RELEVANCE OF ACCOUNTING INFORMATION UNDER IFRS AT BORSA ISTANBUL (BIST)

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Abstract

This study aims to measure the relevance of accounting information prepared under IFRS for the manufacturing firms listed at Borsa Istanbul. To achieve the objectives of the study, the data used in the empirical part was divided into two periods. The first period covers the years from 1996 to 2004 (pre adoption IFRS), while the second period covers the years from 2005 to 2013 (post adoption IFRS). A regression model has been applied to measure the explanatory power of book values and earnings to explain stock prices. According to these results, Z value of 36 out of 71 firms (50.70%) has improved after the adoption of IFRS. The result of applying the relevance model on each firm separately has shown that there is no positive significant impacts after the adoption of IFRS on the relevance of the accounting information of the manufacturing firms listed at Borsa Istanbul.

Keywords:

Relevance, IFRS, Borsa Istanbul.

ملاءمة المعلومات المحاسبية بعد تطبيق معايير الإبلاغ المالي في بورصة اسطنبول

تهدف هذه الدراسة لقياس ملاءمة المعلومات المحاسبية في الشركات الصناعية المدرجة في بورصة اسطنبول. ولتحقيق هدف الدراسة تم تقسيم البيانات إلى فترتين، الفترة الأولى من 1996 إلى 2004 (قبل تطبيق معايير الإبلاغ المالي)؛ والفترة الثانية من 2005 إلى 2013 (بعد تطبيق معايير الإبلاغ المالي). تم استخدام نموذج انحدار لقياس معامل تفسير العلاقة بين القيمة الدفترية والأرباح على سعر السهم. بعد تطبيق معايير الإبلاغ المالي يتبين أن قيمة (Z) تحسنت لـ 36 شركة من 71 شركة تم اختبارهم، أي بنسبة 50.70% . هذا التحليل الخاص باختبار ملاءمة المعلومات المحاسبية لكل شركة على حدة يبين أنه ليس هناك تغيير جوهري على ملاءمة المعلومات المحاسبية بعد تطبيق معايير الإبلاغ المالى فى بورصة اسطنبول.

كلمات مفتاحية:

ملاءمة؛ معايير الإبلاغ المالي؛ بورصة اسطنبول.

INTRODUCTION:

In spite of the fact that there are varying goals for the individual firms in the business world, decision makers (internal and external) in the case of each firm need information to make decisions. The main type of needed information is the accounting information. Generally, the accounting information is presented by financial reports. Concisely, accounting information plays a vital role in the decision making process at organizations (Corina & Nicolae, 2012; Gafarov, 2009; Stvilia, Gasser, Twidale, & Smith, 2007). Accounting information is also important to equity investing decisions, as well as to contracting decisions (Barth, Beaver, & Landsman, 2001).

The accounting information should be characterized by relevance and faithfulness. In order for information to be relevant, it should have three sub characteristics; predictive value, confirmatory value, and materiality. While to be faithfully represented, information should be complete, neutral and free from error. (International Accounting Standards Board, 2010; Kieso, Weygandt, & Warfield, 2012).

In the last decade there were a lot of debates between related bodies in the different countries. These debates escalated from debating harmonization levels to debating uniform levels of the accounting standards. In 2005, all European countries started to adopt the IASB's standards (The IFRS Foundation and the IASB, 2013). In addition, the Turkish Capital Markets Board issued a bulletin requiring all listed firms to prepare their financial statements in accordance with IFRS starting from 1 January 2005, even though some of the firms started the adoption of IFRS in 2003 (Bahadir & Tolga, 2013; Pekdemir & Türel, 2014).

