\beta_4$	$\beta_6 =$	β ₈		β	$_2 = \beta_4$	$\beta_2=\beta_6$	β	$\beta_4 = \beta_6$
H1 :		$\beta_2\neq\beta_4$	$\beta_6 \neq$	β ₈		β	$_{2}\neq\beta_{4}$	$\beta_2\neq\beta_6$	β	$\beta_4\neq\beta_6$
t-statist	ics	-0,462	0,36	3		3	,041	1,733		1,590
Significa	ince	0,645	0,71	7	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	0	,003	0,085		0,113

Table E.2: Value Relevance Analysis Results for Industry Group B: Energy

a. $E_{ii}^{X} = E_{ii}^{P}$ in models (BSE.1) and (BSE.5). $E_{ii}^{X} = E_{ii}^{G}$ in models (BSE.2) and (BSE.4). $E_{ii}^{X} = \left(E_{ii}^{G} + E_{ii}^{M}\right)$ in model (BSE.5). $BV_{a}^{X} = BV_{a}^{a}$ in model (BSE.1). $BV_{a}^{X} = BV_{a}^{a}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{a}^{X} = \left(BV_{a}^{G} + BV_{a}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.
c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Panel A	1: Resu	lts of regi	ression ^{a,b,}	С						
	(B	SE.1)	(BSE	.2)	(BSE	E.3)	(BSI	E.4)	(BS	E.5)
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{ii}}$	643317 (,140)	,104	-633288 (,105)	-,102	-510311 (,189)	-,082	-616756 (,118)	-,099	-655526 (,091)	-,106
$D_{it} \frac{1}{MV_{it}}$	9038 (,989)	,001	303743 (,605)	,035	194252 (,741)	,023	486321 (,417)	,057	526072 (,371)	,061
$\frac{E_{ii}^X}{MV_{ii}}$,481 (,288)	,068	6,492 (,000)	1,178	6,395 (,000)	1,163	6,465 (,000)	1,173	6,294 (,000)	,891
$D_{it} \frac{E_{it}^X}{MV_{it}}$	-1,432 (,061)	-,117	-7,720 (,000)	-1,257	-7,608 (,000)	-1,236	-7,606 (,000)	-1,238	-7,453 (,000)	-,608
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$							3,981 (,525)	,029		
$D_{ii} rac{E_{ii}^{MI}}{MV_{ii}}$							1,345 (,961)	,004		
$\frac{RE_{ii}^{S}}{MV_{ii}}$									6,979 (,000)	1,098
$D_{\mu} \frac{RE_{\mu}^{S}}{MV_{\mu}}$									-8,048 (,000)	-1,016
$\frac{RE_{it}^{A}}{MV_{it}}$									3,149 (,595)	,021
$D_{\mu} \frac{RE_{\mu}^{A}}{MV_{\mu}}$	822		641		(01		(28		37,718 (,041)	,081
$\frac{BV_{ii}^{\Lambda}}{MV_{ii}}$,832 (,000) 375	,857	,041 (,000)	,496	(,000)	,473	,038 (,000)	,493	,034 (,000)	,490
$D_{ii} \frac{BV_{ii}^{\Lambda}}{MV_{ii}}$	(,000)	-,254	(,424)	-,050	(,626)	-,030	-,107 (,207) 279	-,084	(,218)	-,068
$\frac{DV_{ii}}{MV_{ii}}$							(,744) 5 334	-,014		
$D_{ii} \frac{DV_{ii}}{MV_{ii}}$							(,392)	,067		
Adj. R ²	,620		,755		,753		,755		,760	
n	189		189		189		189		189	
Panel E	3: Vuor	ig test res	ults ^d							
Compariso	n of the val	lue relevance	of model 1 vs.	the value r	elevance of n	nodel 2		Vuong's Z-statisti	s Sig	nificance
Proportiona	ate consoli	dation model	vs. Parent-cor	npany-infor	rmation mode	1		3,20		0,001
Economic u	unit model	vs. Parent-cor	npany-inform	ation model	1			3,15		0,001
Economic u	unit model	vs. Proportion	ate consolidat	tion model				-0,36		0,359
Panel C	C: Testi	ng equali	ty of regr	ession c	coefficien	ets ^e				
	(BSE.4)							(BSE.5)	
Ho :		$\beta_2=\beta_4$	$\beta_6 = \beta_6$	β ₈		β	$_2 = \beta_4$	$\beta_2 = \beta_6$	l	$\beta_4 = \beta_6$
H1 :		$\beta_2\neq\beta_4$	$\beta_6 \neq $	β ₈		β	$_{2} \neq \beta_{4}$	$\beta_2\neq\beta_6$	I	$\beta_4 \neq \beta_6$
t-statisti	cs	0,393	1,05	2		-1	1,775	0,520		0,637
Significat	nce	0,695	0,29	4		0	,078	0,603		0,525

