

Stock Volatility Consequences when Using the Equity Method in Parent Company

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Abstract

This paper contributes to the recent literature on the information transparency and its impact on stock price volatility. Some authors claim that more disclosure might reduce volatility of the stock price. Since 2005 the use of IFRS is mandatory for listed companies in the EU. In some countries, like Denmark, corporate law allows the use of the Equity Method in separate financial statements to measure investments in subsidiaries, which is contrary to IFRS. Lately, IFRS has re-allowed the use of the Equity Method (probably to be approved by the EU soon). This study investigates the stock volatility consequences of using the Equity Method so far in Denmark. We had collected all Danish non-financial and non-insurance companies disclosing consolidated Group and Parent company financial statements. Also, we selected volatility measures by use of the ORBIS-database, and analyses it all together. Our tests showed lower level of volatility for the Equity Method using group of companies compared to the non-Equity method using group of companies, also after controlling for differences in industries and transparency levels in the two groups' companies. Regression analyses confirmed the tendency that Equity Method and lower volatility follows each other. However, we did not find evidence that the specific account "Reserve for net Revaluations under the Equity Method" should be a significant part of the relation. It seems that most important for the size of the volatility is the difference between consolidated Group Equity and Parent Equity. However, whether a smaller difference stems from a relatively high part of group income being realized in parent's financial statements, or whether it stems from a relatively high part of group income being recognized in subsidiaries by use of the Equity Method seems not to be important.

Keywords: Equity method; Financial accounting information; IFRS; Volatility

Introduction

The relationship between accounting information disclosure and stock volatility is stimulating considerable interest across researchers and importantly capital market investors, forecast analysts and management. Volatility is simply defined as a measure of dispersion around the mean or average return of a security. It is a measure of the range of an asset price about its mean level over a fixed amount of time [1]. It follows that volatility is associated with the variance of an asset price. If a stock is labeled as volatile, then it is plausible that there will be a systematic variance of its mean over time. Conversely, a less volatile stock will have a price that will deviate relatively little over time. There are several reasons why an increase in disclosure of accounting information should reduce stock volatility. First, is the effect on stock volatility arising from the role of accounting information disclosure in mitigating uncertainty? Accounting disclosures may reduce the magnitude of the impact of news about a firm's performance, which would reduce stock price volatility [2,3]. Second, retrospectively, the market microstructure theory also suggest that by increasing the amount of public information, disclosure is likely to reduce information asymmetries in the market value that result in pronounced price changes in response to changes in demand for the stock [4]. Finally, disclosure may reduce heterogeneity of beliefs about the true value of the firm. It may thus reduce both the volume traded and the volatility of the stock price.

Conversely, one can also think of a number of reasons why an increase in disclosure might increase stock volatility. First, an increase in disclosure implies that more information is released, which in and of itself might move the price and increase volatility [5]. Second, an increase in the disclosure of information relies on sophisticated investors to interpret and put the disclosed information into context.

Indeed specific disclosure requirements could provide the markets with more data that might be misconstrued by analysts. More disclosure might thus inject more market volatility [6,7].

Consequently, several plausible theoretical links can be established between accounting information and stock return volatility. However, fundamentally the theory of market efficiency suggests that conditional variance of accounting information is part of the conditional variance of stock returns. Thus if current accounting information is more uncertain, thereby increasing the uncertainty of firm's future cash flows, future stock returns are expected to be more volatile [8].

As an example of this setting we focus on the use of the equity method in parent companies for recognizing income in subsidiaries. Per se the equity method contributes more information since it presents income recognized in the parent when recognized in the subsidiaries, no matter if the parent has realized it by receiving dividends, as cash or as receivables or not. For the parent's shareholders this information is valuable since it shows the total equity of which each shareholder holds a part. Since 2005, the IASB in their appropriate accounting standard, IAS 27, "Consolidated Financial Statements and Accounting for Investments in Subsidiaries", has not permitted the use of the equity

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method for measurement of investments in subsidiaries in the separate financial statements of the parent.

In some countries, corporate law requires or allows the use of the equity method in separate financial statements to measure investments in subsidiaries which consequently require the companies to present two sets of financial statements to meet the requirement of both IAS 27 and local laws. Recently the IASB has reconsidered this and lately, August 2014, an amendment to IAS 27, "Equity Method in Separate Financial Statements" was issued, allowing the reuse of the equity method on or after 1st January 2016, and even permitting earlier adaption [9].

