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**Working Paper**

## The quality of Neuer Markt quarterly reports: An empirical investigation

Working Paper Series: Finance & Accounting, No. 88

**Provided in Cooperation with:**

Faculty of Economics and Business Administration, Goethe University Frankfurt

*Suggested Citation:* D'Arcy, Anne; Grabensberger, Sonja (2002) : The quality of Neuer Markt quarterly reports: An empirical investigation, Working Paper Series: Finance & Accounting, No. 88, Johann Wolfgang Goethe-Universität Frankfurt am Main, Fachbereich Wirtschaftswissenschaften, Frankfurt a. M.,  
<https://nbn-resolving.de/urn:nbn:de:hebis:30-18071>

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- an Empirical Investigation –**

**No.88  
January 2002**



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**No.88  
January 2002**

**ISSN 1434-3401**

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## **Abstract**

For the Neuer Markt year 2001 is not considered as one of its best, compared to its prior performance. Investors who once piled into the Neuer Markt have now become wary of the exchange, which was launched in 1997 as Europe's leading growth market and answer to the U.S.'s Nasdaq Stock Market. The Neuer Markt's reputation has been marred by the misleading information policy from several Neuer Markt companies, publishing false annual and quarterly data. Some of these companies are responsible for having misinformed investors of their pending bankruptcies.

Under these circumstances, it is time to find an explanation for the dramatic loss of credibility in Neuer Markt enterprises. Finding an answer, two aspects come under consideration:

- What type of information (annual versus quarterly reports) was available for investors and
- of what quality were these provided data.

Interim reports can be seen as important instrument in the reporting system to inform all kinds of investors.

For this reason we examine the quality of Neuer Markt quarterly reports by concentrating on the disclosure level of 52 Neuer Markt companies' reports for the third quarter 1999 and 2000. To enable comparison we establish four disclosure indexes that measure the report's compliance with the Neuer Markt Rules and Regulations as well as with IAS and US GAAP interim reporting standards. The results demonstrate that the level of disclosure has increased over time.

Then we aim to find typical attributes of Neuer Markt enterprises that provide high or low level of accounting information in their quarterly reports.

Nevertheless the study also shows that there is not any correlation between market capitalization and the quality of interim reports. However, it can be suggested that an additional enforcement mechanism could improve quality and lure investors back. A step towards this aim is the standardization project of quarterly reports of Deutsche Boerse AG.

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# 1 Introduction<sup>1</sup>

Despite the recent market turndown, Germany's Neuer Markt, launched in March 1997, is considered to be the most successful stock market for growth companies in Europe, both in terms of market capitalization and the number of listings.<sup>2</sup> This success can primarily be accounted for by the disclosure and listing requirements being substantially stricter than in other German market segments.<sup>3</sup> However, even if the Neuer Markt already boasts some of the tightest regulations in Europe, the general sell-off in technology and internet stocks, a string of profit warnings, insider dealing investigations and insolvencies have badly shaken the market, which has fallen by more than 85 per cent from its peak reached in March 2000.<sup>4</sup> This sharp setback in stock prices is not only a shock for many inexperienced retail investors who have for the first time realized a massive loss exposure.<sup>5</sup> Furthermore institutional investors seem to be surprised by the free fall of prices.

This is a typical time for blaming a scapegoat or at least finding a plausible explanation. One starting point may be to question what type of information was available for investors, and if a better quantity or quality could have enhanced judgement. Quarterly reports are important sources of information. Companies on Neuer Markt are required to publish quarterly reports and to prepare their accounts following International Accounting Standards (IAS) or US Generally Accepted Accounting Principles (US GAAP).<sup>6</sup> But several Neuer Markt companies' quarterly reports were criticized as failing the investors' information needs.<sup>7</sup> Important information was missing or of poor quality. One major criticism is that even if the rules are heavily influenced by NASDAQ and SEC regulation they lack a comparable enforcement mechanism. In fact, the listing requirements are set down in a rulebook which can be interpreted as private contract

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1 The authors gratefully acknowledge helpful comments by Christof Brass, Martin Friedhoff, Christine Roßbach, and Richard Willis.

2 See *The Economist*, January 9, 1999, pp. 69-71.

3 See *Financial Times*, October 13, 1999, p. 27. The Neuer Markt Rules and Regulations can be downloaded: <http://www.deutsche-boerse.com/nm>.

4 See Wassener 2000.

5 See Benoit 2000.

6 See Article 7.1 of the Neuer Markt Rules and Regulations.

7 See Maier/Herr 2001.

between the Deutsche Boerse AG and the issuer.<sup>8</sup> Deutsche Boerse AG acts as standard setter and enforcement institution at the same time, without a governmental based supervisor responsible for assuring the quality of quarterly reports.

On the other hand there may be other reasons than governmental enforcement to follow the required rules. The Neuer Markt is an international stock market, with 16 per cent non-German issuers and has an international investor base. Some pressure from investors could induce high quality even without governmental force. Moreover it seems plausible that on a relatively young market disclosure quality increases over time as investors and companies might in the beginning have focussed on growth potential rather than disclosure quality.

In this study we investigate the quality of Neuer Markt quarterly reports by concentrating on the disclosure level of the reports of 52 Neuer Markt companies for the third quarter of 1999 and 2000. First we briefly describe the Neuer Markt, IAS and US GAAP interim reporting standards. Then we discuss certain approaches to measure the quality of interim reports by disclosure levels. To enable comparison we establish certain disclosure indexes that measure the report's compliance with the Neuer Markt Rules and Regulations as well as with IAS and US GAAP interim reporting standards. Then we aim to find typical attributes of Neuer Markt companies that provide high or low level accounting information in their quarterly reports. For that we investigate correlations between the disclosure level and certain criteria like market capitalization and the time of existence in the Neuer Markt.

The results demonstrate that the level of disclosure has increased over time. However, it can be argued that an additional enforcement mechanism could improve quality. As far of this, the quarterly reports standardization project of Deutsche Boerse AG<sup>9</sup> may form an important landmark in satisfying investors' information needs.

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8 The shares are admitted under public law to the Second Segment (Geregelter Markt) with relatively low publication requirements like half year summaries. Additionally for the admission under private law to the trading segment "Neuer Markt" the rules and regulations must be accepted by the issuer. The Executive Board of the Deutsche Boerse AG can reject the application, if the admission criteria of registration conditions are not fulfilled. Moreover it can terminate the admissions to the Neuer Markt if the issuer does not adhere to the requirements connected with the admission. See Deutsche Boerse AG Information Folder, Section 2.1, version 01/01/01.

9 See the Deutsche Boerse AG Market Circular "Structured Quarterly Reports", August 2001.

## 2 Interim Reporting Standards

### 2.1 Rules and Regulations Neuer Markt

The Neuer Markt was founded on 10<sup>th</sup> March 1997 as an equivalent to NASDAQ. At that time it started with two companies and has now reached 342 listings<sup>10</sup>. With the foundation of Neuer Markt, ruled by private law, Deutsche Boerse AG had the intention to bring innovative high growth companies together with risk seeking investors. In order to fulfill information requirements of these investors Deutsche Boerse AG created the Neuer Markt Rules and Regulations. These Neuer Markt Rules and Regulations require the publication of quarterly reports, which follow either IAS or US GAAP. In both cases Neuer Markt listed companies have to publish quarterly reports in German as well as in English, that must contain financial statements and a notes section. The most important components of the financial statements and explanatory are as follows:

- income statement,
- cash flow statement,
- net income or loss per share
- number of employees.

For each figure, the comparative figure for the corresponding period of the previous year shall be given.<sup>11</sup> Moreover in the explanatory section the following notes are to be made, each with previous year comparable figures<sup>12</sup>:

1. breakdown of revenues,
2. remarks to the order situation (order backlog),
3. presentation of the development of costs and prices
4. R&D activities,
5. specification for the investment activities,
6. presentation of personnel changes in the company's Board of Management or supervisory bodies,
7. explanations of shares held by the company, subscription rights of officers and employees,
8. explanation regarding distribution of interim dividends.<sup>13</sup>

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10 August 2001. See for a brief description of the Neuer Markt *Leuz* 2001, pp. 8-10.