 Table E.3:
 Value Relevance Analysis Results for Industry Group C: Engineering and Machinery

a. $E_{it}^{X} = E_{it}^{P}$ in models (BSE.1) and (BSE.5). $E_{it}^{X} = E_{it}^{G}$ in models (BSE.2) and (BSE.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (BSE.5). $BV_{a}^{X} = BV_{a}^{P}$ in model (BSE.1). $BV_{a}^{X} = BV_{a}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{a}^{X} = \left(BV_{a}^{G} + BV_{a}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Panel A	1: Resul	lts of regi	ression ^{a,b,c}	с						
	(B	SE.1)	(BSE	.2)	(BSE	.3)	(BSI	E.4)	(BSE	E.5)
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{ii}}$	-651757 (,179)	-,088	154110 (,687)	,021	199022 (,597)	,027	200847 (,595)	,027	96639 (,802)	,013
$D_{it} \frac{1}{MV_{it}}$	411208 (,592)	,038	177778 (,768)	,016	148543 (,802)	,014	114244 (,850)	,011	130457 (,841)	,012
$\frac{E_{ii}^{\chi}}{MV_{ii}}$,676 (,210)	,065	10,352 (,000)	,989	10,113 (,000)	,981	10,099 (,000)	,965	9,803 (,000)	,940
$D_{it} rac{E_{it}^X}{MV_{it}}$	-1,337 (,499)	-,031	-12,920 (,000)	-,891	-12,649 (,000)	-,877	-12,817 (,000)	-,884	-12,674 (,000)	-,294
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$							3,717 (,853)	,028		
$D_{ii} \frac{E_{ii}^{MI}}{MV_{ii}}$							26,262 (,450)	,035		
$\frac{RE_{ii}^{S}}{MV_{ii}}$									10,283 (,000)	1,038
$D_{\mu} \frac{RE_{\mu}^{S}}{MV_{\mu}}$									-13,037 (,000) 7,459	-,838
$\frac{RE_{ii}}{MV_{ii}}$									(,479)	-,044
$D_{ii} \frac{RE_{ii}^{A}}{MV_{ii}}$	1 5 1 5		240		230		230		(,418)	,055
$\frac{BV_{ii}}{MV_{ii}}$	(,000)	,861	(,096) 975	,127	(,093)	,128	(,093)	,127	(,065)	,141
$D_{ii} \frac{BV_{ii}}{MV_{ii}}$	(,198)	-,085	(,000)	,196	(,000)	,196	,020 (,001)	,185	(,000)	,187
$\frac{DV_{ii}}{MV_{ii}}$							(,709) 34 907	,057		
$D_{it} \frac{BV_{it}}{MV_{it}}$							(,152)	,055		
Adj. R ²	,663		,766		,773		,772		,765	
n	192		192		192		192		192	
Panel I	3: Vuon	g test res	ults ^d							
Compariso	n of the val	ue relevance of	of model 1 vs.	the value r	elevance of m	odel 2		Vuong's Z-statistic	Sig	nificance
Proportiona	ate consolid	lation model	vs. Parent-con	npany-infor	mation mode	l		3,69	(0,000
Economic	unit model	vs. Parent-cor	npany-informa	ation model	l			3,97	(0,000
Economic	unit model	vs. Proportion	ate consolidat	ion model				2,53		0,006
Panel (C: Testi	ng equali	ty of regr	ession c	coefficien	ts ^e				
	(BSE.4)							(BSE.5)		
Ho :		$\beta_2 = \beta_4$	$\beta_6 = \beta_6$	3 ₈		β2	$\beta_2 = \beta_4$	$\beta_2 = \beta_6$	ß	$\beta_4 = \beta_6$
H1 :		$\beta_2\neq\beta_4$	$\beta_6 \neq \beta_6$	3 ₈		β ₂	$_{2} \neq \beta_{4}$	$\beta_2\neq\beta_6$	f	$\beta_4 \neq \beta_6$
t-statisti	cs	0,320	-0,32	9		-1	,028	1,645		1,690
Significa	nce	0,750	0,742	2	~~~~	0	,305	0,102		0,093