This paper focus on the situation in a European country, Denmark, In accordance with local GAAP, the equity method is allowed but before 2005 the equity method was mandatory; both in accordance with local GAAP. We will present a short description of the setting, and present some of the derived consequences of the companies' choices. Hereby we will provide relevant input for the understanding and decision as to choose using the equity method or not [10].

The remainder of the paper is structured in the following way. In section 2 we provide the motivation for the hypotheses by examining prior literature. In section 3 we describe the methodology, i.e., the particularities of the Danish dataset and the model development. In section 4 we provide the analyses and results in accordance with the hypotheses. Finally we conclude the paper in section 5.

Previous Literature and Hypotheses Development

In this section we provide the motivation and literature review as the basis for developing our hypotheses of the relationship between parent company accounting practice and the company's equity volatility.

Previous literature suggests that financial transparency causes several benefits for companies. It is, for example, a means of reducing the cost of capital and increasing the market liquidity [11,12]. Leuz & Verrecchia [13], analyzing the German market, conclude that the information asymmetry declines with the level of disclosure increasing, and it is well documented that information asymmetry influences the market efficiency. Diamond & Verrecchia [4], Verrecchia [14] and Zhang [15] find a negative relationship between the level of information asymmetry and the market efficiency. There is also evidence of a negative relationship between company disclosure and price volatility, which can be justified by several reasons. First, the information asymmetry decreases with more transparency, allowing stock price volatility smoothing. Second, if companies send regularly information to the market, the impact of new information about its performance will decrease, causing a lower variation of prices. Finally, with more transparency, the company's valuation will be more consensual for the investors, thus the volatility will be reduced. The idea that the quality of disclosure and transparency could diminish the company's stock price volatility can motivate companies to disclose more information. If companies convey information to the market frequently, the impact of new information about its performance will decrease, causing a lower variation on prices. As disclosure increases, the company's risk decreases, causing a smooth in the stock price volatility [3,16-18].

According to Kothari [19] the theoretical literature shows that both mandated and voluntary disclosures reduce information asymmetries among informed and uninformed market participants [4]. Reduced information asymmetry lowers (the information asymmetry component of) the cost of capital by shrinking bid-ask spreads, enhancing trading volume, and diminishing stock-return volatility level [13]. According to Healy & Palepu [11] on corporate disclosure, reduced information asymmetry has desirable effects on the volatility of security prices.

Past research has associated earnings quality with idiosyncratic return volatility [20]. This is because uncertainty about future profitability of companies is expected to influence their stock return volatility [21,22], while the quality of earnings has been considered as a proxy for so-called "information risk" or "information uncertainty". This risk refers to the likelihood for company-specific information important for investor decisions to be of poor quality [23], or the degree to which corporate value can be reasonably estimated by the most knowledgeable investors at an acceptable cost [24]. In this direction, Rajgopal & Venkatachalam [20] distinguish between sources of uncertainty about the future profitability of companies i.e. uncertainty about future cash flows from an operating point of view, vs. information about future cash flows stemming from the quality of accounting information, and confirm that lower earnings quality is associated with higher idiosyncratic stock market volatility, even after controlling for volatility in company operating performance.

Lang & Lundholm [2] find that, contrary to expectations, disclosure quality is positively associated with stock return volatility. They conjecture that stock return volatility proxies for information asymmetry, which managers are trying to reduce through higher levels of disclosure. Healy et al. [25] report that sustained increases in disclosure quality result in higher levels of institutional ownership, which they cite as a benefit of improving disclosure quality. However, Sias [26] and Potter [27] both provide evidence that higher institutional ownership is associated with higher stock return volatility. These latter two findings raise the possibility that the positive association between disclosure quality and stock return volatility found in Lang & Lundholm [2] is due to an indirect link between disclosure quality and volatility through the attraction of institutional investors.