11 See Article 7.1.2. of the Neuer Markt Rules and Regulations.

12 See Article 7.1.3. of the Neuer Markt Rules and Regulations.

13 In some countries it is allowed to distribute interim dividends whereas this is forbidden to German public companies. See § 59 AktG. For this reason only non-German companies were analyzed whether this specification was given or not.



For the presentation of the financial statements as well as for the explanatory notes is determined as follows: If the Neuer Markt listed company published its preceding annual report on a consolidated basis, then the quarterly report consisting of the financial statements and the explanatory notes are to be prepared on a consolidated basis too.<sup>14</sup>

In article 7.1.7 of the Neuer Markt Rules and Regulations it is stated that the quarterly report has to be transmitted immediately following its completion, and within at least two month of the end of the relevant reporting period. For the 1999/2000 third-quarter reports under study that means that the companies had to publish the nine-month report until the end of November. In this case we analyze Neuer Markt listed companies if they have electronically submitted the quarterly report within the prescribed period.<sup>15</sup>

Furthermore, at the request of the company, Deutsche Boerse AG may permit a reconciliation of national accounting principles to IAS or US GAAP.<sup>16</sup> Deutsche Boerse AG comments that this reconciliation statement must in its material aspects have the format of the US GAAP reconciliation statement. From the viewpoint of Deutsche Boerse AG this reconciliation statement can be regarded as minimum to be presented.

The special rules of IAS and US GAAP go partly beyond those set forth in the Neuer Markt Rules and Regulations and are described in chapter 2.2. and 2.3.

## **2.2 Interim Financial Reporting according to IAS 34**

One of the most important principles of IAS 34 is that quarterly reports should preferably focus on new activities, events and circumstances that have occurred since the publication of the latest annual financial statements. IAS 34 has recognized the need to keep investors abreast with the latest financial news of a company and has thus softened the presentation of quarterly reports.<sup>17</sup> The standard allows a company, at its option, to provide quarterly information either in a “condensed format” or as a “complete set of financial statements”. In both cases, a quarterly report in accordance to IAS 34 must contain financial statements and explanatory notes.

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14 See Article 7.1.4. of the Neuer Markt Rules and Regulations.

15 The publication period postulated in the Neuer Markt Rules and Regulations does neither over-rule the IAS recommended 60-days period (IAS 34 par. 1 (b)) nor the US GAAP required 45-days period (Form 10-Q, General Instructions A.1.), since it is to be regarded as special rule of Neuer Markt listed companies.

16 See 7.2.2. of the Neuer Markt Rules and Regulations.

The standard mandates that the following financial statements components be presented either full<sup>18</sup> or in a condensed format<sup>19</sup> each with comparable previous year figures<sup>20</sup>:

- (condensed) balance sheet,
- (condensed) income statement,
- (condensed) statement showing either all changes in equity (statement of changes in stockholders' equity) or changes in equity other than those arising from capital transactions with owners and distributions to owners (statement of comprehensive income),<sup>21</sup>
- (condensed) cash flow statement,

Furthermore IAS 34 requires the disclosure of earnings per share, both “Basic EPS” and “Diluted EPS”, on the face of the quarterly income statement.<sup>22</sup> In the explanatory notes, that accompany the financial statements, a minimum of disclosures are to be made, which are outlined below:<sup>23</sup>

1. A statement that the same accounting policies and methods are applied in the quarterly report compared to the most recent annual report. If those policies or methods have changed, a description of the nature and effect of the change shall be given.
2. comments about seasonality or cyclicity of interim operations,
3. nature and magnitude of significant items affecting interim results that are unusual because of nature, size, or incidence,
4. dividends paid,
5. revenue and operating result for business segments or geographical segments, which represent the company's primary mode of segment reporting: If a company is obliged to prepare a “complete set of financial statements”, then it shall follow IAS 14.<sup>24</sup>
6. significant events occurring subsequent to the end of the reporting period,
7. issuance, repurchases and repayments of debt and equity securities,
8. nature and quantum of changes in income taxes estimates,
9. changes in the composition of companies to be consolidated,
10. changes in contingent liabilities or assets.

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17 See *Epstein/Mirza* 1999, p. 651.

18 See IAS 34, par. 5 and IAS 1.

19 If a company presents its quarterly report in a “condensed format”, then IAS 34, paragraph 10, requires that, at a minimum, those “condensed financial statements” should include each of the headings, and the subtotals, that were included in the company's most recent annual financial statement.

20 See IAS 34, par. 20.

21 None of the Neuer Markt listed companies chose the possibility of showing a comprehensive income statement. Thus we only examine these companies whether they present the statement of changes in stockholders' equity or not.

22 See IAS 34, par. 11.

23 See IAS 34, par. 16.

24 See *PWC* 1999, p. 5.

IAS 34 states that quarterly reports should be prepared in conformity with accounting policies used in the preceding annual financial statements.<sup>25</sup> Thus the standard requires that, if the company's most recent annual financial statements were presented on a consolidated basis, then the quarterly reports in the immediate succeeding year should also be presented similarly.<sup>26</sup> This is in accordance with the principle stipulated in Article 7.1.2. (2) of the Neuer Markt Rules and Regulations.

### 2.3 Interim Financial Reporting according to US GAAP

The basic objective of US GAAP interim reporting is to provide investors and others with timely information as to the progress of the enterprise. The timeliness of presentation may be partially offset by a modification in detail in the information provided.<sup>27</sup> As a result, APB 28 as guideline allows a company to present quarterly reports either in a "summarized form" or as a "complete set of financial statements". APB 28 represents the general guideline among other SFAS, FASB Interpretations and for certain practical aspects the regulations S-X.<sup>28</sup>

If a Neuer Markt listed company has decided to prepare its quarterly report according to US GAAP, then it has to show the following financial statements components, each with comparable figures:<sup>29</sup>

- (condensed) balance sheet,
- (condensed) income statement,
- (condensed) cash flow statement,
- segment report (for condensed form overview only)<sup>30</sup>
- statement of changes in stockholders' equity or statement of comprehensive income<sup>31</sup> (for complete set only)

Type and scope of the complete set is determined by the most recent annual report.<sup>32</sup> For both formats, the following disclosure should be reported, as a minimum:<sup>33</sup>

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25 See *Epstein/Mirza* 1999, p. 657, also *PWC* 1999, p. 3.

26 See IAS 34, par. 14.

27 See APB.28, par. 9 and 30, also *Epstein/Mirza* 1999, p. 757.

28 See *Delaney/Epstein/Adler/Foran* (2000), p. 757.

29 See APB. 28, par.2 and 33.

30 See *Fey/Mujkanovic* 1999, p. 270.

31 See footnote 21.

32 This is the interpretation of KPMG regarding Neuer Markt listed companies preparing the quarterly reports under US GAAP. See also *KPMG* 1999, p. 181.

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|--|
| <ol style="list-style-type: none"><li>1. sales or gross revenues, provisions for income taxes, extraordinary items, cumulative effect of an change in accounting principles or practices, and net income,</li><li>2. primary and fully diluted earnings per share,</li><li>3. seasonal revenue, costs or expenses,</li><li>4. significant changes in estimates or provisions for income taxes,</li><li>5. disposal of a segment of a business and extraordinary, unusual or infrequently occurring items,</li><li>6. contingent items,</li><li>7. changes in accounting principles or estimates and</li><li>8. significant changes in financial positions.</li></ol> |
|--|

As already mentioned under IAS 34, quarterly reports according to US GAAP shall be based on the same accounting policies and practices used by the company in the preparation of its most recent annual report.

For those Neuer Markt listed companies that are dual-listed on the Neuer Markt as well as on NASDAQ, form 10-Q together with the specific explanatory notes required by the Neuer Markt Rules and Regulations are accepted. Thus we analyzed all parts of the form 10-Q, namely Part I comprising the financial statements and the MD&A and Part II Other Information, together with explanatory notes, are presented by these companies.