Table E.4: Value Relevance Analysis Results for Industry Group D: Supermarkets and Telecom

a. $E_{it}^{X} = E_{it}^{P}$ in models (BSE.1) and (BSE.5). $E_{it}^{X} = E_{it}^{G}$ in models (BSE.2) and (BSE.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (BSE.5). $BV_{a}^{X} = BV_{a}^{P}$ in model (BSE.1). $BV_{a}^{X} = BV_{a}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{a}^{X} = \left(BV_{a}^{G} + BV_{a}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.
c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Panel A	1: Result	ts of regi	ression ^{a,b,c}	ç						
	(BS	E.1)	(BSE	.2)	(BSE	.3)	(BSE	.4)	(BSE	.5)
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{\pi}}$	-875868 (,225)	-,104	-1519584 (,013)	-,178	-1534397 (,012)	-,179	-1395449 ,023	-,163	-1671100 ,016	-,195
$D_{it} \frac{1}{MV_{it}}$	939775 (,435)	,068	2433096 (,021)	,174	2329226 (,028)	,166	852108 ,473	,061	2859029 ,016	,204
$\frac{E_{ii}^X}{MV_{ii}}$,443 (,352)	,081	5,865 (,000)	1,135	5,863 (,000)	1,138	5,889 ,000	1,140	3,051 ,000	,548
$D_{it} rac{E_{it}^X}{MV_{it}}$	-,806 (,183)	-,106	-6,883 (,000)	-1,123	-6,845 (,000)	-1,115	-6,589 ,000	-1,075	-3,739 ,000	-,487
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$							1,875 ,874	,008		
$D_{it} \frac{E_{it}^{MI}}{MV_{it}}$							66,079 ,149	,067		
$\frac{RE_{it}^{s}}{MV_{it}}$									4,562 ,000	,569
$D_{ii} \frac{RE_{ii}^{3}}{MV_{ii}}$ RE^{A}									-6,403 ,000 10,841	-,597
$\frac{MD_{ii}}{MV_{ii}}$,326	,043
$D_{ii} \frac{RE_{ii}^A}{MV_{ii}}$									38,201 ,730	,015
$\frac{BV_{ii}^X}{MV_{ii}}$,820 (,000)	,880	,346 (,000)	,363	,334 (,000)	,354	,303 ,000	,318	,533 ,000	,559
$D_{\mu} \frac{BV_{\mu}^{X}}{MV}$	-,302	-,173	-0,035	-,014	0,008	,003	,220	,088	-,324	-,129
$\frac{MV_{u}}{BV_{u}^{MI}}$	(,041)	,	(,843)	,	(,903)	,	,200 2,690	083	,11/	,
							,169 2,620	,085		
$D_{tt} \frac{DV_{tt}}{MV_{tt}}$,401	,047		
Adj. R ²	,613		,727		,730		,736			
n	192		192		192		192			
Panel E	3: Vuong	g test res	ults ^d							
Compariso	n of the valu	e relevance o	of model 1 vs.	the value r	elevance of m	odel 2		Vuong's Z-statistic	Sign	ificance
Proportiona	ate consolida	tion model	vs. Parent-con	npany-info	mation mode	l		3,68	(,000
Economic u	unit model v	s. Parent-cor	npany-informa	ation mode	l			3,82	0	,000
Economic u	unit model v	s. Proportion	ate consolidat	ion model				1,28	0	,101
Panel (C: Testin	g equali	ty of regr	ession a	coefficien	ts ^e				
		(B	SE.4)		<u> </u>			(BSE.5)		
Ho :	$\beta_2 = \beta_4 \qquad \qquad \beta_6 = \beta_8$					β ₂	$= \beta_4$	$\beta_2=\beta_6$	β	$_4 = \beta_6$
H1 :		$\beta_2\neq\beta_4$	$\beta_6 \neq \beta$	8		β2	$a \neq \beta_4$	$\beta_2\neq\beta_6$	β	$_4 \neq \beta_6$
t-statisti	cs	0,385	-1,29	2		-2	2,836	-0,772	-(0,629
Significa	nce	0,701	0,198	8	Ĉ	0	,005	0,441	0	,530
V	D			- V	- C			$-\mathbf{v} = \begin{pmatrix} -c \end{pmatrix}$	-147)	

