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Compliance with IAS/IFRS and firm characteristics: evidence from the emerging capital market of Turkey

Ali Uyar^a, Merve Kılıç^b and Başak Ataman Gökçen^c

^aDepartment of Management, Fatih University, Istanbul, Turkey; ^bDepartment of Management, Canik Başarı University, Samsun, Turkey; ^cDepartment of Management, Marmara University, Istanbul, Turkey

ABSTRACT

The purpose of this study is to investigate the compliance level of Turkish firms with international accounting standards (IAS) and international financial reporting standards (IFRS), and to examine the factors that impact adoption level of firms to IAS/IFRS. This study is based on a comprehensive questionnaire survey about IAS/IFRS implementation of largest Turkish industrial firms, namely ICI 500. The findings and implications are important as these companies are expected to be the leading adopters of IAS/IFRS. Firstly, we determined that firms do not implement all IAS/IFRS (international accounting standards/international financial reporting standards) equally; some are used more, some less. As a second stage in the study, we tried to determine what firm characteristics impact compliance with IAS/IFRS. We found that listing status, training staff, foreign ownership, and firm size are significant determinants of IAS/IFRS compliance, whereas leverage and profitability are not.

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1. Introduction

Globalisation is impacting the accounting field as it does almost every field. It generates a great motivation for harmonisation of accounting practices all over the world. Harmonisation in the accounting field is a kind of using a single language of business to promote universal understanding. This reality has resulted in the emergence of international accounting standards (IAS) and international financial reporting standards (IFRS). Thus, one of the global phenomena in the accounting field has been the adoption of IAS/IFRS in the recent decade. The EU's decision requiring all EU-listed companies to comply with IAS/IFRS for consolidated financial statements, beginning on or after 1 January 2005 (EC, 2002), has produced considerable progress towards the convergence of accounting standards.

There are some motivations behind and benefits derived from harmonisation of accounting practices. Listing on multiple stock exchanges (El-Gazzar, Finn, & Jacob, 1999), improving comparability and transparency of financial reports (Jermakowicz & Gornik-Tomaszewski, 2006), increasing market efficiency (Jermakowicz & Gornik-Tomaszewski,

CONTACT Ali Uyar  aliuyar@hotmail.com

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2006), reduce the cost of raising capital (Jermakowicz & Gornik-Tomaszewski, 2006), obtaining foreign capital (El-Gazzar et al., 1999), increasing foreign direct investment (Gordon, Loeb, & Zhu, 2012), reducing the cost of financial reporting and analysis for multinationals (El-Gazzar et al., 1999) are just a few of these as argued by supporters of harmonisation. However, the IAS/IFRS are also considered too complicated (Jermakowicz & Gornik-Tomaszewski, 2006; Larson & Street, 2004; Navarro-Garcia & Bastida, 2010; Tyrrall, Woodward, & Rakhimbekova, 2007), too costly (Jermakowicz & Gornik-Tomaszewski, 2006; Larson & Street, 2004; Navarro-Garcia & Bastida, 2010), and too comprehensive (Larson & Street, 2004).

Most of the previous IFRS studies centred around three topics. Some studies investigated the compliance level with the standards in various countries either by questioning whether the standards are applied in the chosen country or by evaluating the disclosure level. Some studies examined which firm characteristics impact adoption level. Some others have investigated the perceptions of practitioners and firms regarding some issues of IFRS adoption, such as advantages, disadvantages and so on. The purpose of this study is twofold: (1) to investigate the compliance level of Turkish firms with IAS/IFRS; and (2) to examine the factors that impact adoption level of firms to IAS/IFRS.

This study is based on a comprehensive questionnaire survey about IAS/IFRS implementation of largest Turkish industrial firms, namely the Istanbul Chamber of Industry (ICI) 500¹. The findings and implications are important as these companies are expected to be the leading adopters of IAS/IFRS. We aim to contribute to the existing literature regarding a global topic, such as IAS/IFRS compliance, in the context of emerging markets. International readers also can benefit from the findings of the study about drivers of IAS/IFRS compliance level of industrial firms.

The remainder of the article is structured as follows. The next section provides a literature review. The third section gives brief information about regulatory environment in Turkey. Section four formulates the hypotheses. Section five presents the methodology of the study. The results are analysed in section six. Finally, section seven concludes the article.