Bushee & Noe [3] conclude that in the US market, better disclosure gives good signal to the market, removing the uncertainty caused by the non-liberation of information. Consequently, it results in a reduction of prices volatility. They document a higher volatility in small companies and justify it with a "corporate disclosure". The authors conclude that the smooth behavior on stock prices decreases the company's cost of capital. However, they demonstrate that the effect of disclosure on volatility is complex, and may depend on the type investors attracted to the company. Analyzing the financial sector, from 1993 to 2000, Baumann & Nier [28] found also a negative relationship between disclosure and volatility. Ding et al. [29] analyse the transparency of 63 companies of Baltic States of Estonia, Latvia and Lithuania, and compared them with 58 companies from Nordic countries (Denmark, Finland and Sweden), using two proxies of financial transparency. They further investigate economic consequences (i.e. stock price volatility) of variations in disclosure in the two regions. The main conclusion achieved in the comparison between the two regions is that Baltic countries have a lower level of financial transparency than the Nordic ones. The authors found a negative relationship between transparency and volatility for both measures in the Nordic countries, and for one of the measures in the Baltic sample. Thus, the authors conclude that Baltic investors are only interested in financial information, whereas in Nordic countries, investors give also relevance to information towards governance and ownership.

In 2002 the European Union decided that all listed companies in all member countries should use International Financial Reporting Standards effective from 2005. For groups, IFRS was only mandatory for the companies' consolidated financial statements. For the parent companies in Denmark as well as the other EU member countries, the use of IFRS was optional, leaving it to each member state to decide. When choosing Danish GAAP for the parent company in contrary to

choosing IFRS, it was possible to continue using the equity method. In fact, earlier on it was mandatory to use the equity method in Denmark, and consequently some companies felt it was important to keep this accounting practice, presumably due to expectations or demands from their accounting users. However, the majority of the companies decided to switch to IFRS in the parent company as well, making it easier to present financial statements, since only one set of accounting practice would be needed. Further, some presented the argument that the net reported income and value according to the equity method would almost completely be represented by the differences between parent and consolidated net profit in the income statement and respectively the equity in the balance sheet.

It has been pointed out that the banning of the equity method in the parent company also lead to a reduction of possible recognition and measuring methods from three to two, which everything else being equal would improve the possible comparability of different companies, which is one of the overall framework objectives. And this might contribute to reduction in volatility due to less uncertainty as a result of clearer comparability. However, although this comparability is good for the capital market for seeking and distributing capital and wealth, for the individual share the absence of the equity method introduces some uncertainty in the financial statements. There is simply some disclosure missing which potentially could be of very large importance. This would especially be the case where a relatively big part of the group income in fact is created in the subsidiaries.

The problems are centred where the unrealised part of the earnings in subsidiaries is not separated in notes to the parent company's financial statement showing in detail how income and value is created. Hereby the parent's shareholders lack valuable information telling whether the earnings are real, or "just" an earnings opinion. In Danish GAAP the use of the equity method is accompanied by restrictions on the parent's equity, i.e. partitioning the subsidiary income and equity in realised and non-realised parts where the non-realised part is an equity reserve which among other things cannot be distributed as dividends to parent's shareholders. For a parent company the income from subsidiaries can be paid out to its shareholders only after it has been realised by receiving dividends.

When a company uses the equity method, the difference between the group equity and parent equity will be very small by nature, and the equity reserve note contributes with helpful information. When a company do not use the equity method, the size of the difference between the group equity and parent equity will depend on the size of income in the subsidiaries and it will be larger. Correspondingly as the difference is larger, the greater is also information uncertainty for the parent's shareholders. Therefore the interpretation of the difference is expected to show greater disagreement among market participants and thus greater volatility as a natural consequence.

In accordance with the literature a multitude of reasons exist why smaller volatility could be expected, but we suggest the two hypotheses below for analyses. The first expresses the usual setting and basic expectation that more disclosure is better, since using the equity method without any doubts lead to additional information when compared with the cost method:

H₁: The use of the equity method (and the presence of an equity reserve) is accompanied by smaller volatility level.

Following this basic relation we want to challenge which parts of the accounting practice managed differences between companies using equity method and companies using cost method when recognising income from subsidiaries. We are not sure which parts are the most

important, but we assume that the mandatory equity reserve for net revaluation under the equity method resulting from the use of the equity method is recommendable as part of the relation. For our further analyses we suggest the following hypothesis:

H₂: The equity reserve and the relationships between the two equities, group equity and parent equity, are key variables explaining the size of the volatility level.

Methodology and Research Design

In this section we first describe the dataset and the variables applied. Second we present the models used to test the hypotheses developed in section 2. Finally we provide some initial descriptive statistics.

Dataset selection and variables

Since some companies have more than one share group listed on the stock exchange our first task was to select only one of these share groups per company; ideally the most important one, which probably is either the one with the largest number of shares or the one with the largest volume of traded shares during the last year. The selection process can also be followed in Table 1.