Table E.5: Value Relevance Analysis Results for Industry Group E: Household Goods and Textiles

a. $E_{it}^{X} = E_{it}^{P}$ in models (BSE.1) and (BSE.5). $E_{it}^{X} = E_{it}^{G}$ in models (BSE.2) and (BSE.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (BSE.5). $BV_{s}^{X} = BV_{s}^{P}$ in model (BSE.1). $BV_{s}^{X} = BV_{s}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{s}^{X} = \left(BV_{s}^{G} + BV_{s}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Panel A	1: Result	s of regi	ression ^{a,b,c}	c .						
	(BS	E.1)	(BSE	.2)	(BSE	.3)	(BSE	E.4)	(BSE	2.5)
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{ii}}$	2505943 ,050	,199	1534850 ,110	,122	1601730 ,095	,127	1633956 ,087	,130	1648841 ,090	,131
$D_{it} \frac{1}{MV_{it}}$	-1744123 ,322	-,099	-552275 ,674	-,031	-629426 ,632	-,036	-578501 ,657	-,033	-488340 ,721	-,028
$\frac{E_{ii}^X}{MV_{ii}}$	2,836 ,003	,429	8,123 ,000	1,260	7,906 ,000	1,226	8,199 ,000	1,272	7,693 ,000	1,164
$D_{it} \frac{E_{it}^X}{MV_{it}}$	-3,016 ,003	-,421	-9,463 ,000	-1,324	-9,243 ,000	-1,289	-9,564 ,000	-1,338	-8,946 ,000	-1,248
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$							-53,349 ,015	-,217		
$D_{it} \frac{E_{it}^{MI}}{MV_{it}}$							51,486 ,054	,153		
$\frac{RE_{ii}^{S}}{MV_{ii}}$									8,526 ,000	,652
$D_{ii} \frac{RE_{ii}^s}{MV_{ii}}$									-11,048 ,000	-,580
$\frac{RE_{it}^{A}}{MV_{it}}$									12,034 ,467	,053
$D_{ii} \frac{RE_{ii}^A}{MV_{ii}}$	4 000		640						-18,521 ,393	-,067
$\frac{BV_{ii}^{\chi}}{MV_{ii}}$	1,009 ,000	,570	,640 ,001	,228	,660 ,001	,237	,595 ,003	,212	,600 ,004	,214
$D_{it} \frac{BV_{it}^X}{MV_{it}}$	-,198 ,454	-,065	,663 ,048	,113	,612 ,065	,106	,773 ,024	,131	,490 ,210	,083
$\frac{BV_{ii}^{MI}}{MV_{ii}}$							24,585 ,003	,290		
$D_{ii} \frac{BV_{ii}^{MI}}{MV_{ii}}$							-28,001 ,004	-,257		
Adj. R ²	,515		,678		,677		,688		,676	
n	199		199		199		199		199	
Panel I	B: Vuong	g test res	ults ^d					•		
Compariso	n of the valu	e relevance o	of model 1 vs.	the value r	elevance of m	odel 2		Vuong's Z-statistic	Sig	nificance
Proportiona	ate consolida	tion model	vs. Parent-con	npany-infor	mation model	l		3,10	(0,001
Economic	unit model v	s. Parent-cor	npany-informa	ation model	l			3,10	(),001
Economic	unit model v	s. Proportion	ate consolidat	ion model				-0,58	(),282
Panel (C: Testin	g equali	ty of regr	ession c	coefficien	ts ^e				
		(B	SE.4)		ž			(BSE.5)		
Ho :		$\beta_2 = \beta_4$ $\beta_6 = \beta_8$				β2	$_2 = \beta_4$	$\beta_2=\beta_6$	β	$_4 = \beta_6$
H1 :		$\beta_2\neq\beta_4$	$\beta_6 \neq \beta$	8		β2	$_2 \neq \beta_4$	$\beta_2\neq\beta_6$	β	$_4 \neq \beta_6$
t-statisti	cs	2,806	-2,96	3		-(),928	-0,262	-	0,212
Significa	nce	0,006	0,003	3	Ŝ	0	,354	0,794),833
								(