The IFRS do not forbid the use of accounting practices that depend on personal judgments in the preparation of the financial statements including the statements of financial position and income respectively. For instance; estimating the collectable amount of accounts receivable, the amount of bad debt, the value of inventory, the useful life of property, plant and equipment and the use of depreciation methods ...etc. This means that preparing financial statements is subject to human judgment. International Accounting Standards Board (IASB) follows the principle-based approach which allows firms to exploit the flexibility to manage earnings (Barth, Landsman, & Lang, 2008). In the same line, there are motives for managers to manipulate some accounting estimates such as; inventory, accounts receivable, and earnings, etc. aiming to impact stock prices of the firm prior to the expiration of stock option (Fields, Lys, & Vincent, 2001).

When the firm adopts International Financial Reporting Standards (IFRS) to prepare financial reports, it aims to issue information with specific characteristics. But until this moment, the scholars are not sure about the quality of information. (Jeanjean & Stolowy, 2008) mention that the standards have limited effect on the information quality and (Anandarajan & Hasan, 2010) show that value relevance is lower in continental countries relative to the USA and Britain. There is a lot of studies that aim to measure accounting information quality. Most of these studies concentrate on comparisons between firms before and after adopting IFRS through comprehensive measurements.

Based on the importance of the quality of the accounting information, this study attempts to measure the information relevance of manufacturing firms listed in Borsa Istanbul. To accomplish this objective, the study measures the relevance using Barth's model for separate firm data.

Accounting information quality
Measuring quality of accounting information

Measuring the quality of accounting information has two attributes (1) accounting-based and (2) market-based. The accounting-based attribute includes features of accounting numbers which are influenced only by the recognition and measurement principles. It includes accruals' quality, persistence of earnings, predictability of earnings, and smoothness of earnings. The accounting-based attribute does not refer to market value. The market-based attribute, on the other hand, reflects the economic income as represented by market returns, and it includes the value relevance of accounting numbers, timeliness, and conservatism.

The following section presents a brief literature about value relevance:

Value relevance

The value relevance of financial information is the ability of the financial data to summarize a firm's value or to reflect information that affects stock market measures, stock returns, and stock turnover (Fiador, 2013), or, in other words, measuring the significance of the relationship between the market value and the accounting numbers of a firm.

(Francis & Schipper, 1999) mention four interpretations for value relevance; "*(1) financial*

statement information leads stock prices by capturing intrinsic share values toward which stock prices drift. (2) financial information is value relevant if it contains the variables used in a valuation model or assists in predicting those variables. (3) the ability of financial statement in-formation to change the total mix of information in the marketplace. (4) the ability of financial statement information to capture or summarize information."

But the achievement of high quality of information is somehow difficult because; (1) of its complexity and multidimensionality; (2) it is affected by the economic environment which is out of the control of standard setters; (3) some tradeoffs might be necessary for the political process (Ely & Waymire, 1999).

Historically, there were many studies during the seventies and the eighties of the last century that considered the relevance of accounting information. As event studies (Ball & Brown, 1968; Beaver, 1968), they depend on measuring the impact of the signaling of financial statements through examining the change in share price. At the beginning of nineties, researchers evaluated relevance through measuring the relationship between market return and accounting earnings (Easton & Harris, 1991; Lev, 1989).

Currently, there are many studies that measure the relevance in different countries. They conclude that significant differences among the countries and accounting rules exist. Value relevance is subject to changes upon to the actions of standard setters and upon the changes in the economic and social environment. There is an important transference in the research topic orientation from evaluating exclusively the existence of information content of accounting numbers towards investigating the interplay of accounting environment and the institutional and economic background of financial reporting. (Alford, Jones, Leftwich, & Zmijewski, 1993; Bao & Chow, 1999; Harris, Lang, & Möller, 1994; Joos & Lang, 1994)

(Holthausen & Watts, 2001) raise the idea of the ability of the external factors to influence the relevance of accounting information. This idea directed researchers to measure the impact of external factors, such as how institutional alterations among different countries influence properties of firms (Ball, Kothari, & Robin, 2000). (Ali & Hwang, 2000) stated that there are many factors which impact the relevance of accounting information; for instance, bank-versus market orientation of financial systems, the involvement of private sector bodies in standard setting, code law

versus common law based accounting regimes, tax influence on financial accounting and, external auditing expenditures. (Ball, Robin, & Wu, 2003) argue that it is better to measure the relevance of accounting information by giving a substantial weight to the institutional influences on actual reporting incentives of the preparers, and not to focus the measurement on classifying countries and evaluating the value relevance of accounting information in terms of formal accounting standards.