Among the rest of the Danish stock market we selected all non-financial and all non-insurance Danish companies. Three foreign companies were deselected, since these companies' parent companies are not obliged to follow Danish regulation. We finally deselected all companies not being a group, i.e. the companies not having both a parent and one or more subsidiaries and consequently a subsidiary income recognition issue in the parent company.

Finally, as shown in Table 1 we had 97 companies listed on the Danish stock exchange where use of the equity method is an issue. Concerning the accounting practice for recognition of subsidiaries income, the 97 companies are distributed as shown in the last part of Table 1.

Since the use of equity method could be a consequence of being part of a specific business industry, we also selected NACE based industry numbers via the ORBIS database in order to investigate this in detail. Due to the small total number of companies we divided the industries into nine sectors including familiarly industries. The distribution of the 97 companies into the two groups is shown in Table 2.

For any relevant significance level when using a chi-square test of differences lead to the conclusion of similarity between industry/sector structures for the two groups.

In Table 3 below we present our data. For our tests all the accounting data were hand collected. Only the volatility measures and the NACE codes were not since these were provided by the ORBIS database. The basis for the hand collection procedure was the latest parent and group financial statements for each company corresponding to the ORBIS database volatility data.

Measuring statistics and Models

From the companies' annual reports the turnover, net result, total assets, net interest bearing debt and equity were retrieved from the consolidated group financial statements, while the equity, net results and reserve for net revaluation under the equity method were retrieved from the parent's financial statements.

Concerning the financial measures, several "classic" profitability, size and risk oriented measures were calculated. All the following three equity size related key variables are assumed to be important, i.e. the group equity, the parent equity and the equity method related reserve for net revaluation. In accordance with previous literature, all numbers

Explanation	Number of companies
Total number of listed shares on the OMX Copenhagen.	151
Reduction due to companies having shares from more than one share group listed on the stock exchange.	8
Deselection of foreign companies listed on the stock exchange since these companies are not obliged to follow Danish GAAP regulation	3
Deselection of all financial and insurance companies.	28
Deselection of companies who were not groups and therefore not	15
Companies left for analyses	97
The 97 companies can further be grouped:	
Equity Recognition method	Number of companies
IFRS GAAP – cost method	80
DK-GAAP – cost method	5
DK-GAAP – equity method	12
Total number of companies	97

Table 1: Sampling the dataset.

were normalized by the total assets before calculation. They were identified as follows:

Financial ratios calculated and used for our analyses

- FLEV, the financial leverage of the company as a relation between net interest bearing debt and equity size (both in the group balance sheet).
- Size, the inverse of the total assets (in the group balance sheet).
- EPQ, the relation between the equity and the total assets (both in the group balance sheet).
- UDEQR, the relation between the reserve for net revaluations under the equity method and the equity size (the first from the parent balance sheet, and the second in the group balance sheet).
- ParEQPG, the relation between the equity size in the parent company and the equity size in the consolidated group (the first from the parent balance sheet, and the second in the group balance sheet).

In many instances size and risk oriented variables are referred to as independent control variables. However, in our study we consider the following robustness check oriented variable as control variables. They were identified as follows:

Variables for control and robustness checks

- CIFAR, a transparency level measurement variable, derived similarly as Ding et al. [29].
- Ownership, the distribution of major shareholders.
- Market Value (equity and/or company), the market value of equity respectively the company measures the market valuation of the company observed via the stock market (adjusted for the net interest bearing debt).
- Beta, the beta value measures the actual systematic (market) risk attributed to the company.

Concerning our dependent equity price volatility variables, we rely on the output from the ORBIS database. According to the ORBIS database, the equity price volatility is calculated for 10, 30, 50, and 100, and also 360 days. It should be noted that these days are working days. The equity price volatility level is calculated as the standard deviation of the logarithm of each individual trading day's equity price movement for last 10, 30, and 50, 100 or 360 trading days.

Before we focus on our main and second hypothesis we will

challenge our presumption that equity method using companies have smaller volatility levels than non-equity method using companies. This is the same as referring to the individual volatility for the companies in the two groups and then test whether the average volatility is smaller for the equity method using companies. We challenge the hypothesis by testing the relation for all our different volatility measures.