Table E.6: Value Relevance Analysis Results for Industry Group F: Software and Computer Services

a. $E_{it}^{X} = E_{it}^{P}$ in models (BSE.1) and (BSE.5). $E_{it}^{X} = E_{it}^{G}$ in models (BSE.2) and (BSE.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (BSE.5). $BV_{s}^{X} = BV_{s}^{P}$ in model (BSE.1). $BV_{s}^{X} = BV_{s}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{s}^{X} = \left(BV_{s}^{G} + BV_{s}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Panel A: Results of regression ^{a,b,c}											
	(BSE.1)		(BSE.2)		(BSE.3)		(BSE.4)		(BSE.5)		
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA	
$\frac{1}{MV_{ii}}$	-970546 (,475)	-,045	-1484244 (,198)	-,069	-344590 (,769)	-,016	-3538855 (,003)	-,165	-629075 (,603)	-,029	
$D_{it} \frac{1}{MV_{it}}$	-1307394 (,706)	-,026	-5830365 (,190)	-,114	-6998945 (,123)	-,137	-2267346 (,613)	-,044	-13836620 (,007)	-,271	
$\frac{E_{ii}^{\chi}}{MV_{ii}}$,672 (,245)	,118	7,440 (,000)	1,248	7,155 (,000)	1,224	6,971 (,000)	1,169	7,854 (,000)	1,376	
$D_{ii} rac{E_{ii}^X}{MV_{ii}}$	-0,026 (,971)	-,004	-8,352 (,000)	-1,235	-8,060 (,000)	-1,191	-7,913 (,000)	-1,170	-8,568 (,000)	-1,229	
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$							-11,344 (,057)	-,132			
$D_{it} \frac{E_{it}^{MI}}{MV_{it}}$							22,285 (,590)	,042			
$\frac{RE_{ii}^{S}}{MV_{ii}}$									9,374 (,000)	1,236	
$D_{ii} \frac{RE_{ii}^s}{MV_{ii}}$									-11,026 (,000)	-1,200	
$\frac{RE_{ii}^{A}}{MV_{ii}}$									-3,029 (,393)	-,037	
$D_{ii} \frac{RE_{ii}^A}{MV_{ii}}$									-6,901 (,744)	-,019	
$\frac{BV_{it}^{X}}{MV_{it}}$	1,301 (,000)	,925	,409 (,000)	,300	,253 (,019)	,205	,855 (,000)	,628	,386 (,001)	,284	
$D_{ii} \frac{BV_{ii}^X}{MV_{ii}}$	-,467 (,017)	-,213	,479 (,077)	,171	,629 (,019)	,229	-0,089 (,766)	-,032	,974 (,001)	,349	
$\frac{BV_{u}^{Ml}}{MV_{u}}$							-1,602 (,048)	-,169			
$D_{it} \frac{BV_{it}^{Ml}}{MV_{it}}$							3,377 (,357)	,071			
Adj. R ²	,607		,692		,662		,722		,730		
n	197		197		197		197		197		
Panel I	3: Vuong	g test res	ults ^d								
Compariso	n of the valu	ie relevance o	of model 1 vs.	the value r	elevance of m	odel 2		Vuong's Z-statisti	s Significance		
Proportiona	ate consolida	ation model	vs. Parent-com	npany-info	rmation mode	l		2,13	0,016		
Economic	unit model v	s. Parent-cor	npany-informa	tion model	1			1,34	0,089		
Economic	unit model v	s. Proportion	ate consolidat	ion model				-3,69	C	,000	
Panel C	C: Testin	ıg equali	ty of regre	ession a	coefficien	ts ^e					
(BSE.4) (BSE.5)											
Ho : $\beta_2 = \beta_4$		$\beta_6=\beta_8$			$\beta_2 = \beta_4$		$\beta_2=\beta_6$	β.	$\beta_4=\beta_6$		
H1 :	$\beta_2\neq\beta_4\qquad\qquad\beta_6\neq\beta_8$			β2	$\beta_2\neq\beta_4\qquad\qquad\beta_2\neq\beta_6$		$\beta_4\neq\beta_6$				
t-statisti	cs	2,915	2,686	5		-2	2,724	3,053	3	3,544	
Significa	nce	0,004	0,008	3	Ĉ	0	,008	0,003	0	,000	

Table E.7: Value Relevance Analysis Results for Industry Group G: Non-Cyclical Consumer Goods