The Turkish accounting system

Turkish firms follow a commerce code, a tax procedural law, Ministry of Finance regulations, and Public Supervision Accounting and Audit Standards Institution regulations (Balsari & Varan, 2014; Cengiz, 2014). The Ministry of Finance issues tax procedural law which includes regulations that should be followed by firms to prepare financial statements for tax purposes (Balsari & Varan, 2014; Cengiz, 2014). The Ministry of Finance published a Turkish uniform accounting system in 1992. And in 1994, firms started to prepare financial statements in accordance with generally accepted accounting principles. In addition, firms listed at Istanbul stock exchange (IMKB) had to prepare financial statements in accordance with CMB's communiqué serial: XI, NO:1, which states the principles and rules of financial statements of listed firms. According to this, firms have to prepare two sets of financial statements. One set for tax purposes and another for capital market purposes (Bilgic & Ibis, 2013).

Public Supervision of Accounting and Audit Standards Institution has been established instead of the Turkish Accounting Standards Board. It is responsible to establish and publish Turkish Accounting Standards according to the results of the adoption and implementation of IFRS (Balsari & Varan, 2014; Cengiz, 2014). IFRS has been translated into the Turkish language by Turkish Accounting Standards Board and published them as TAS/TFRS (Turkish Accounting Standards/Turkish Financial Reporting Standards). The Turkish Capital Markets Board has issued a bulletin that requires all listed firms to prepare financial statements in accordance with IFRS from 1 January 2005, although the adoption of IFRS was started in 2003 (Bahadir & Tolga, 2013; Gürarda, 2013; Pekdemir & Türel, 2014)

Literature reviews

There are many studies that discuss the quality of accounting information. A lot of these studies measure

the quality by comparing information quality before and after adopting IFRS, or by comparing listed firms that adopt IFRS and listed firms that adopt US GAAP, or by comparing firms in different countries. (Jeanjean & Stolowy, 2008) measure the quality of earnings post of the adoption of IFRS at different countries (Australia, France, and United Kingdom) through analyzing the discontinuities in the distribution of earnings before and after applying the IFRS. (Barth, Landsman, Lang, & Williams, 2006) measure the accounting quality by making a comparison between firms that apply US GAAP in the USA and firms that apply IAS in France and Germany. (Djatej, Gao, Sarikas, & Senteney, 2011) find the differences between information quality in western European and eastern European firms. (Alali & Foote, 2012) measure the relevance of accounting information for firms listed and traded in Abu Dhabi Securities Exchange. (Haller, Ernstberger, & Froschhammer, 2009) compare between equity and net income at German firms before and after adopting IAS 11, IAS 16, IAS 37, IAS 38 and IFRS 3. (Chen, Tang, Jiang, & Lin, 2010) measure the impact of adopting IFRS at firms located in 15 states of the European Union. (Ashbaugh & Pincus, 2001) measure the impact of adopting IAS in comparison to domestic standards to find the negative affect of inaccurate earnings forecast. (Okafor, Anderson, & Warsame, 2016) measure the impact of adopting IFRS in comparison to Canadian GAAP. (Joshi, Yapa, & Kraal, 2016) measure the perception of professional accountants in Singapore, Malaysia, and Indonesia aiming to evaluate their supposed benefit. (Ebaid, 2016) evaluate the earnings management before and after the adoption of IFRS. (Mostafa, 2016) evaluate the impact of IFRS by measuring the value relevance before and after adopting IFRS for the Egyptian listed companies.