According to the situation in classic studies, see for example Ding et al. [29], the appropriate way to further analyse the relationship and hereby our second hypothesis is to test by more concrete contribution from financial data and using OLS-regression a number of different combinations of the central key variables and control variables can be modeled and likewise several of the different volatility measures could be chosen. We use the following as our overall

“Complete” model as background.

$$Vol_i = \beta_0 + \beta_1 EqGroup_i + \beta_2 EqParent_i + \beta_3 EqResv_i + \beta_4 SizeGroup_i + \beta_5 FinLevGroup_i + \beta_6 Controls_i + \zeta_i$$

The controls include robustness check, and transparency and ownership structure variables. But since our focus is the marginal contribution which could be related to the use of the equity method we use as stepwise testing procedure.

In the first step, we model the classic basic non-nested variables as independent, i.e. size and financial leverage. In the second step we introduce our derived and calculated equity method oriented variables, and focus on the extra contribution that these variables introduce.

In the third step we establish some of our suggested robustness check by use of several control variables. The control variables are seen as robustness check since these could be seen as omitted variables – we compare with other studies in this topic.

Based on classic literature on econometrics and multiple regression analyses we evaluate different models in accordance with Wooldridge [30], using especially the adjusted R² as means to evaluate and compare the different models.

Descriptive statistics

We provide descriptive statistics for the dataset in Table 3. In the Table the total means, medians, and standard errors are presented for all the companies as well as for the two relevant groups separately, i.e. the equity method using companies and the non-equity using companies. It is worth noticing that even though only a smaller part of the companies use the equity method, the mean is larger for all the group financials except for the net interest bearing debt. This support the study's relative strength, since the equity using group companies seem to be larger and presumably relatively more influent compared to the non-equity using group companies, as larger companies are often likely to have importance simply by their size. It is also interesting to note the differences in the net interest bearing debt when looking at means, medians and standard errors. It seems fair to conclude that some or a few equity method using companies in practice do not have debts, while some companies in the non-equity method using group companies seem to have relatively much debt. Indeed, this could maybe reflect a conservatism bias.

Apart from that is noticeable that no further systematic pattern is observed for the measures.

Analyses and Results

In this section we present the results of analyses conforming to our stated hypothesis dealing with the relation between volatility level and financial statement information.

Sector	Business	All companies	Equity Method using companies	Non-Equity Method using companies
		Number	Number	Number
A	Agriculture, forestry and fishing	1	0	1
B	Manufacturing	47	6	41
C	Electricity, gas, steam and air supply	3	1	2
D	Construction	6	1	5
E	Transportation and storage	4	2	2
F	Information and Communication	13	1	12
G	Real estate activities	10	0	10
H	Professional, scientific and technical activities	5	0	5
I	Human, social, arts, recreation and entertainment	8	1	7
Total	All Companies	97	12	85

Assuming same probability distribution and determining the expected frequency in each category by multiplying the category probability by the sample size we test whether $\chi^2 > \chi_p^2$. For chi Square = 9.0702 and 8 degrees of freedom we see no difference for any relevant significance level, i.e. any p below 34 per cent)

Table 2: Business (industry) differences between Equity Method using and Non-Equity Method using companies.