a. $E_{it}^{X} = E_{it}^{P}$ in models (BSE.1) and (BSE.5). $E_{it}^{X} = E_{it}^{G}$ in models (BSE.2) and (BSE.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (BSE.5). $BV_{a}^{X} = BV_{a}^{P}$ in model (BSE.1). $BV_{a}^{X} = BV_{a}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{a}^{X} = \left(BV_{a}^{G} + BV_{a}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Panel A: Results of regression ^{a,b,c}										
	(BSE.1)		(BSE.2)		(BSE.3)		(BSE.4)		(BSE.5)	
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{it}}$	-1762039 (,158)	-,160	-3001246 (,003)	-,272	-2548524 (,009)	-,231	-2727855 (,007)	-,247	-3448937 (,001)	-,313
$D_{it} \frac{1}{MV_{it}}$	3741314 (,010)	,289	4986336 (,000)	,385	4601167 (,000)	,355	4677645 (,000)	,361	5780662 (,000)	,446
$\frac{E_{ii}^{\chi}}{MV_{ii}}$	5,537 (,000)	,683	8,183 (,000)	1,048	7,819 (,000)	1,014	7,999 (,000)	1,024	8,599 (,000)	1,061
$D_{it} \frac{E_{it}^X}{MV_{it}}$	-5,793 (,000)	-,582	-8,852 (,000)	-,825	-8,381 (,000)	-,775	-8,689 (,000)	-,809	-8,625 (,000)	-,867
$\frac{E^{MI}_{it}}{MV_{i(t-1)}}$,150 (,990)	,002		
$D_{ii} \frac{E_{ii}^{MI}}{MV_{ii}}$							-32,213 (,224)	-,137		
$\frac{RE_{ii}^{S}}{MV_{ii}}$									7,351 (,000)	,634
$D_{\mu} \frac{RE_{\mu}^{s}}{MV_{\mu}}$									-8,003 (,000) 22,776	-,492
$\frac{RE_{ii}}{MV_{ii}}$									23,770 (,007) 7 392	,105
$\frac{D_{u}}{MV_{u}}$ $\frac{RV_{u}^{X}}{RV_{u}}$.632		.349		.330		.328		(,764) .342	,012
$\frac{MV_{u}}{MV_{u}}$	(,000)	,586	(,000)	,271	(,000)	,263	(,000)	,255	(,000)	,266
$D_{ii} \frac{BV_{ii}^X}{MV_{ii}}$	-,294 (,048)	-,110	-0,017 (,931)	-,004	0,030 (,874)	,003	-,205 (,338)	-,047	,114 (,544)	,026
$\frac{BV_{ii}^{MI}}{MV}$							1,247	,068		
MV_{ii} BV_{ii}^{MI}							(,549) 13,588	100		
$D_{ii} \frac{u}{MV_{ii}}$							(,084)	,199		
Adj. R ²	,648		,747		,751		,754		,760	
n	195		195		195		195		195	
Panel E	B: Vuong	g test res	ults ^d							
Compariso	n of the valu	e relevance of	of model 1 vs.	the value r	elevance of m	odel 2		Vuong's Z-statistic	Sign	ificance
Proportiona	ate consolida	tion model	vs. Parent-com	npany-infor	mation model	l		3,02	0,001	
Economic u	unit model v	s. Parent-cor	npany-informa	tion model	l			3,38	0,000	
Economic unit model vs. Proportionate consolidation model 0,72 0,237								,237		
Panel C: Testing equality of regression coefficients ^e										
		(B	SE.4)		<u> </u>			(BSE.5)		
Ho : $\beta_2 = \beta_4$		$\beta_6 = \beta_8$			$\beta_2 = \beta_4$		$\beta_2=\beta_6$	β	$\beta_4=\beta_6$	
H1 :	H1 : $\beta_2 \neq \beta_4 \qquad \qquad \beta_6 \neq \beta_8$			β2	$_{2}\neq\beta_{4}$	$\neq \beta_4 \qquad \qquad \beta_2 \neq \beta_6$		$_4 \neq \beta_6$		
t-statisti	cs	0,660	-0,440	0		1	,668	-1,740	-	1,901
Significa	nce	0,510	0,661	l	Ŝ	0	,097	0,084	(,059

Table E.8: Value Relevance Analysis Results for Industry Group F: Cyclical Service

 Industries

a. $E_{it}^{X} = E_{it}^{P}$ in models (BSE.1) and (BSE.5). $E_{it}^{X} = E_{it}^{G}$ in models (BSE.2) and (BSE.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (BSE.5). $BV_{s}^{X} = BV_{s}^{P}$ in model (BSE.1). $BV_{s}^{X} = BV_{s}^{G}$ in models (BSE.2), (BSE.4), and (BSE.5). $BV_{s}^{X} = \left(BV_{s}^{G} + BV_{s}^{M}\right)$ in model (BSE.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

APPENDIX F: Deflation by Lagged Market Value – Results of the Value Relevance Analysis