Most of the published studies measure the accounting information quality by similar approaches; through measuring earnings management, income smoothing, and timely loss recognition. (Barth et al., 2006) examine accounting information quality by measuring (1) variability of change in net income, (2) variability of change in net income relatively to change in cash flow. While as (Alali & Foote, 2012) examine the (1) variability of change in net income, (2) variability of change in net income relatively to change in cash flow. (Haller et al., 2009) use the index of comparability to find the differences between equity and net income before and after adopting IFRS. (Chen et al., 2010) measure the impact of IFRS using five factors; earnings

smoothing, managing earnings toward targets, the magnitude of absolute discretionary accruals, accruals quality, and timely loss recognition. (Paananen & Lin, 2007) measure earnings smoothing and timely loss recognition by creating a regression model with multiple factors such as; liabilities to assets, change in sales, …etc. (Karampinis & Hevas, 2011) measure value relevance by finding the relationship between accounting figures, market returns and prices, and asymmetric recognition of economic losses and gains. (Anandarajan & Hasan, 2010) measure the association of earnings and change in earnings with equity values. In addition, (Rahman, Yammeesri, & Perera, 2010) examine information quality by finding the relationship between the abnormal accruals of accounting earnings and independent variables such as; equity, long term debt, short term debt, market return, market value, and growth. (Clarkson, Hanna, Richardson, & Thompson, 2011) measure the relevance of book value and earnings for the level of stock price.

Most studies have different methodologies to measure accounting information quality. (Kohlbeck & Warfield, 2010) follow three different methodologies to find the relationship between standards and information quality; (1) a comparison between unexplained changings in net income before and after implementing the standards, (2) a measurement of the correlation between cash flow and accruals; according to the assumption that firms managing earnings will have a negative relationship between cash flow and accruals. (3) also a measurement of the correlation between cash flow and accruals after controlling for firm size, growth, equity issues, leverage, debt issues, sales turnover, and the presence of a Big N auditor. (Dechow, 1994) measures the relationship between earnings and stock return, and between cash flow and stock return in short intervals through analyzing the regression between earnings and stock return, cash flow and stock return, and cash flow from operating activities and stock return. (Rahman et al., 2010) differentiate between different accounting information qualities according to different influence theories in the country, by observing the agency theory in US firms, high block holder concentration in French firms, and family owned businesses in Thailand. (Okafor et al., 2016) find the adjusted R square of regression model of stock price on book value and earnings. (Joshi et al., 2016) use survey to find professional accountants perceptions in the three countries of the study. (Ebaid, 2016) find the earnings management through measuring the income

smoothing by the variability of the change in net income scaled by total assets. (Mostafa, 2016) examine the association between earnings and book value of equity, and stock price.

On the other hand, studies examine the quality of accounting information using different periods and different number of observations. (Kohlbeck & Warfield, 2010) study quality according to the available data between 1976 and 2005; with 91,931 observations. (Dechow, 1994) studies a sample which consists of the listed firms in NYSE and ASE with three intervals; quarterly, annually, and of four years. (Jeanjean & Stolowy, 2008) study 1146 firms; 422 in Australia, 321 in France, 403 in United Kingdom, excluding insurance and investment firms as they have specific accounts structure. (Barth et al., 2006) study the non US firms that apply IAS and US firms that apply US GAAP, by matching these two groups after classifying them based on (1) common period, (2) size; based on equity value, and (3) activity of the firms. (Djatej et al., 2011) divide the sample into 4892 firms from western Europe, and 1852 firms from eastern Europe. (Alali & Foote, 2012) use the data of listed firms between 2000 and 2006. (Haller et al., 2009) use the information of listed firms in the official and regulated market in Germany. (Chen et al., 2010) use data from listed firms from 15 different states of the European Union between 2000 and 2007. (Paananen & Lin, 2007) use the information of industrial listed firms found in the Data Stream database through 2000 to 2006. (Karampinis & Hevas, 2011) use the information of listed firms in Athens Stock Exchange from 2002 to 2007, by dividing the period into two parts; before adopting IFRS from 2002 to 2004 and after adopting IFRS from 2005 to 2007. (Barth et al., 2008) use the information of listed firms in 21 countries which adopted IAS between 1994 and 2003.