	Variables	All companies			Equity Method using companies			Non-Equity Method using companies		
		Mean	Standard	Median	Mean	Standard	Median	Mean	Standard	Median
	Volatility measures									
Vol360	Volatility - 360 days	0.4325	0.0278	0.3258	0.3182	0.0382	0.3083	0.4487	0.0309	0.3381
Vol100	Volatility - 100 days	0.4303	0.0269	0.3298	0.3077	0.0456	0.2817	0.4476	0.0297	0.3351
Vol50	Volatility - 50 days	0.4529	0.0286	0.3581	0.3466	0.0646	0.2541	0.4679	0.0311	0.3635
Vol30	Volatility - 30 days	0.4210	0.0338	0.3331	0.3673	0.0515	0.3036	0.4286	0.0379	0.3341
Vol10	Volatility - 10 days	0.3594	0.0306	0.2775	0.2846	0.0302	0.2710	0.3700	0.0346	0.2817
	Group Financial Statements									
TUG	Turnover	8,436	3,476	834	12,796	5,978	4,746	7,821	3,881	550
NIG	Net Result	575	267	9	1,661	1,422	200	422	231	4
TAG	Total Assets	13,086	5,010	1,253	14,402	6,454	6,007	12,900	5,653	1,108
NIBD	Net Interest Bearing Debt	2,346	1,209	169	23	1,355	110	2,673	1,365	176
EQG	Equity	5,202	2,291	450	7,150	3,241	2,194	4,927	2,578	429
	Parent Financial Statements									
EQP	Equity	3,795	1,338	441	7,065	3,214	2,188	3,334	1,457	406
NIP	Net Result	457	220	6	1,637	1,420	193	291	152	3
	Reserve for Net Revaluations									
RevEQ	under the Equity Method	172	108	0	1,388	818	23	n.a.	n.a.	n.a.
	Financial Ratios									
FLEV	Financial Leverage	1.2314	0.4878	0.3867	0.2192	0.1834	0.2499	1.3742	0.5547	0.4255
SIZE	Size	0.0032	0.0007	0.0008	0.0021	0.0015	0.0002	0.0034	0.0007	0.0009
EQP	Equity Part of Total Assets	0.4636	0.0200	0.4594	0.5028	0.0553	0.4236	0.4581	0.0215	0.4645
UDEQR	Undistributable Equity Reserve	0.0159	0.0077	0.0000	0.1284	0.0537	0.0151	0.0000	0.0000	0.0000
ParEQPG	Parent Equity Part of Group Equity	1.3360	0.4062	0.9708	0.9559	0.0201	0.9671	1.3896	0.4636	0.9708

Table 3: Descriptive statistics.

First we want to challenge our first hypothesis that the volatility for equity method using comparison on average is smaller than non-equity using companies. Below in Table 4 we present statistics for our five different volatility measures in three steps:

1. t-test two samples assuming equal variances.
2. F-test two sample for variances.
3. t-test: two samples assuming unequal variance.

In the first step we assume equal variances for the two groups and we perform t-test where the variances are pooled and the P (T < = t) one-tail statistics show no difference, but since the variances in the two groups seem quite different we are not sure the variance are of equal size. In the second step an F-test reveals, P (F < = f) one-tail that the variances are different. Consequently we go back to the t-test now in accordance with step two assuming unequal variances and we are not able to present statistical evidence for the difference in volatility

levels: The volatility for equity method users is statistically significantly smaller for all reasonable significance levels. As example, P (T < = t) = 0.00638 for vol360 is clearly smaller than one per cent (Table 4).

No matter which volatility measure we use, we get the same result (pattern). Concerning our first hypothesis it is quite clear that “equity” companies do have lower volatility than “cost” companies. The difference is statistical significant and completely as expected. Concerning the second hypothesis, the most relevant must intuitively be the 360 days volatility measure in each company since this annual measure presumably is directly comparable with the annual financial reports. The use of some of the other volatility measures lead to same conclusions as here. Our above identified relevant variables for explaining the link between volatility and accounting measures could be introduced in numerous ways. In the following Table 5 only a part of these are introduced, but the pattern shown reflects the overall results.

Testvariables and text	Volatility measures				
	Vol 360	Vol 100	Vol 50	Vol 30	Vol 10
Equity Method using companies					
Mean - Variable 1	0.3182	0.3077	0.3466	0.3673	0.2846
Variance - Variable 1	0.0175	0.0250	0.0500	0.0319	0.0109
Observations - Variable 1	12	12	12	12	12
Non-Equity Method using companies					
Mean - Variable 2	0.4487	0.4476	0.4679	0.4286	0.3700
Variance - Variable 2	0.0813	0.0748	0.0821	0.1221	0.1017
Observations - Variable 2	85	85	85	85	85
t-Test: Two-Sample Assuming Equal Variances					
Pooled Variance	0.0739	0.0690	0.0784	0.1117	0.0912
Hypthesized Mean	0	0	0	0	0
t Stat	-1.5556	-1.7269	-1.4053	-0.5946	-0.9175
P(T<=t) one-tail	0.0616	0.0437	0.0816	0.2767	0.1806
F-Test: Two-Sample for Variances					
Hypthesized Mean	0	0	0	0	0
F Stat	0.2151	0.3339	0.6095	0.2610	0.1075
P(F<=f) one-tail	0.0039	0.0242	0.1841	0.0089	0.0001
t-Test: Two-Sample Assuming Unequal Variances					
Hypthesized Mean	0	0	0	0	0
t Stat	-2.6545	-2.5711	-1.6931	-0.9578	-1.8613
P(T<=t) one-tail	0.0064	0.0087	0.0543	0.1737	0.0344

Table 4: Volatility in Equity Method vs. Non-Equity Method companies.