Panel A: Results of regression ^{a,b,c}										
	(LMV.1)		(LMV.2)		(LMV.3)		(LMV.4)		(LMV.5)	
	В	BETA	В	BETA	В	BETA	В	BETA	В	BETA
$\frac{1}{MV_{i(t-1)}}$	449420 (,179)	,032	-310629 (,296)	-,022	-150331 (,612)	-,011	-288865 (,335)	-,021	-457194 (,138)	-,033
$D_{it} \frac{1}{MV_{i(t-1)}}$	933810 (,066)	,043	1800380 (,000)	,084	1679806 (,000)	,078	1783152 (,000)	,083	1990174 (,000)	,092
$\frac{E_{it}}{MV_{i(t-1)}}$	1,188 (,000)	,154	7,569 (,000)	,992	7,491 (,000)	,988	7,566 (,000)	,992	6,407 (,000)	,831
$D_{ii} \frac{E_{ii}}{MV_{i(i-1)}}$	-1,115 (,000)	-,100	-8,328 (,000)	-,880	-8,238 (,000)	-,869	-8,317 (,000)	-,879	-6,893 (,000)	-,619
$\frac{E_{it}^{MI}}{MV_{i(t-1)}}$,902 (,812)	,005		
$D_{ii} \frac{E_{ii}^{MI}}{MV_{i(t-1)}}$							6,246 (,495)	,011		
$\frac{RE^S_{it}}{MV_{i(t-1)}}$									6,861 (,000)	,683
$D_{it} \frac{RE_{it}^S}{MV_{i(t-1)}}$									-7,944 (,000)	-,544
$\frac{RE^{A}_{it}}{MV_{i(t-1)}}$									7,609 (,012)	,064
$D_{it} rac{RE^A_{it}}{MV_{i(t-1)}}$									-7,476 (,041)	-,052
$\frac{BV_{it}}{MV_{i(t-1)}}$	1,054 (,000)	,723	,398 (,000)	,264	,364 (,000)	,248	,392 (,000)	,259	,471 (,000)	,312
$D_{ii} \frac{BV_{ii}}{MV_{i(t-1)}}$	-,326 (,000)	-,111	,162 (,011)	-,050	,182 (,004)	,058	,161 (,017)	,050	0,0716 (,284)	,022
$\frac{BV_{it}^{MI}}{MV_{i(t-1)}}$,116 (,802)	,006		
$D_{it} \frac{BV_{it}^{Ml}}{MV_{i(t-1)}}$,003563 (,997)	,000		
Adj. R ²	,580		,671		,670		,671		,651	
n	1792		1792		1792		1792		1792	
Panel I	B: Vuong	g test res	<i>ults^d</i>							
Vuong?g										

Table F.1: Results of Value Relevance Analysis – Deflation by Lagged Market Value

Comparison of the value relevance of model 1 vs. the value relevance of model 2 Vuong's Z-statistic Significance Proportionate consolidation model vs. Parent-company-information model 5,73 0,000 Economic unit model vs. Parent-company-information model 5,54 0,000 Economic unit model vs. Proportionate consolidation model -1,07 0,142

Panel C: Testing equality of regression coefficients^e

	(LM	IV.4)	Š	(LMV.5)				
H _o :	$\beta_2 = \beta_4$	$\beta_6 = \beta_8$	3	$\beta_2=\beta_4$	$\beta_2 = \beta_6$	$\beta_4=\beta_6$		
H_1 :	$\beta_2\neq\beta_4$	$\beta_6\neq\beta_8$		$\beta_2\neq\beta_4$	$\beta_2\neq\beta_6$	$\beta_4\neq\beta_6$		
t-statistics	1,734	0,580		-2,261	-0,395	-0,246		
Significance	0,083	0,562		0,024	0,693	0,806		

a. $E_{it}^{X} = E_{it}^{P}$ in models (LMV.1) and (LMV.5). $E_{it}^{X} = E_{it}^{G}$ in models (LMV.2) and (LMV.4). $E_{it}^{X} = \left(E_{it}^{G} + E_{it}^{M}\right)$ in model (LMV.5). $BV_{u}^{x} = BV_{u}^{P}$ in model (LMV.1). $BV_{u}^{x} = BV_{u}^{O}$ in models (LMV.2), (LMV.4), and (LMV.5). $BV_{u}^{x} = \left(BV_{u}^{O} + BV_{u}^{M}\right)$ in model (LMV.3).

b. B is a symbol for the unstandardized regression coefficient and BETA is a symbol for the standardized regression coefficient beta.

c. Numbers in brackets are significance levels. The significance level benchmark is set at 5%.

d. A significant positive Z-statistic indicates that model 2 is rejected in favour of model 1.

e. Subscripts of regression coefficients match corresponding regression coefficient subscripts from the aggregate sample analysis.