Several studies examine the quality of accounting information across different countries. (Barth et al., 2006) states that US firms have more variances for the change in income and the change in cash flow than non US firms, and the correlation between accruals and cash is significantly less negative in the US firms compared with non US firms. Generally, US firms that apply US GAAP have more information quality than non US firms. (Djatej et al., 2011) find that the quality of public and private information in western European countries is higher than the quality of public and private information in eastern European countries. (Anandarajan & Hasan, 2010) find that the relevance of information is affected by the level of mandated disclosure, the source of standards in the different countries, and the legal environment.

By looking at the results of the different studies, most agree that the adoption of IFRS improves the information quality when compared with local standards. (Alali & Foote, 2012) state that adopting IFRS increases the relevance of accounting information, which is more relevant for small firms than big firms. (Haller et al., 2009) state that IAS 16, IAS 19, IAS 37 and IFRS 3 have significant effect on equity post adoption of IFRS. (Chen et al., 2010) find that adopting IFRS improve accounting information quality by reducing the targeted earnings management, as adopting IFRS increases accrual quality. (Barth et al., 2008) state that adopting IAS declines earnings management and improves the quality of time for loss recognition, which means that IAS improves information quality. (Ashbaugh & Pincus, 2001) find that, after adopting IAS, earnings forecasts have been improved.

Conversely, some studies find that adopting IFRS increases earnings management. (Paananen & Lin, 2007) state that the adoption of IFRS has a negative effect on accounting information quality because of the conversion into the new standards. (Karampinis & Hevas, 2011) find that adopting IFRS has a minor impact on information quality, while (Clarkson et al., 2011) find that the benefit of adopting IFRS is limited. (Jeanjean & Stolowy, 2008) state that earnings management does not decline after adopting IFRS, but it even increases in France after the adoption.

Contribution of this study

According to the previous literature review, the quality of the accounting information is measured based on aggregated amounts extracted from financial statements, such as Net Income and Owners' Equity amounts. They measure the quality of accounting information through the measurement of earnings management, income smoothing, and timely loss recognition. To the best of my knowledge, no study has applied a methodology that measures the value relevance for each firm separately in Borsa Istanbul.

Study objective:

The objective of this study is to determine whether the preparation of the accounting information under IFRS for the manufacturing companies listed at Borsa Istanbul improves the relevance of this information.

7   Study hypothesis:

Based on the previous discussion of the literature review, there is no certain result for the impact of IFRS

adoption. Each country has specific features due to their different economic characteristics which affect the adoption of IFRS, such as proportion of foreign revenue, size, and leverage. Hence the net effect for the Turkish IFRS adoption is uncertain too (Tarca, 2004). According to the literature review in the previous section, there is more than one view explaining the impact of adopting IFRS. This study detects the relevance of accounting information by measuring value relevance which is accomplished through testing the following hypothesis:

H: Successive adoption of IFRS, higher accounting information relevance at the manufacturing sector according to each separate firm.

8 Research design
Data and sample selection
The data used in the empirical part of this study is divided into two periods. The first period is between 1996 and 2004, while the second period is between 2005 and 2013. Numerous databases are used to construct the dataset. The databases of the public disclosure platform (KAP) and Borsa Istanbul (BIST) are utilized for extracting the market share of the listed manufacturing firms. Additionally, the database of FINNET is used to extract the data of financial statements of the manufacturing listed firms. The sample is comprised of all manufacturing listed firms on BIST for an 18 year observation period. However, firms that lack consecutive data were excluded in order to construct a balanced pooled data model. The total number of manufacturing listed firms for the period 1996 - 2013 at Borsa Istanbul is 161 firms. The firms that satisfy the sample selection criteria amounted to 100 firms. Those firms have had complete data during the test period.