### **3 Methodology and Research Data**

#### **3.1 Methodology: Developing Disclosure Indexes**

Corporate finance theory predicts that companies endogenously optimize disclosure policy in order to maximize firm value. This choice involves trading off the reduction in the information asymmetry component of the cost of capital that results from increased disclosure quality.<sup>34</sup> For a firm without growth opportunities, a minimum disclosure may be of sufficiently high quality because this firm has no need for external finance and therefore is not influenced by the cost of new equity capital. For firms with high growth opportunities - like Neuer Markt companies - information asymmetry is high and some reduction through voluntary disclosure seems optimal.<sup>35</sup>

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33 See APB. 28, par. 30. See also *Kieso/Weygandt* 2001, p. 1397.

34 See e.g. *Verrecchia* 1983 and *Leuz/Verrecchia* 2001, for an empirical literature overview *Healy/Palepu* 2001; *Core* 2001

35 See *Core* 2001, pp. 2-3.

Accordingly, a number of empirical studies suggest a link between cost of equity capital and disclosure.<sup>36</sup>

Accepting this connection we have first to define the disclosure level as an indicator for reporting quality. Recent empirical disclosure literature suggests that mandatory disclosure is enforced and therefore has not to be included in a quality index. This assumption does not hold for the Neuer Markt because one major criticism concentrates on the non-compliance of some issuers with existing rules. Furthermore, the companies have to report following the Rules and Regulations of the Neuer Markt as well as IAS or US GAAP. Accordingly, we have to consider different systems. We find a related research question in the comparison of national accounting systems by disclosure levels.

In the 1970's *Barrett* developed an "index of disclosure", which measured the complexity and adequacy of accounting information for certain national accounting systems by investigating the disclosure of several annual reports. The presence of 17 "items of information" in each reviewed report determines the value of the index.<sup>37</sup> As result, Anglo-American companies, especially American and British ones, show high values, whereas the continental European firms, with France at the bottom, indicate relatively low degrees.<sup>38</sup> Also in the 1970's, *Choi* has published three studies about the relation of external environmental factors related to the capital market influence on accounting and the quality of financial reporting practices.<sup>39</sup> Likewise to *Barrett's* method, he measures the degree by a "level of disclosure", that is based on 36 "items of information". *Belkaoui* uses a partly related concept, that evaluates national accounting systems by a "reporting and disclosure adequacy index"<sup>40</sup> based on the *Price Waterhouse* database on accounting practices.<sup>41</sup> The index is calculated by summing the ordinal categories of all items for each country, which includes disclosure as well as measurement practices.<sup>42</sup> An enclosed test of

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36 See *Botosan/Plumlee* 2000, p. 3.

37 See *Barrett* 1975, 1976, 1977.

38 In his analysis from 1975, *Barrett* makes use of the reports of the 15 biggest enterprises for each country only. In the later studies from 1976 and 1977 the data base considers 103 reports from the financial years 1963 to 1972.

39 *Choi* 1973a, 1973b, 1974.

40 See *Belkaoui* 1983.

41 See *Price Waterhouse* 1979.

42 The categories are:

1 = required

2 = used by a majority of the firms

significance does not prove a strong relation between this index and several environmental factors. Furthermore, *Belkaoui/ Maksy* test the relation between the "reporting and disclosure adequacy index" and the concept of the "welfare of the common man". As in the earlier study, they can not prove a significant dependence.<sup>43</sup> Nowadays, several annual report databases provide information on the fact if several disclosure items are present or not.

All these studies define the disclosure level by the sum of present disclosure items. Hence we establish disclosure levels by defining items of information which should be included in the interim report following the related standards as described in section 2. For each level we compute 1999 and 2000 numbers to investigate developments.

- The first index FINANCIALS measures if all parts of an interim report are present, namely the income statement, the balance sheet, the cash flow statement, and the earnings per share figure, each with comparable preceding year figures. This measure is independent from the used accounting standards.<sup>44</sup>
- The second index NM indicates the compliance with the explicit disclosure regulations of the Neuer Markt as described in section 2.1.
- The third index IAS scales the compliance with IAS 34 disclosure rules for those companies which follow IAS.
- The fourth index US shows the conformity with US GAAP interim reporting standards as described in section 2.3.
- Finally we establish the index ALL that describes the overall disclosure level for all companies under review. The indexes FINANCIALS, NM and either IAS or US are accumulated while eliminating duplicate information, e.g. the requirement of providing earnings per share figures that is part of FINANCIALS and IAS.

We are aware of limitations of this research approach. The indexes are defined as simple sums. Hence every item of information is weighted by one so that important parts may be swamped by

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3 = used by about half of the firms

4 = used by a minority of the firms

5 = prohibited

6 = not applicable, not found

43 See *Belkaoui/ Maksy* 1985.

44 We do not include the statement of changes in stockholders' equity in this figure because it is not required in all cases. However, FINANCIALS do not provide us the full information on the compliance regarding the components of an interim report for companies which tend to follow IAS.

trivial ones. As well, we measure the conformity of the reports in accordance with the related standards. This may not be a strong indicator of the quality of the accounting numbers presented. However, the results provide the possibility to gain new insights into the level of information companies publish on a quarterly basis. Additionally, we define timeliness as important factor for the quality of reports. Finally, the results can not even be interpreted as measure for the completeness of the reports. Some items of information are only requested under certain conditions. Hence we do not know the theoretical maximal sum for each company. Nevertheless, we believe that there is a strong correlation between the observed disclosure levels and the quality of the reports. Even if the results should be interpreted with caution, some trends may be identified.

### **3.2 Research Data**

This study is based on research of all 174 companies listed on the Neuer Markt at the end of October 1999 obliged to submit quarterly reports.<sup>45</sup> The subject of this research is the third-quarter report for 1999. Companies who have published the six-monthly and third-quarter report were selected from this initial sample. This allows companies listed less than 3 months previously to be ignored, along with others that have only published one quarterly report at this time.

Following this preselection 58 Neuer Markt companies remain from the initial sample. The selection is further reduced to 54 companies, as the accounting regime used in the quarterly reports of 4 firms can not be identified. A second criteria justifying their removal, based on internal DBAG advice, is that their market capitalization was in 1999 either less than 80 million or greater than 3 billion Euro.<sup>46</sup>

We use the sample of 54 Neuer Markt companies to compare quarterly reports from the third-quarter 1999 with those from the third-quarter 2000. We further reduce this sample by two companies, as one was de-listed due to insolvency and the other was subject to a merger.

The 1999 third-quarter reports under examination were published between 11/11/1999 and 12/3/1999, as a result of the Neuer Markt Rules and Regulations allowing two months for the

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<sup>45</sup> All Neuer Markt listed companies, who receive listing authorization during the accounting period are obliged to provide a quarterly report. This is implicitly stated in Article 7 of the Neuer Markt Rules and Regulations.

<sup>46</sup> See DBAG Secondary Markets statistics, November, 1999.

report to be submitted after the end of the reporting period. For the third-quarter 2000, we examine reports only after subsequent modifications have possibly been made. Where changes occurred an element of confusion might potentially distort the results of this study. In this case the time period was from March to June 2001, the compliance with accounting standards also being verified. Consequently, we analyze only the most up-to-date version of third quarter 2000 reports, and not, as in the case of third quarter 1999 reports, the original version.<sup>47</sup>

The sample of the 52 companies according to the accounting standards used and the usage of reconciliation instead of full set of financial statements can be described as follows:

Table 1: Accounting standards used and usage of reconciliation

1999	Full	Reconciliation	Total
US GAAP	24	6	30
IAS	16	6	22
Total	40	12	52
2000			
US GAAP	28	1	29
IAS	22	1	23
Total	50	2	52

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<sup>47</sup> Neuer Markt listed companies have the possibility, upon significant errors or omissions being recognized in their quarterly reports by DBAG, to re-submit a modified version.



## 4 Results

### 4.1 Disclosure levels

Figure 1 shows the frequencies for the index FINANCIALS for 1999 and 2000. Table 2 summarizes some related statistical data.