Deflation by Lagged Market Value

In order to provide a qualitative check on the empirical results of this master thesis, regressions have been run by using models, where the spurious effects of scale have been approached with deflation by 1-year-lagged market value. Results of empirical value relevance analysis in Table F.1 are thus based on the following regression models:

$$\frac{MV_{it}}{MV_{i(t-1)}} = \beta_0 \frac{1}{MV_{i(t-1)}} + \beta_1 D_{it} \frac{1}{MV_{i(t-1)}} + \beta_2 \frac{E_{it}^P}{MV_{i(t-1)}} + \beta_3 D_{it} \frac{E_{it}^P}{MV_{i(t-1)}} + \beta_4 \frac{BV_{it}^P}{MV_{i(t-1)}} + \beta_5 D_{it} \frac{BV_{it}^P}{MV_{i(t-1)}} + \varepsilon_{it}$$
(LMV.1)

$$\frac{MV_{ii}}{MV_{i(t-1)}} = \beta_0 \frac{1}{MV_{i(t-1)}} + \beta_1 D_{ii} \frac{1}{MV_{i(t-1)}} + \beta_2 \frac{E_{ii}^G}{MV_{i(t-1)}} + \beta_3 D_{ii} \frac{E_{ii}^G}{MV_{i(t-1)}} + \beta_4 \frac{BV_{ii}^G}{MV_{i(t-1)}} + \beta_5 D_{ii} \frac{BV_{ii}^G}{MV_{i(t-1)}} + \varepsilon_{ii}$$
(LMV.2)

$$\frac{MV_{it}}{MV_{i(t-1)}} = \beta_0 \frac{1}{MV_{i(t-1)}} + \beta_1 D_{it} \frac{1}{MV_{i(t-1)}} + \beta_2 \frac{\left(E_{it}^G + E_{it}^M\right)}{MV_{i(t-1)}} + \beta_3 D_{it} \frac{\left(E_{it}^G + E_{it}^M\right)}{MV_{i(t-1)}} + \beta_4 \frac{\left(BV_{it}^G + BV_{it}^M\right)}{MV_{i(t-1)}} + \beta_5 D_{it} \frac{\left(BV_{it}^G + BV_{it}^M\right)}{MV_{i(t-1)}} + \varepsilon_{it} \frac{\left(BV_{it}^H + BV_{$$

$$\frac{MV_{ii}}{MV_{i(t-1)}} = \beta_0 \frac{1}{MV_{i(t-1)}} + \beta_1 D_{ii} \frac{1}{MV_{i(t-1)}} + \beta_2 \frac{E_{ii}^G}{MV_{i(t-1)}} + \beta_3 D_{ii} \frac{E_{ii}^G}{MV_{i(t-1)}} + \beta_4 \frac{E_{ii}^M}{MV_{i(t-1)}} + \beta_5 D_{ii} \frac{E_{ii}^M}{MV_{i(t-1)}} + \beta_6 \frac{BV_{ii}^G}{MV_{i(t-1)}} + \beta_7 D_{ii} \frac{BV_{ii}^G}{MV_{i(t-1)}} + \beta_8 \frac{BV_{ii}^M}{MV_{i(t-1)}} + \beta_9 D_{ii} \frac{BV_{ii}^M}{MV_{i(t-1)}} + \varepsilon_{ii}$$
(LMV.4)

$$\frac{MV_{it}}{MV_{i(t-1)}} = \beta_0 \frac{1}{MV_{i(t-1)}} + \beta_1 D_{it} \frac{1}{MV_{i(t-1)}} + \beta_2 \frac{E_{it}^P}{MV_{i(t-1)}} + \beta_3 D_{it} \frac{E_{it}^P}{MV_{i(t-1)}} + \beta_4 \frac{RE_{it}^S}{MV_{i(t-1)}} + \beta_5 D_{it} \frac{RE_{it}^S}{MV_{i(t-1)}} + \beta_6 \frac{RE_{it}^A}{MV_{i(t-1)}} + \beta_7 D_{it} \frac{RE_{it}^A}{MV_{i(t-1)}} + \beta_8 \frac{BV_{it}^G}{MV_{i(t-1)}} + \beta_9 D_{it} \frac{BV_{it}^G}{MV_{i(t-1)}} + \varepsilon_{it}$$
(LMV.5)