Research methodology
This part applies Barth's model to measure the relevance of accounting information, which measures the impact of IFRS adoption on the market share. Barth's model measures the relationship between market share as a dependent variable and book value of equity and earnings as independent variables. Finding the explanatory power of earnings and shareholder's equity explains the movement of stock price (Ali & Hwang, 2000; Ely & Waymire, 1999; Francis & Schipper, 1999). The result is interpreted by making a comparison between the value of R square for the pre and post adoption of IFRS periods. The model is presented as follows:

$$p_{j,t} = \delta_{0,t} + \delta_{1,t} bv_{j,t} + \delta_{2,t} EARN_{J,t} + \varepsilon_{j,t}$$

Usually, most articles measure relevance using pooled and cross-sectional data. However, this study uses separate data for each firm.

Data analysis and results
Relevance model
This subsection examines the impact of IFRS adoption by measuring the relationship between market share as a dependent variable and book value of equity and earnings as independent variables. Finding the explanatory power of earnings and shareholders equity explains the movement of stock price.

The relevance model examines the ability of book values and earnings to explain stock prices (Barth et al., 2001; Francis & Schipper, 1999; Ohlson, 1995). The following equation was used to measure relevance:

$$p_{j,t} = \delta_{0,t} + \delta_{1,t} bv_{j,t} + \delta_{2,t} EARN_{J,t} + \varepsilon_{j,t}$$

$p_{j,t}$: The closing weighted average share price of firm j at the announcement day of period t.

$bv_{j,t}$: Book value of firm j according to period t financial statements.

$EARN_{J,t}$: Net earnings after tax for firm j at period t.

$\delta_{1,t}$: Coefficient for book values.

$\delta_{2,t}$: Coefficient for earnings.

All variables are normalized by their division by the average number of outstanding shares during the related period. In addition, the effects of the adoption of IFRS are measured by the comparison of the two periods; (1) 1996 (Q1) – 2004 (Q4) and (2) 2005 (Q1) to 2013 (Q2).

Relevance for separate firm data
The outcome shows that information relevance for exactly 50 percent of the firms increases, while as for the other half of firms, the information relevance decreases.

When the multiple regression model is applied for each firm separately, the results show 87 out of 100 (87.00%) firms have significant explanatory power in the pre adoption period. While as, 82 out of 100 (82.00%) firms have significant explanatory power in the post adoption period. When both periods are compared, 71 firms have significant explanatory power for the pre and post adoption periods.

The Z transformation test is then applied on the 71 firms with significant regression models for both periods. The result of the Z transformation test is shown in the attached table, where (1) has been assigned for firms with increasing Z value post

adoption IFRS, and (0) is used to refer to firms with decreasing Z value post adoption IFRS. According to these results, Z value of 36 out of 71 firms (50.70%) has improved after the adoption of IFRS, as shown in appendix.

Conclusion

The results of applying the relevance model on each firm separately show that, after the adoption of IFRS, the relevance of the accounting information increases for 50.70 percent of the firms and decreases for the remaining 49.30 percent.

Therefore, based on the above results, it could be concluded that there   no positive significant impacts after the adoption of IFRS on the predictability and relevance of accounting information prepared under IFRS for the manufacturing companies listed at Borsa Istanbul on the market share or the stock price of these firms.

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Table 1: Z transformation test (relevance for separate firm data)