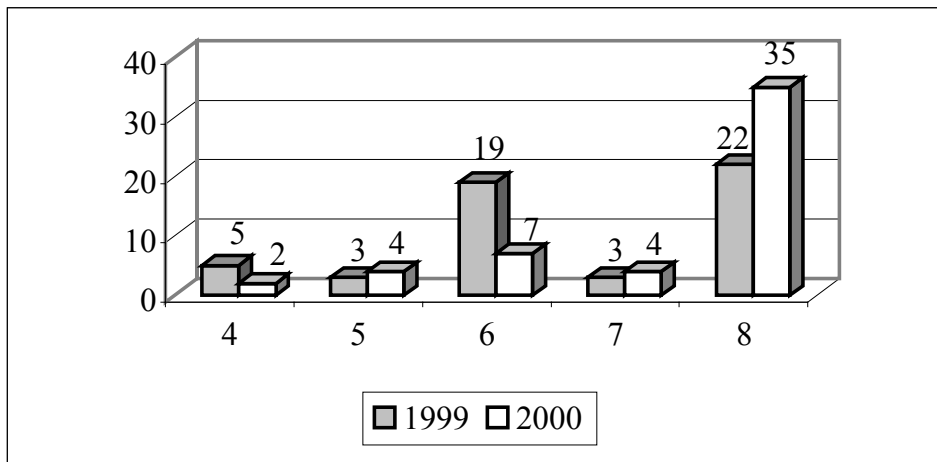


Figure 1: Frequencies of FINANCIALS

Table 2: Statistics of FINANCIALS

Year	N	Mean	Median	Std. Deviation	Variance	Minimum	Maximum	Sum
1999	52	6,65	6	1,34	1,80	4	8	346
2000	52	7,27	8	1,19	1,42	4	8	378

In 1999 only 22 companies or 42% show all elements of an interim report, in 2000 more than three quarters of the firms fulfill this requirement. Generally, the comparable preceding year figures are missing. However, 1 Company does not provide a cash flow statement in 2000 (3 in 1999). Moreover, in 7 cases the EPS figure is missing in 2000 compared to 11 in 1999. 8 companies do not present a balance sheet in 2000 (12 in 1999). This fact can mainly be explained by the 1999 version of the Neuer Markt Rules and Regulations that did not explicitly require a balance sheet. Beyond this, a balance sheet is required by IAS or US GAAP anyway.

Figure 2 shows the frequencies which indicate the compliance with the Rules and Regulations of the Neuer Markt. Some rules are only applicable under certain conditions like disclosure about changes in the boards or about own shares. So it is not surprising that no company reaches the maximum sum of 11. However, some information is often missing like the actual order situation or figures on the development of costs and prices. Even 8 companies do not show a breakdown of

their revenues in 1999 (one in 2000). However, the index has increased from 1999 to 2000 about 25%. On average, in 2000 the companies show one more item of information than in 1999. But still important information is not given like on major investments or on R&D activities by more than 20 companies.

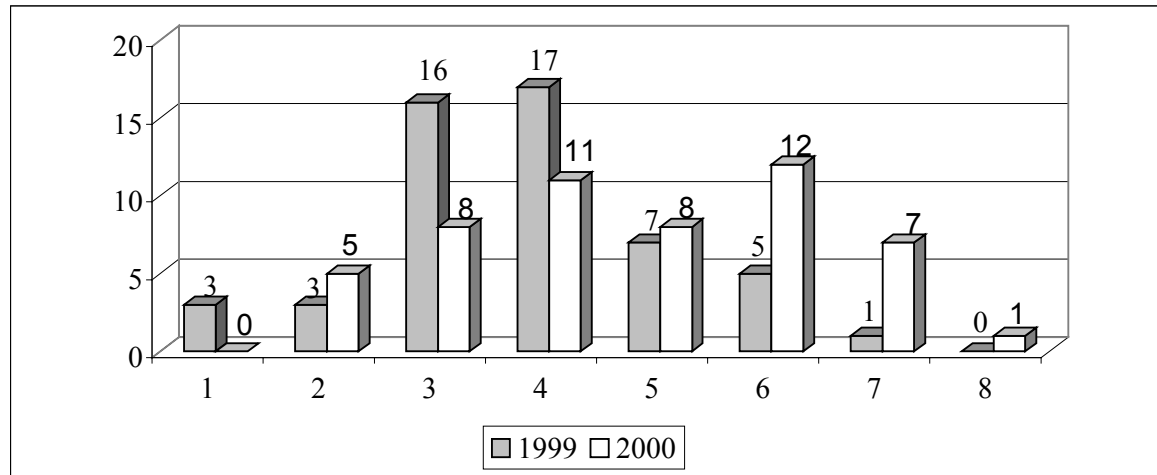


Figure 2: Frequencies of NM

Table 3: Statistics of NM

Year	N	Mean	Median	Std. Deviation	Variance	Minimum	Maximum	Sum
1999	52	3,79	4	1,32	1,74	1	7	197
2000	52	4,75	5	1,62	2,62	2	8	247

The same is with the index IAS that stands for the compliance with IAS disclosure requirements following IAS 34. Two companies in 1999 and 1 in 2000 do not even provide one item of information following IAS 34 requirements. Also remarkable is the absence of segment information for more than the half of the companies under review. This may be traced back to IAS 14 which does not require segment information in all cases. The mean increases with 41% with an increasing variance from 1999 to 2000. Major reasons for the expansion are information according to the accounting methods used and changes in the composition of companies to be consolidated.

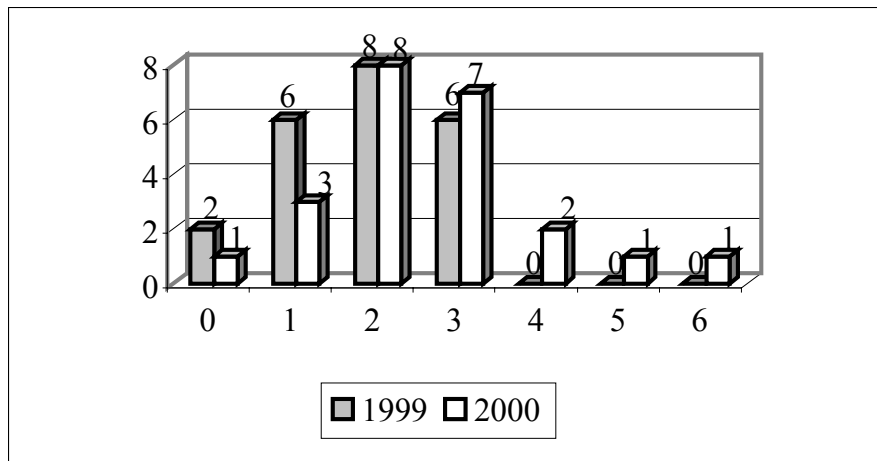


Figure 3: Frequencies of IAS

Table 4: Statistics of IAS

Year	N	Mean	Median	Std. Deviation	Variance	Minimum	Maximum	Sum
1999	22	1,82	2	0,96	0,92	0	3	40
2000	23	2,57	2	1,34	1,80	0	6	59

The index US shows that not all items of information are given by all companies even if they report according to SEC regulations on form 10-Q. The variance with over 4 for 2000 is remarkable. However, essential information like basic earnings per share figures are given by 20 firms for 2000 (24 for 1999) only. Dilutive numbers are presented by 8 for 2000 and 9 for 1999 despite the fact that almost all companies may have a dilutive effect on the earnings per share figure from their contribution plans.