	Variable names	Models								
		A	B	C	D	E	F	G	H	I
FLEV	Financial Leverage	0.244	0.147			0.111			0.121	
	(significance)	(0.006)	(0.118)			(0.194)			(0.159)	
SIZE	Size	0.480	0.502	0.504	0.865	0.870	0.880	0.879	0.868	0.877
	(significance)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EQP	Equity Part of Total Assets		-0.237	-0.298	-0.403	-0.367	-0.414	-0.416	-0.360	-0.412
	(significance)		(0.013)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
UDEQR	Undistributable Equity Reserve					0.088	0.010	0.096		
	(significance)					(0.367)	(0.897)	(0.329)		
ParEQPG	Parent Equity Part of Group Equity						-0.524		-0.511	-0.522
	(significance)						(0.000)		(0.000)	(0.000)
ParEQPGeq	Parent Equity Part of Group Equity and Zero if Non-Equity				0.068	-0.176		-0.186		
	(significance)				(0.099)	(0.073)		(0.058)		
ParEQPGneq	Parent Equity Part of Group Equity and Zero if Equity				0.008	-0.520		-0.531		
	(significance)				(0.000)	(0.000)		(0.000)		
	F-value	18.356	15.068	21.021	18.577	12.924	18.002	15.049	18.895	24.254
	(significance F-stat)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	Adjusted R-squared	0.266	0.305	0.294	0.423	0.427	0.415	0.423	0.427	0.421
	VIF< (highest number stated)	1.001	1.217	1.013	2.131	2.166	2.140	2.155	2.111	2.101
Notes:										
P-values (reported in parentheses) are two-tailed.										
Multicollinearity is for all models at a relatively low level since Variance Inflation Factor in all cases are smaller than 2.166										

Table 5: Results from multiple regression analyses.

We followed the three step procedure scheduled earlier. In the first step three traditional control variables for risk and size as these are usually defined in similar empirical studies are introduced. See also Table 5. In the table we document how the risk and size proxies interact and relate to the volatility measure in column A in Table 5. It seems that the basic model, size and financial leverage is disqualified when the equity ratio is introduced in column B and C in Table 5, since the financial leverage component becomes non-significant but the model seems better measured by the adjusted R² size. The financial leverage contributes, but the coefficient is insignificant (despite sign is as predicted). For this reason, and because financial risk as such to a large extent seems proxied by the equity ratio, we leave out the financial leverage in the next columns. So in our non-nested model, volatility is a function of size and risk, which in the following will form our basis. It should be noted that the model explains almost thirty per cent of the variability in the data set.

Now adding columns D through I, we deal with our second hypothesis, where we are challenging the link between volatility and key relevant accounting figures like the relevancy of the “equity reserves”, i.e. the yet accounting wise not realized income in parent but disclosed in the subsidiaries becomes clear.

Exactly which variables should be used as explanatory variables is not perfectly clear. When relevant variables are added to the basic setting, describing the equity model using situation, we observe an increase in adjusted R² from 29 per cent to 42 per cent. More combinations of the here shown variables could be justified and provide us with additional models. Consequently, it seems clear that we have an effect, but which model should we choose? The use of the Akaike Information Criterion for ranking and selecting second order recommendations leads to the statistics shown in Table 6 below. Among the presented models, model I ends up being the preferred.

From the numbers in the Table 6, there are several points to be taken. The difference between w_1 and w_H is 1.85, which is smaller than 2.00, meaning that w_1 is not convincingly better than w_H . But since the FLEV-coefficient is insignificant at levels below 15.9 per cent in the H-model, the model I must be preferable according to the AIC_c-calculations. The difference between w_1 and w_D is 2.69, which is slightly larger than 2.00, meaning that w_1 is slightly convincingly better than w_D . The difference between the two is that in model D, the Parent Equity Part of Group Equity is divided into the two groups, and apparently the market does not appreciate this very much. And the difference between w_1 and w_F is 5.25, which is quite larger than 2.00, meaning that w_1 is convincingly better than w_F . The difference between the two is that in model F, the “Un-distributable Equity Reserves” is part of the model. Further, the regression coefficient to this variable is insignificant, which supports the conclusion, so no empirical support for including the equity reserve variable could be found.