2. Literature review

In recent years the adoption of the IAS/IFRS has been on the agenda of many countries including developed and developing ones. Thus, investigation of the adoption process of IAS/IFRS has been one of the most popular research topics in the field of accounting. Earlier studies have searched the perceptions of accountants' and firms' regarding IAS/IFRS adoption process. Some of those studies have examined the adoption of IAS/IFRS in developing countries (Ataman & Akay, 2004; Ballas, Skoutela, & Tzovas, 2010; Chamisa, 2000; Cole, Branson, & Breesch, 2011; Jones & Higgins, 2006; Madawaki, 2012; Mir & Rahaman, 2005; Tyrrall et al., 2007), and some others in developed countries (Dumontier & Raffournier, 1998; Glaum & Mandler, 1997; Goodwin, Cooper, & Johl, 2008; Hellmann, Perera, & Patel, 2010; Navarro-Garcia & Bastida, 2010). Mir and Rahaman (2005) have searched the adoption of IAS in Bangladesh by evaluating the decision of the Bangladeshi Government and accounting professionals. Tyrrall et al. (2007) have analysed the relevance of IFRS to an emerging country, Kazakhstan, to determine if this set is appropriate or not for developing countries. They have employed a case study to examine the relevance and adoption of IFRS to an emerging country. Barniv and Fetyko (1997) have examined the

attitude of the accounting professionals toward the harmonisation of financial reporting applications by analytical and empirical methods. Dumontier and Raffournier (1998) and El-Gazzar et al. (1999) have searched why the entities voluntarily adopt IAS by employing empirical analysis. They analysed the effects of several firm characteristics on their voluntary adoption behaviour of IAS. Ataman and Akay (2004) have analysed the effectiveness of the IAS adoption of ICI 500 companies in Turkey by employing a survey.

There are some research studies conducted in developed countries. Jones and Higgins (2006) have analysed adoption of IFRS in Australia by employing a telephone survey. They have also investigated business entities' preparedness level for the transition process of IFRS in this survey. Hellmann et al. (2010) have investigated the issues related to the adoption of IFRS in Germany by interviewing a sample of stakeholders. Guerreiro, Rodrigues, and Craig (2008) have also investigated the preparedness level of the Portuguese entities for adopting IFRS and have determined the effect of several firm characteristics on their preparedness. Navarro-Garcia and Bastida (2010) have investigated the possible effects of the IFRS on the accounting applications of the entities by applying questionnaires to Spanish financial managers and chief accountants. Rezaee, Smith, and Szendi (2010) have evaluated the convergence in accounting standards by obtaining the views of both academicians and practitioners.

Previous studies used various methods to measure the compliance level of firms with IAS/IFRS. Some studies used disclosure index for a single IAS/IFRS (Joshi & Al-Mudhahki, 2001); some set up a disclosure index for several IAS/IFRS (Al-Shammari, Brown, & Tarca, 2008; Hodgdon, Tondkar, Adhikari, & Harless, 2009; Street & Gray, 2002); and Joshi and Ramadhan (2002) adopted questionnaire survey approach. Later on, they tried to ascertain what firm characteristics impact IAS/IFRS compliance level. Different variables were used to evaluate the extent of IAS/IFRS compliance level such as firm size (Al-Shammari et al., 2008; Dumontier & Raffournier, 1998; Hodgdon et al., 2009; Iatridis & Rouvolis, 2010; Joshi & Bremser, 2003; Kim, Tsui, & Yi, 2011; Lopes & Rodrigues, 2007; Murphy, 1999; Street & Bryant, 2000; Tower, Hancock, & Taplin, 1999), leverage (Al-Mutawaa & Hewaidy, 2010; Al-Shammari et al., 2008; Dumontier & Raffournier, 1998; El-Gazzar et al., 1999; Hodgdon et al., 2009; Iatridis & Rouvolis, 2010; Kim et al., 2011; Lopes & Rodrigues, 2007; Murphy, 1999; Tower et al., 1999), profitability (Al-Mutawaa & Hewaidy, 2010; Dumontier & Raffournier, 1998; Guerreiro et al., 2008; Hodgdon et al., 2009; Iatridis & Rouvolis, 2010; Kim et al., 2011; Street & Gray, 2002; Tower et al., 1999), and listing status (Bova & Pereira, 2012; Hodgdon et al., 2009; Street & Bryant, 2000; Street & Gray, 2002). The findings of these empirical studies will be provided in the hypotheses section, thus we do not document them here.