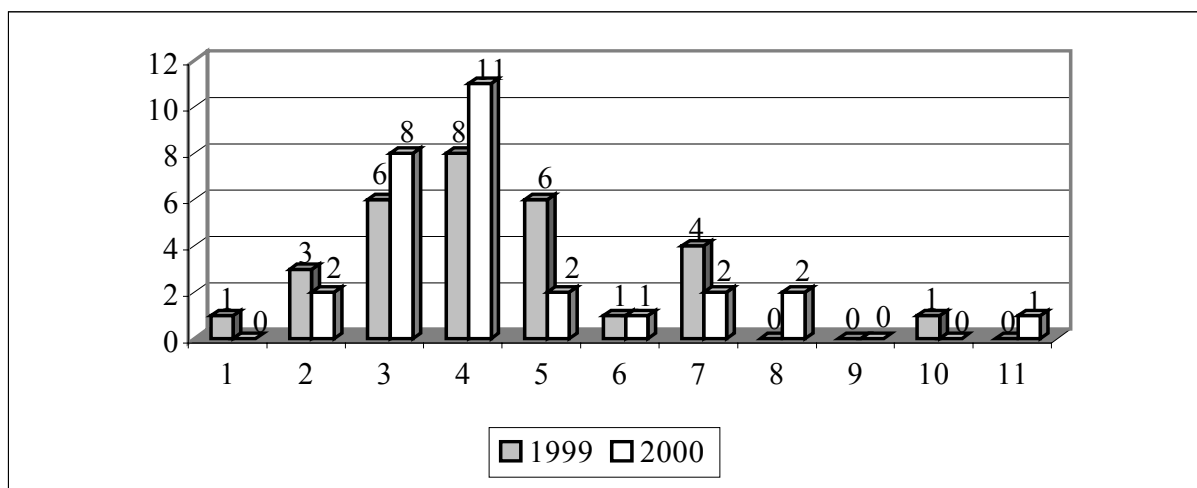


Figure 4: Frequencies of US

Table 5: Statistics of US

Year	N	Mean	Median	Std. Deviation	Variance	Minimum	Maximum	Sum
1999	30	4,37	4,00	1,90	3,62	1	10	131
2000	29	4,45	4,00	2,03	4,11	2	11	129

Summarizing the findings it becomes obvious that the disclosure quality according to the basic parts of an interim report, the Neuer Markt rules and regulation as well as for the specific accounting rules used are not as high. However, analyzing the means according to the maximum sum reached in 2000 the relative disclosure levels are increasing (see figure 5). Also the IAS and US disclosure levels seem to come closer.

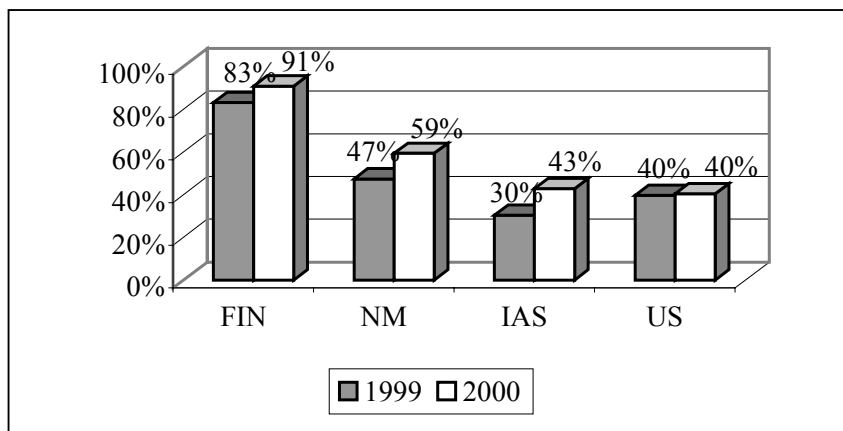


Figure 5: Mean development

These results can also be confirmed by analyzing the index ALL for 1999 as well as for 2000 (see figure 6 and table 6). The overall disclosure levels for all companies have increased up from 49,03% to 56,70. This is an 16 % increase in one year while the variance remained almost constant.

Table 6: Statistics of ALL

	ALL 99	ALL 00
N	52	52
Mean	49,03%	56,70%
Median	50,56%	55,56%
Std. Deviation	,1000	,1063
Minimum	24%	32%
Maximum	71%	86%

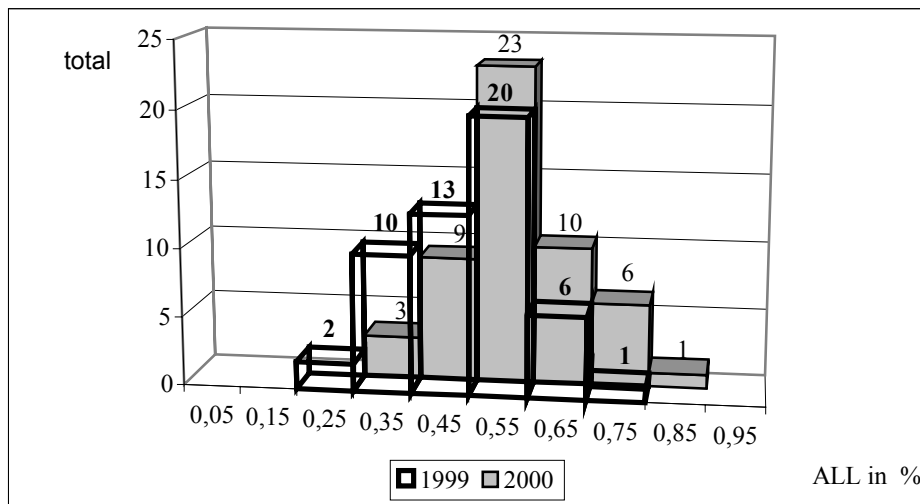


Figure 6: Index ALL: Histogram of Frequencies

Additionally, besides the required disclosure, additional information is provided by some companies. 7 companies publish a statement of changes in stockholders' equity or statement of comprehensive income in 2000 (8 in 1999). This item is not included in the FINANCIALS index because it is not required in all cases. Also segment reports are presented by 27 companies in 1999 and 17 in 2000. This outcome is surprising because it does not correspond with the general tendency of an increased disclosure level.

## 4.2 Correlations

The question arises how a company with a high or low disclosure level can be characterized. Hence we look for highly correlated criteria. The first important attribute may be the accounting principles used. As US GAAP is enforced by 3 companies in this study because they are listed at a US exchange one may suppose that the US GAAP disclosure level may be higher. In fact, in differentiating ALL in the disclosure level for companies that follow IAS and those that follow US GAAP it becomes obvious that the disclosure level of US GAAP companies is higher. However, the levels for 2000 come closer. Also the minimum levels shown under US GAAP are also at a low level of 32% for 1999 and 36% for 2000 only.

Table 7: ALL IAS and ALL US

	ALL IAS 99	ALL IAS 00	ALL US 99	ALL US 00
N	22	23	30	29
Mean	46,82%	55,33%	50,65%	57,78%
Median	49,07%	55,56%	50,83%	56,85%
Std. Deviation	9,500E-02	,1099	,1021	,1040
Variance	9,025E-03	1,208E-02	1,043E-02	1,081E-02
Minimum	24%	32%	32%	36%
Maximum	63%	74%	71%	86%

As second attribute a full set of financial statements versus a reconciliation may play a role in characterizing companies. It seems plausible that companies presenting a full set of financial statements following IAS or US GAAP comply more with the related disclosure standards than companies that only present a reconciliation of net income and equity from national GAAP to IAS or US GAAP. The latter may not see the requirement to follow the international disclosure rules but only measurement rules. Table 8 shows that for 1999 and 2000 the disclosure level of companies with full set of financial statements are higher than companies that provide a reconciliation statement only. The differences between the means and medians are more than 10%. However, in 2000 only 2 companies are left that show a reconciliation. Since 2001 reconciliations are no longer allowed. This may have an impact on the increasing disclosure levels.

Table 8: Influence of full format versus reconciliation

	N	Mean	Median	Minimum	Maximum	Std. Deviation	Variance
1999 Full Accounts	40	50,00%	51,20%	24%	71%	,1018	1,036E-02
1999 Reconciliation	12	45,80%	45,00%	29%	59%	9,060E-02	8,209E-03
2000 Full Accounts	50	57,07%	55,56%	32%	86%	,1064	1,133E-02
2000 Reconciliation	2	47,31%	47,31%	44%	51%	5,369E-02	2,882E-03

Moreover, the use of condensed formats versus the full version of the balance sheet, the income statement and the cash flow statement may be interpreted as an indicator for a lower disclosure level. It seems plausible that a company that presents a full format even if this is not required presents a higher quantity of disclosure. The condensed format is not as popular as it may be expected. In 1999 21 companies opted for a condensed format whereas in 2000 14 enterprises presented condensed formats. The differences in the means and medians are not as high. But the gap in 2000 is more notable than in 1999. Hence, the tendency to present full formats stay in line with the increasing disclosure standards but is not significant.