#	Company	pre-adoption	post-adoption	Difference (post-pre)	Improved (1), Deterioration (0)
1	ADANA	0.03614	0.99929	-0.96315	1
2	ADBGR	-0.08171	0.96984	-1.05155	1
3	ADEL	0.58613	1.50305	-0.91692	1
4	ADNAC	-0.12493	0.89788	-1.02281	1
5	AFYON	1.03005	0.97639	0.05366	0
6	ALCAR	0.58613	0.69834	-0.11221	1
7	ANACM	-0.05421	1.41473	-1.46894	1
8	ARCLK	-0.61992	-0.63958	0.01966	0
9	ATEKS	-0.93813	0.17494	-1.11307	1
10	AYGAZ	-0.23492	0.99601	-1.23093	1
11	BAGFS	-0.27028	1.33295	-1.60323	1
12	BFREN	1.79218	-0.96343	2.75561	0
13	BRISA	0.51542	-0.61342	1.12884	0
14	BRSAN	0.14614	1.15957	-1.01343	1
15	BTCIM	0.42114	-0.74099	1.16213	0
16	BUCIM	-0.22314	0.98947	-1.21261	1
17	BURCE	0.22864	0.54786	-0.31922	1
18	CELHA	-0.78099	0.17494	-0.95593	1
19	CEMTS	1.85504	1.51941	0.33563	0
20	CIMSA	-0.03457	-0.77697	0.7424	0
21	CMENT	-1.26812	-0.05077	-1.21735	1
22	COMDO	1.16362	-0.40733	1.57095	0
23	DENCM	-0.30171	-0.66248	0.36077	0
24	DERIM	0.35042	0.00811	0.34231	0
25	DEVA	-0.69456	0.7703	-1.46486	1
26	DGZTE	-0.35671	-0.4106	0.05389	0
27	DITAS	-0.40385	1.84653	-2.25038	1
28	DOGUB	0.8572	-0.94053	1.79773	0
29	DURDO	0.43685	0.26981	0.16704	0
30	DYOBY	1.64683	0.46608	1.18075	0
31	ECYAP	1.22255	-0.94053	2.16308	0
32	EGEEN	-0.86348	1.30351	-2.16699	1
33	EGPRO	-0.121	0.26327	-0.38427	1
34	ERBOS	-0.7967	1.31005	-2.10675	1
35	EREGL	-0.03457	0.61328	-0.64785	1
36	ESEMS	0.73934	1.16285	-0.42351	1
37	FMIZP	1.6154	1.72876	-0.11336	1
38	FRIGO	0.67649	-1.10737	1.78386	0
39	FROTO	0.6647	-0.56762	1.23232	0
40	GENTS	1.16362	0.76703	0.39659	0
41	GOLTS	0.21685	-0.82931	1.04616	0

#	Company	pre-adoption	post-adoption	Difference (post-pre)	Improved (1), Deterioration (0)
42	GOODY	0.31114	1.19556	-0.88442	1
43	GUBRF	-1.20919	0.71469	-1.92388	1
44	HEKTS	-0.0935	-0.62323	0.52973	0
45	HURGZ	1.52504	-0.57416	2.0992	0
46	HZNDR	0.50363	-0.70174	1.20537	0
47	KAPLM	-0.6592	0.13896	-0.79816	1
48	KARTN	1.76468	-0.57743	2.34211	0
49	KENT	0.05186	0.27635	-0.22449	1
50	KONYA	0.09507	-0.57416	0.66923	0
51	KRTEK	-0.97741	-0.74426	-0.23315	1
52	KUTPO	1.65861	1.55212	0.10649	0
53	MERKO	0.6647	-0.60033	1.26503	0
54	MRSHL	-1.14634	-0.85548	-0.29086	1
55	MUTLU	-1.29955	1.49978	-2.79933	1
56	PARSN	0.02829	0.21747	-0.18918	1
57	PETKM	1.73718	1.0549	0.68228	0
58	PNSUT	-1.26419	1.30024	-2.56443	1
59	PRKAB	0.60577	0.44972	0.15605	0
60	PRTAS	0.38185	1.3951	-1.01325	1
61	SARKY	-0.8517	0.24691	-1.09861	1
62	SKTAS	-0.05421	1.04835	-1.10256	1
63	SNPAM	1.83147	0.1684	1.66307	0
64	TBORG	1.50933	-0.41387	1.9232	0
65	TOASO	-0.69849	0.73759	-1.43608	1
66	TUKAS	-0.46671	-0.67557	0.20886	0
67	TUPRS	-0.6867	0.87171	-1.55841	1
68	UNYEC	-0.05421	-0.93726	0.88305	0
69	USAK	0.49185	-0.90782	1.39967	0
70	VESTL	1.22648	0.72123	0.50525	0
71	YUNSA	0.66863	-0.8195	1.48813	0