3. Regulatory environment in Turkey

Turkey is one of the largest emerging markets in the world. Emerging markets differ from developed countries in some respects. They have a high growth rate which increases the need for external financing. To attract foreign investors, firms need to enhance their transparency. The only way to do this is to publish more accurate reporting, and to present full and fair disclosure. Secondly, the emerging markets incur higher agency costs due to information asymmetry and concentrated ownership. To reduce the agency costs and information gap, there is a need for better corporate reporting. All of those factors necessitate adoption for IFRS in emerging economies.

The regulatory bodies in Turkey have played important roles in the adoption process of IAS/IFRS². The Capital Markets Board (CMB) required the adoption of IAS/IFRS beginning from the year 2005. Meanwhile, the IAS/IFRS was fully translated by the Turkish Accounting Standards Board (TASB). The TASB had an agreement with the International Accounting Standards Board (IASB) to officially translate and publish IAS/IFRS and the related interpretations (UNCTAD, 2008). As of mid-2007, the TASB has published 31 Turkish Accounting Standards (TAS) and seven Turkish Financial Reporting Standards (TFRS) for harmonisation purposes (Koc Yalkin, Demir, & Demir, 2006). The TASB has been replaced by a new institution called the Public Oversight, Accounting and Auditing Board (POAAB) in 2011. The POAAB is the unique authority in the country to prepare the Turkish version of the standards, and to get them ready for implementation. When the EU has declared that the IFRS will be effective starting in 2005, the standard setters in Turkey have also promulgated this set for the use of the banks and all of the listed entities (Koc Yalkin et al., 2006). Besides, Turkey's candidate status for the EU has also affected the adoption process of IFRS (Alp & Ustundag, 2009). The recently promulgated new Turkish Commercial Code, which has been effective since July 1, 2012, also requires the adoption of IAS/IFRS by Turkish firms.

4. Hypotheses

4.1. Size

Firm size is an important determinant of IAS/IFRS compliance. There are several reasons and arguments as to why larger firms are expected to comply with IFRS. Watts and Zimmerman (1990) links size to accounting practices via political costs hypothesis arguing that size is a proxy variable for political attention. Thus, large companies have to reduce political costs by increasing the credibility of financial statements through IAS/IFRS compliance (Guerreiro et al., 2008). Besides, larger companies are assumed to have superior information systems; hence, compliance with IAS/IFRS is supposedly less costly in larger companies than in smaller ones (Lopes & Rodrigues, 2007). Another plausible explanation is that larger companies may be older, have more established reporting systems which make IAS/IFRS compliance less costly for them (Al-Shammari et al., 2008). Moreover, larger companies can afford costs of IAS/IFRS adoption more easily and can allocate more resources relative to smaller ones. Majority of earlier studies such as Al-Shammari et al. (2008), Dumontier and Raffournier (1998), Joshi and Bremser (2003), Hodgdon et al. (2009), Iatridis and Rouvolis (2010), Lopes and Rodrigues (2007), and Kim et al. (2011) found significant positive association between IAS/IFRS compliance and firm size, whereas Murphy (1999), Street and Bryant (2000), and Tower et al. (1999) could not find a significant relation between size and IAS compliance. Thus, we formulate the following hypothesis:

Hypothesis 1. *Firm size has significant positive impact on IAS/IFRS compliance.*

4.2. Leverage

Another variable which is tested for possible influence of IAS/IFRS adoption is leverage. Lopes and Rodrigues (2007) explain the linkage with agency cost theory. According to the researchers, higher level of leverage induces more agency costs, and compliance with IAS

can be used to reduce information asymmetry and agency costs between debt holders and managers. However, prior research provides conflicting results in relation to the association between leverage and IAS/IFRS compliance. While some researchers found a negative association between leverage and IAS/IFRS compliance (El-Gazzar et al., 1999; Kim et al., 2011), Al-Shammari et al. (2008) and Iatridis and Rouvolis (2010) found a positive association, while many others found an insignificant relationship (Al-Mutawaa & Hewaidy, 2010; Dumontier & Raffournier, 1998; Hodgdon et al., 2009; Lopes & Rodrigues, 2007; Murphy, 1999; Tower et al., 1999). Based on the theoretical argument, however, we state the following hypothesis:

Hypothesis 2. *Leverage has significant positive impact on IAS/IFRS compliance.*

4.3. Listing status

Prior studies investigated the influence of listing status on IAS/IFRS compliance. They generally defined the listing status of a firm in terms of whether a company is listed only on the stock exchange of country of origin, or both on the country of origin and on a foreign stock exchange or on multiple stock exchanges (Lopes & Rodrigues, 2007; Street & Gray, 2002). We utilised the listing status based on whether a firm is listed in the ISE or not. If a firm is listed on an organised stock exchange, it has more diffused ownership which leads to higher agency costs. Thus, the firm has to comply with IAS/IFRS to reduce agency costs. Moreover, public firms' compliance with IFRS is more likely to reap both financing and contracting benefits through improved financial reporting (Bova & Pereira, 2012). Furthermore, Bova and Pereira (2012) provided empirical evidence that public firms exhibit greater IFRS compliance than private firms. Navarro-Garcia and Bastida (2010) have indicated that listed companies' financial statement preparers have better knowledge about IFRS. Hence the following hypothesis is set forth:

Hypothesis 3. *Listing status (i.e. being listed in the ISE) has significant positive impact on IAS/IFRS compliance.*

4.4. Training

Complaints regarding the difficulty in understanding IAS/IFRS are voiced by users frequently. The IAS/IFRS might be quite different than the previous standards and applications in the home country. Besides, the language used in IAS/IFRS is not easy to understand, as it includes technical terms, definitions, and measurement methods. Thus, they are perceived as difficult to understand, even by professional accountants in some instances. Therefore, training organised by professional or governmental bodies is needed to introduce the standards to accountants and to make sure that they are properly understood and applied. Thus, the following hypothesis is formulated:

Hypothesis 4. *Training has significant positive impact on IAS/IFRS compliance.*

4.5. Profitability

Profitable companies are prone to higher political costs, and they need to increase the reliability of the published financial statements by preparing them in accordance with IAS/IFRS. Besides, Guerreiro et al. (2008) argue that profitable firms signal the reliability of reported profits, and they can accomplish this by complying with IAS/IFRS. Several prior studies tested the effect of profitability on the compliance with IAS/IFRS and found conflicting results. Al-Mutawaa and Hewaidy (2010), Dumontier and Raffournier (1998), Street and Gray (2002), and Tower et al. (1999) found an insignificant association between profitability and IAS/IFRS compliance, whereas Guerreiro et al. (2008) and Hodgdon et al. (2009) found a negative association. Iatridis and Rouvolis (2010) and Kim et al. (2011) have found a significant positive relationship between IAS/IFRS compliance and profitability. Based on the theoretical argument, we formulate the following hypothesis:

Hypothesis 5. *Profitability has significant positive impact on IAS/IFRS compliance.*

4.6. Foreign ownership

Bova and Pereira (2012) argue that foreign investors are expected to induce greater IFRS compliance in the firms they invest in due to two reasons: to improve firm monitoring and to reduce information asymmetries, both of which are more important for foreign investors compared to domestic investors. Their findings provided evidence that foreign ownership is positively and significantly correlated with IFRS compliance. Thus, our hypothesis is formulated as:

Hypothesis 6. *Foreign ownership has significant positive impact on IAS/IFRS compliance.*

5. Methodology

Previous studies opted for the questionnaire survey method to investigate the opinions of firms, accountants, professional bodies and so on regarding standards. Thus, we administered an online questionnaire survey to collect data. The questionnaire survey was adopted from several earlier studies (Aamir & Farooq, 2010; Guerreiro et al., 2008; Jermakowicz & Gornik-Tomaszewski, 2006; Jones & Higgins, 2006; Joshi & Ramadhan, 2002; Larson & Street, 2004; Navarro-Garcia & Bastida, 2010; Rezaee et al., 2010; Tyrrall et al., 2007). The sample included ICI 500 companies for the year 2010. This ranking is based on production-based sales revenues. The names of ICI 500 companies along with some financial data and contact information are publicised by ICI every year. Names of 23 companies were not declared since they wished to remain anonymous and mail addresses of 32 firms were inactive. Therefore, the final sample consisted of 445 firms. We emailed those companies three times. However, we received only 89 responses which were below our expectations. This is probably due to the fact that they are the largest companies, and hence they may receive numerous questionnaires from researchers. This may create too much extra work for them and subsequently they decline to answer some, if not all.