Table 9: Influence of full or condensed formats

	N	Mean	Median	Minimum	Maximum	Std. Deviation	Variance
1999 condensed format	21	48,29%	50,19%	24%	71%	9,946E-02	9,892E-03
1999 full format	31	49,53%	50,93%	29%	69%	,1018	1,036E-02
2000 condensed format	14	55,28%	52,64%	36%	76%	,1166	1,359E-02
2000 full format	38	57,22%	55,56%	32%	86%	,1034	1,069E-02

Likewise, there may be a connection between the timeliness of reports and the disclosure level. Besides the disclosure quality of interim reports the timeliness of reports stands for adequate information of the capital market. Hence, companies that provide their reports on time may report on a higher disclosure level in order to minimize equity costs. According to the Neuer Markt Rules and Regulation the issuers shall electronically transfer the quarterly report to DBAG without delay after preparation, but not more than two months after the end of the reporting period. The following figure 7 illustrates that most of the companies fulfill this requirement. Beyond most companies provide quarterly financial data on average 12 days earlier than required

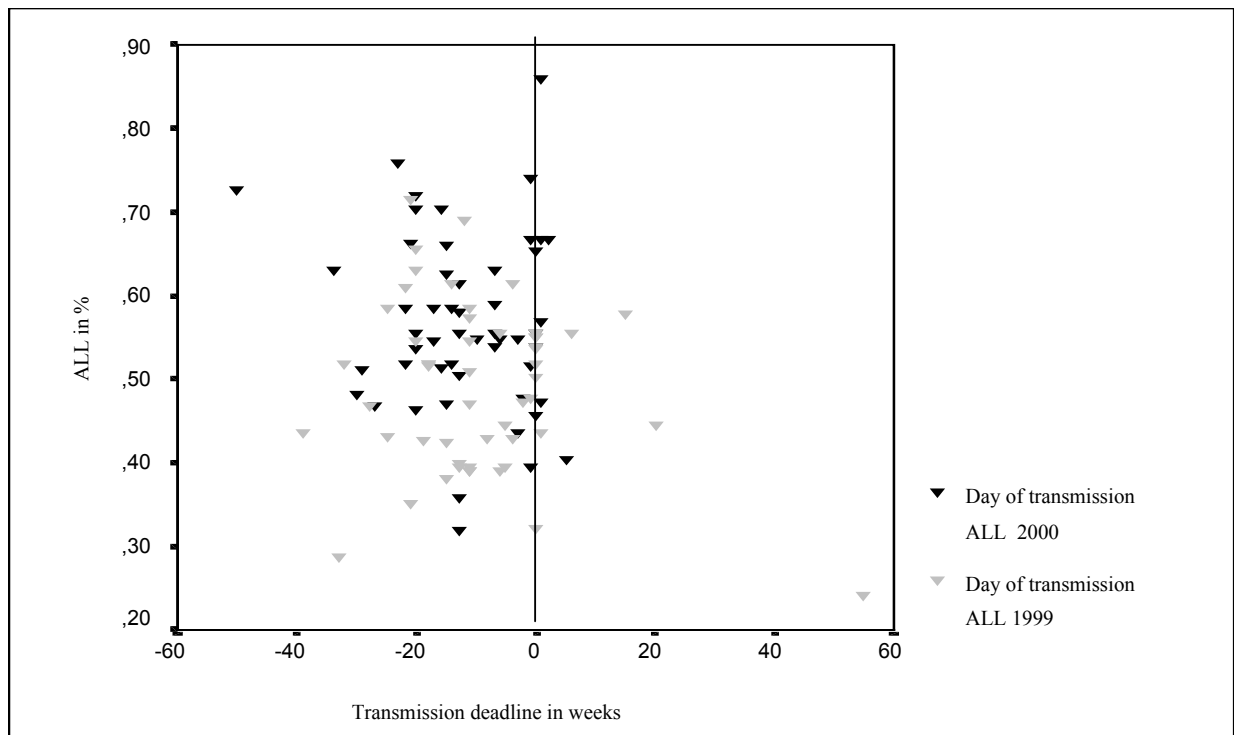


Figure 7: Influence of days delay for 1999 and 2000

with a median of 13 days in 2000 (11 in 1999, see table 10). In 2000 6 firms are delayed (5 in 1999) with an absolute outsider delay in 1999 of 55 days (in 2000 maximum delay 5 days).

However, analyzing the third quarter 1999 and 2000 reports as shown in figure 7, it becomes obvious that no influence between the timeliness and the disclosure level can be observed.

Table 10: Timeliness of reports

	1999	2000
Mean	-9,48	-11,92
Median	-11,00	-13,00
Std. Deviation	14,62	11,06
Variance	213,71	122,23
Minimum	-39	-50
Maximum	55	5

Another aspect, which is interesting to focus on, is the correlation between disclosure level and market capitalization. Therefore we set up the hypothesis, that the larger a company is, reflected in its market capitalization, the greater its potential to acquire professional accounting staff. This will in turn enhance the quality of quarterly reports. We assume that a high disclosure level is directly related to a high market capitalization and vice versa. The following diagram (figure 8) shows the correlation between the disclosure level ALLUS for the year 1999 (2000) as well as the market capitalization for 1999 (2000).<sup>48</sup>

Interesting appears that a large number of Neuer Markt companies neither have a particularly high market capitalization nor reach a high disclosure level. This is true for the year 1999 as well as for 2000. Only in 1999 a minority of 4 companies shows a high market capitalization and has improved in the disclosure level.

But overall, the assumption that a high disclosure level is positively related to a large market capitalization is not given. A negative correlation is also not significantly recognizable, because of the fact that the Pearson's correlation coefficient is of -,139 for 1999 (2000: -,032). Since the coefficient is in both cases close to zero, neither a positive nor negative correlation can be identified.

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<sup>48</sup> The market capitalization was fixed by the end of September 1999/2000 (beginning of October 99/00), because the identification of the research date started with the beginning of October 1999.