From an outsiders perspective this should to a large extent also be the same as looking at the difference between equity for the group compared to the equity for the parent, but apparently this is not as clear as the complete recognition and booking in the equity account for “equity reserves” not allowed to be paid out to the shareholders. In this last perspective the shareholders are provided some very relevant additional information: this is the yet not realized income, in subsidiaries, but we have recognized it, and as soon as cash dividends are paid from the subsidiaries, the parents’ shareholders can also benefit from it.

What really triggers here is that the restricted reserves are un influential in the different models. It seems that it is more important that the size of the parent equity and the group equity are at about the same level. And the fact that some of the parent equity is restricted when using the equity method in Denmark does not seem to influence the setting.

No matter how we combine the details, the results of testing the hypothesis lead to the same conclusion: Volatility level is smaller for companies using equity than for non-equity using companies on average, and any revaluation reserve coefficient is insignificant.

Possibly the market does not distinguish as a clear cut between the companies where the subsidiaries’ income is realized or unrealized at the parent. Apparently it is enough that they are realized in the subsidiary, and it seems more important that the difference between the two equity sizes is small, i.e. that the companies do not have a lot of income in the subsidiaries not yet recognized in the parent company. The volatility seems to grasp the relations between group equity and parent equity since the adjusted R² rises from 29 per cent to about 42 per cent.

One of the consequences of this partly mismatch in relation to the hypothesis could be to question whether it is really the equity method that causes the smaller volatility level? Or just the effect, i.e. a smaller difference between the two equity sizes. Whether the equity method is the direct cause to this relatively higher price stability or not, the relationship is striking.

Ending this section, let us just mention that a pooled dataset covering the last few years gave the same results. And that similarly to the industry distribution, the transparency level measure variable, CIFAR, and the ownership structure variables showed no particular different pattern between the two group, for which reason they have been left out here in this description of the analyses.

Conclusion

This paper contributes to the recent literature on the information transparency and its impact on stock price volatility, since it in accordance with some authors claim and show that more disclosure

Model	K	AIC	c	AIC _c	i	$\frac{-1}{2\Delta i}$	w_1	w_i / w_1
A	4	-708.3213	0.4396	-707.8817	20.5766	0.0000	0.0000	---
B	5	-711.6657	0.6667	-710.9990	17.4593	0.0002	0.0001	---
C	4	-712.1546	0.4396	-711.7150	17.0433	0.0002	0.0001	---
D	6	-727.4252	0.9438	-726.4814	1.9769	0.3722	0.1640	2.69
E	8	-724.1475	1.6552	-722.4923	5.9660	0.0506	0.0223	19.76
F	6	-726.0872	0.9438	-725.1434	3.3149	0.1906	0.0840	5.25
G	7	-725.3919	1.2727	-724.1192	4.3391	0.1142	0.0503	8.76
H	6	-728.1739	0.9438	-727.2301	1.2273	0.5414	0.2386	1.85
I	5	-729.1250	0.6667	-728.4583	0.0000	1.0000	0.4406	---
Following the notation in K.P.Burnham and D.R.Anderson [31]: Model selection and multimodel inference. A practical information-theoretic approach, springer					Total:	2.2694	1.0000	

Table 6: Results from Akaike model selection procedure [31].

might reduce volatility of the stock price. As such the paper presents the realities for one smaller capital market, Denmark, where the equity method has been an allowed option since way back, i.e. also long before the present considerations in the IASB and EU as to re-allowing the equity method in parent companies' separate financial statements.

The findings presented in the paper are based on a Danish dataset which includes all non-insurance and non-financial companies listed on the Copenhagen Stock exchange presenting consolidated financial statements, being a group and disclosing detailed accounting treatment of subsidiaries. Our tests showed lower volatility levels for the equity method using group of companies compared to the non-equity method using group of companies, also after controlling for differences in industries and transparency levels in the two groups' companies.

Regression analyses confirmed the tendency that equity method and lower volatility levels follow each other. However, we did not find evidence that the specific account "Reserve for net revaluations under the equity method" should be a significant part of the relation.

It seems that most important for the size of the volatility is the difference between consolidated group equity and parent equity. However, whether a smaller difference stems from a relatively high part of group income being realised in parent's financial statements, or whether it stems from relatively high part of group income being recognised in subsidiaries by use of the equity method seems not to be important.

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