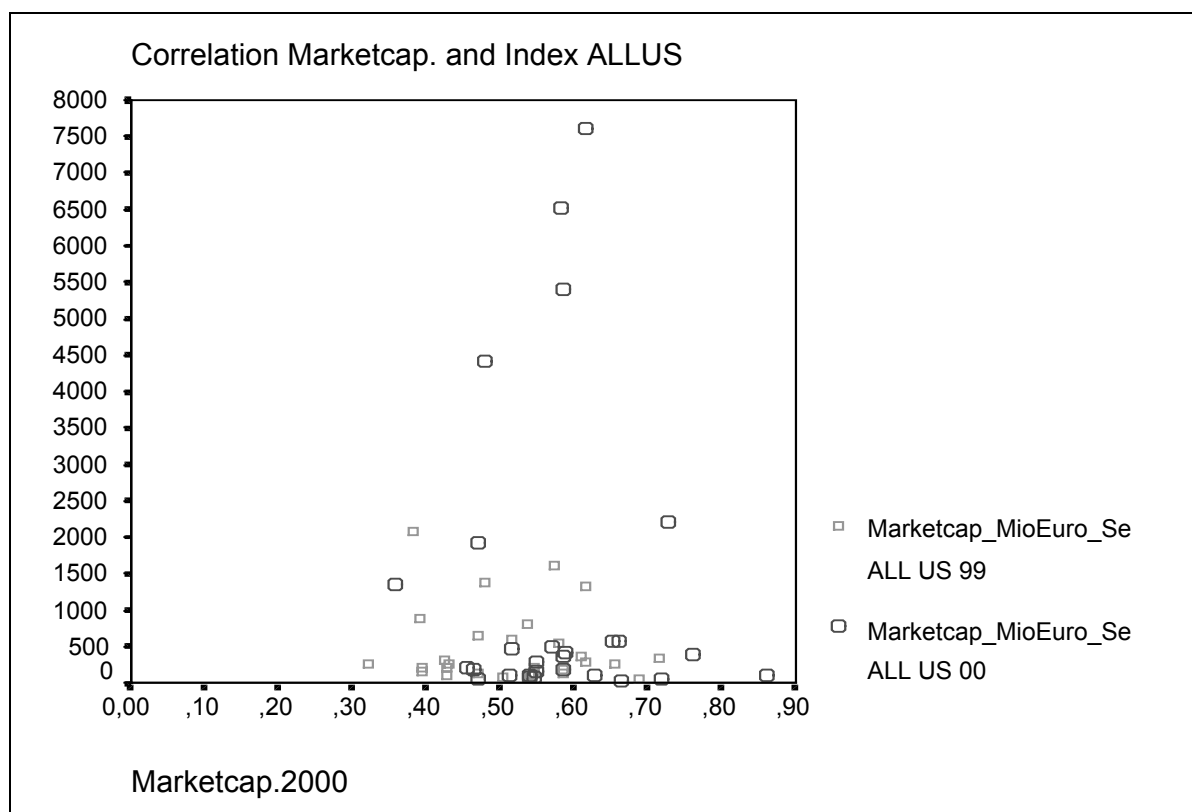


Figure 8: Correlation between disclosure levels ALLUS 99/00 and market capitalization 99/00

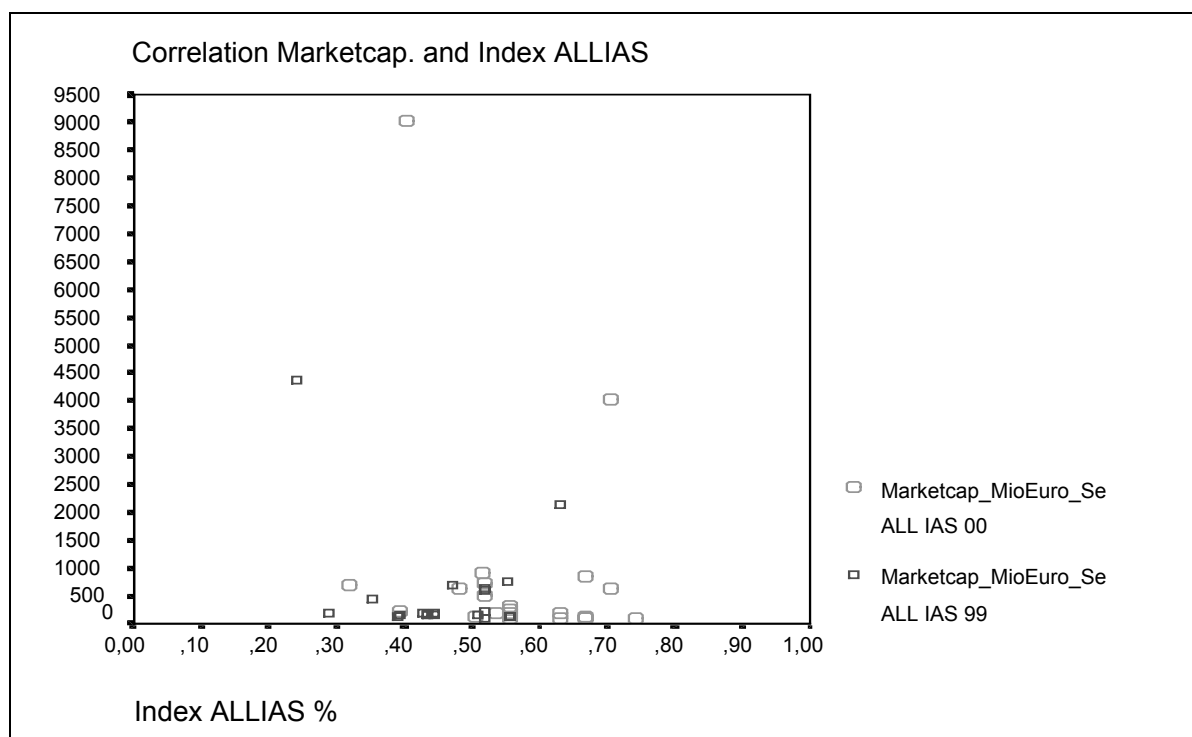


Figure 9: Correlation between disclosure levels ALLIAS 99/00 and market capitalization 99/00

Focusing the above-mentioned correlation between the disclosure levels ALLIAS 99/00 and the market capitalization for the years 99/00 the situation has not remarkable changed. Likewise the majority of the companies present an acceptable disclosure level, which varies from 40 percent to 75 percent whereas a maximum of 100 percent can be reached. For the year 2000 some of them have improved their level. It remains remarkable that in 2000 only one company has a high market capitalization and reaches a higher disclosure level.

Also in the IAS situation neither a strong positive nor negative correlation exists. The Pearson's correlation coefficient is  $-,311$  for 1999 (2000:  $-,202$ ) which indicates a weak negative correlation between the disclosure level ALLIAS and the market capitalization.

A further aspect for our analysis is the possible correlation between disclosure indexes ALL 99/00, which measures the quality of the quarterly reports, and the research period.<sup>49</sup> We assume that the longer the companies are listed on the Neuer Markt, the more experience they have with the preparation of the quarterly reports and so they show a higher degree of quality in their quarterly reports, reflected in the indexes ALL99/00, and vice versa.

The following diagram (figure 10) shows a slight increase of the correlation line, which can be interpreted as a weak positive correlation between the index All99 and the research period. This indicates also the correlation coefficient of  $,067$ . That may mean that longer-listed companies tend to have a higher publicity quality in their quarterly reports as those, which recently achieved their listing admission. While for the year 1999 a positive correlation was recognized, this changes now for year 2000.

In figure 11 it is noticeable that the correlation line falls slightly. However, the case of a negative correlation is not significantly recognizable, since a lower degree of quality in the quarterly reports – shown by the Index ALL00 - is not related to the period of existence on the Neuer Markt and vice versa.

Also the fact that the Pearson's correlation coefficient is  $-,060$ , which is very close to zero, does not show an unambiguous negative correlation.

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49 The study period can be defined as the time between the company receives its listing admission and the study was made.

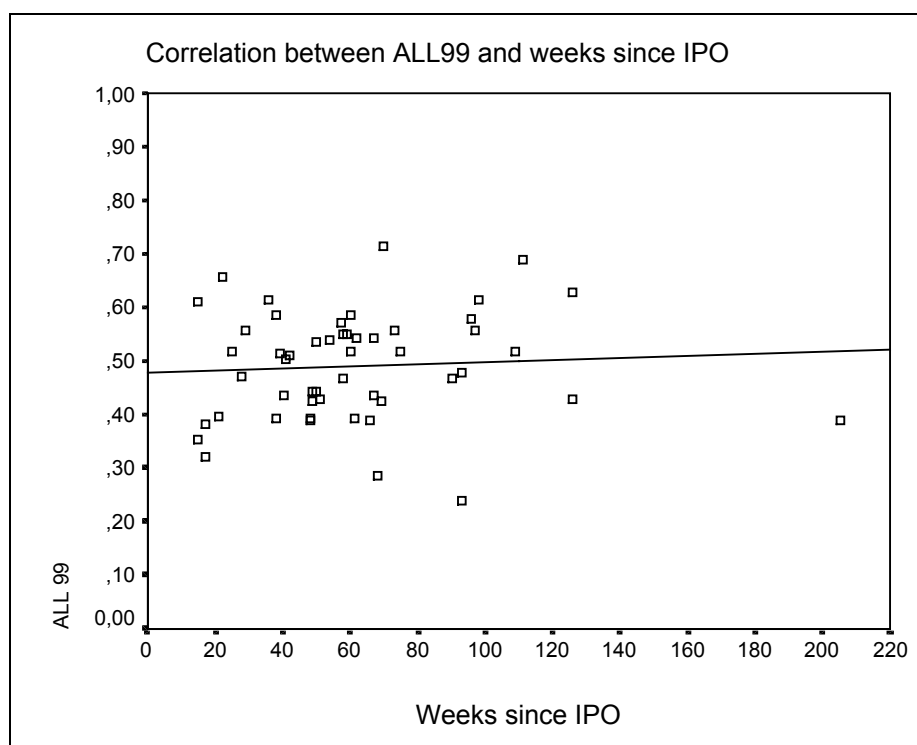


Figure 10: Correlation between Index ALL 99 and the research period 1999:

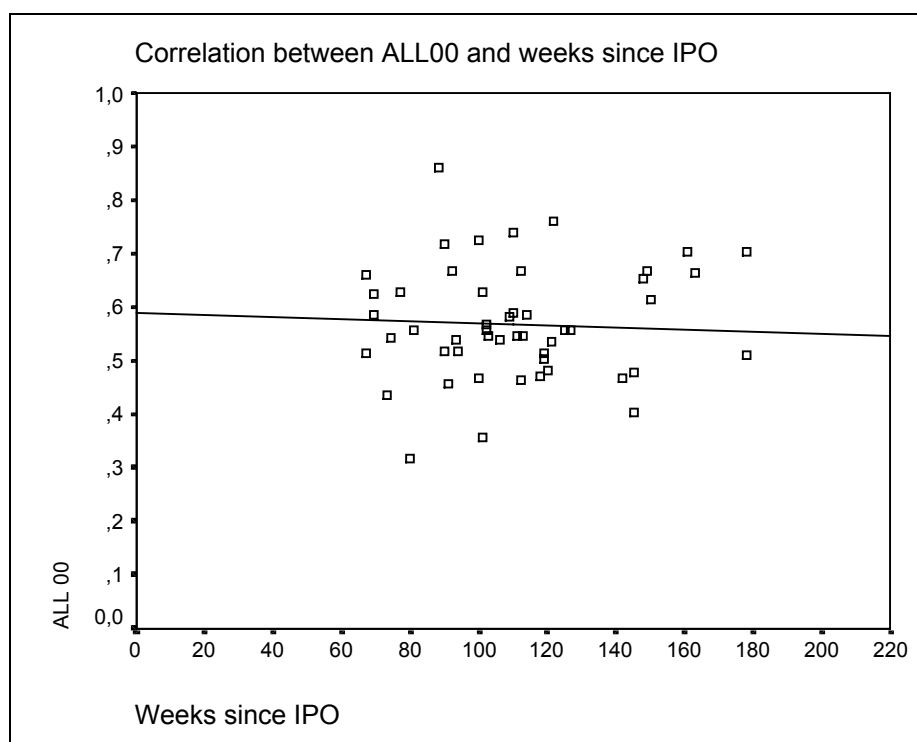


Figure 11: Correlation between Index ALL 00 and the research period 2000.

## 5 Conclusion

Altogether the quality of Neuer Markt quarterly reports is not so high considering the Neuer Markt Rules and Regulations, IAS and US GAAP. The analysis of the disclosure level of 52 companies shows that sometimes important information is missing. For example 75 per cent of the companies present in their nine-month report for year 2000 all required financial statements, whereas for 1999 42 per cent of the enterprises publish all financial statements. However basic information, especially the income statement, was provided in all cases. Moreover, the information was on time except in one case. Hence, the companies have provided profit information on a regular basis. Thus it is hard to conclude whether a higher disclosure level would have influenced judgement.

Analyzing the results we should be aware that in Germany, according to the stock exchange admission regulation, companies have to provide half-year summaries only.<sup>50</sup> Of course, most DAX companies, the German blue chip index, inform their shareholders with quarterly reports but still many listed companies do not. Hence, the Neuer Markt disclosure requirements form an important landmark in the information behavior of companies as well as information requested from most shareholders and some standard setters in Germany and Europe.<sup>51</sup> Therefore, these rules have forced an information revolution in the German and European capital markets.

The Neuer Markt Rules and Regulations show certain differences compared to the interim reporting standards of IAS or US GAAP. While Neuer Markt Rules and Regulations determine only a minimum standard, the requirements of a complete report are substantially higher following IAS or US GAAP. Our analysis shows that creating financial statements according to IAS or US GAAP accompanied by accounting-regime specific disclosures are more exact in their scope, compared to the Neuer Markt Rules and Regulations. Although these regulations are far beyond the US-American benchmark, Form 10-Q, they are setting a standard in the formal structure of a quarterly report as well as in material aspects.

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<sup>50</sup> See §§ 53-62 Stock Exchange Admission Regulation.

<sup>51</sup> E.g. the German index family (DAX, MDAX, SMAX) requests quarterly reports inspired from the Neuer Markt Rules and Regulations.

It is difficult to find typical attributes of Neuer Markt companies that provide high or low level accounting information in their quarterly reports. The study shows that neither the market capitalization nor the time of existence in the Neuer Markt correlate with the disclosure level. Moreover, the use of IAS or US GAAP does not stand for a high or low disclosure level. From 1999 to 2000 there is only a slight improvement in the fulfillment of specific rules of IAS 34. It appears also interesting that no improvement in the quality of the nine-month reports neither for 1999 nor for 2000, which were prepared according to the rules of US GAAP can be recognized. Reasons for this development can be seen in the absence of an explicit reference in Neuer Markt Rules and Regulations to the special rules of IAS and US GAAP. Moreover, in absence of such a reference, the supervision of fulfillment of the relevant interim reporting standards, like IAS 34 and APB 28 was not stringently executed and sanctioned. This outcome corresponds with results of Leuz (2001). His findings do not indicate that US GAAP is of higher quality as frequently claimed. The choice between IAS and US GAAP appears to be of second order importance.

The Neuer Markt as well as its rules and regulations are still young. For the first time the companies were confronted with the request for high level accounting information according to new valuation and disclosure rules, as well as the timeliness and frequency of reports. Not surprisingly, most of them were not able or willing to comply fully with all rules. This may be traced back to the fact that usage of IAS and US GAAP for Neuer Markt listed companies were indeed very new for German as well as for European accountants and auditors. The increasing disclosure level shown in this study can be insofar interpreted as learning success. Also the first time after the IPO may be used to work on the realization of the business plan and not so much to invest in the company information system.

One major outcome of this study is that the quality of quarterly reports is increasing. The enterprises show in their nine-month report 2000 on average 5 of 8 required components as postulated in the Neuer Markt Rules and Regulations, while these are only 4 components in 1999. One reason why more enterprises present in their nine-month reports 2000 either all financial statements as well as the disclosure required by Neuer Markt Rules and Regulations, is continuous supervision of quarterly reports since summer 2000.

But the current market environment does not allow waiting for a moderate development. Since the rules seem to be sufficient, the enforcement of these rules may form an important starting

point for improvement now. In fact, the discussion on corporate governance in Germany and Europe shows that enforcement of rules is a main point in improving shareholder information. For example the German governmental committee on corporate governance<sup>52</sup> and the European Union<sup>53</sup> favor the requirement of a limited review of quarterly reports. But the reaction of the German government or the European Union will take time. The Deutsche Boerse AG has to react now due to the recent dramatic developments. Besides other suitable actions the Neuer Markt companies will have to follow structured quarterly reports<sup>54</sup>:

“The introduction of structured quarterly reports is a major step towards improving the quality of corporate reporting and market transparency. Mandatory minimum requirements, the reporting structure and format will enable market participants to assess relevant company data more quickly, thus facilitating comparison. At the same time, this will help Deutsche Boerse AG to monitor the timely submission of reports more efficiently, and quickly recognize incomplete reports, and penalize the companies involved – further protecting investors’ interest.”

This improvement can be seen as a step towards the internationalization of the Neuer Markt disclosure requirements in order to challenge the international competition on equity capital of innovative companies.

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52 See Commission Corporate Governance 2001.

53 See EU 2001.

54 See Structured Quarterly Reports – Market Circular, p. 2.

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