6. Results and analysis

6.1. Descriptive statistics

Descriptive statistics will be presented with respect to the background of respondents first. We asked the education level of survey respondents. The highest portion of the respondents is four-year faculty graduates (76.4%), followed by master's degree holders (21.3%). Secondly, most of the respondents have more than 10 years' experience in the accounting field. Thirdly, the majority of the respondents are either the accounting manager or chief financial officer. All of these characteristics increase the likelihood that knowledgeable personnel in the accounting field have answered the questionnaire survey. The detailed data regarding respondents' profiles is provided in Table 1.

Moreover, we document the characteristics of firms from which we received completed questionnaires. Out of 89 firms, 82 (92.1%) are manufacturing companies. The number of employees is usually above 500. Their sales revenues are above 500,000,000 TL³. Surprisingly, most of the respondents are non-listed firms (79.8%) rather than listed ones (20.2%). We expected the opposite since listed firms are more familiar with the subject, and are already implementing IAS/IFRS mandatorily. Unfortunately, 64% of firms do not arrange training programmes for IAS/IFRS and do not implement IAS/IFRS currently although these firms are the largest corporations of Turkey. With respect to duration of adoption of IAS/IFRS, firms think that complete adoption of IAS/IFRS might take two to 10 years. The detailed statistics are presented in Table 2.

6.2. Level of compliance with IAS/IFRS

We investigated the level of compliance with IAS/IFRS by asking whether a firm was implementing each IAS/IFRS at the time the survey was implemented on a YES/NO basis. The results indicated that some standards are implemented more than the others. The highest implementation rate belongs to IAS 2 Inventories, IAS 1, IAS 7, IAS 38, IFRS 1, IAS 16, and IAS 18. The least adopted standards are IAS 11, IFRS 2, IFRS 4, IAS 31, and IAS 41. This finding is not surprising since some IAS/IFRS are not relevant for the operations of

Table 1. Descriptive statistics (respondents).

	Frequency	Percentage
<i>Education level</i>		
High school	1	1.1
Four-year faculty graduate	68	76.4
Master's degree	19	21.3
PhD	1	1.1
Total	89	100.0
<i>Years of Experience</i>		
Less than 5	1	1.1
Between 5–10	12	13.5
Between 11–20	42	47.2
More than 20	34	38.2
Total	89	100.0
<i>Position</i>		
Chief financial officer (CFO)	20	22.5
Accounting manager	40	45.0
Other (various positions related to accounting)	29	32.5
Total	89	100

Source: Authors' calculation.

Table 2. Descriptive statistics (firms).

	Frequency	Percentage
<i>Industry</i>		
Service	2	2.2
Manufacturing	82	92.1
Merchandising	5	5.6
Total	89	100.0
<i>Number of employees</i>		
Less than 250	9	10.1
Between 250–500	17	19.1
Between 501–1 000	23	25.8
More than 1 000	40	44.9
Total	89	100.0
<i>Sales revenues in 2010</i>		
Less than or equal to 250 000 000 TL	32	37.1
Between 250,000,001–500,000,000 TL	22	24.7
Between 500,000,001–1,000,000,000 TL	21	23.6
More than 1,000,000,000 TL	13	14.6
Total	89	100.0
<i>Listing status</i>		
Listed	18	20.2
Non-listed	71	79.8
Total	89	100.0
<i>Does your firm arrange IFRS training?</i>		
Yes	32	36.0
No	57	64.0
Total	89	100.0
<i>Does your firm apply IFRS currently?</i>		
Yes	32	36.0
No	57	64.0
Total	89	100.0
<i>How long does it take to complete adoption of IFRS?</i>		
It can be completed instantly		
1 to 2 years	6	6.7
3 to 5 years	32	36.0
6 to 10 years	44	49.4
It can never be completed	7	7.9
Total	89	100.0

Source: Authors' calculation.

companies such as construction contracts, insurance contracts, agriculture and so on. If a company does not engage in construction projects, it is not expected to implement IAS 11. Similarly, a firm which has no agricultural activities is not expected to apply IAS 41. However, almost all companies commonly engage in some activities such as compiling inventories for production, sale or service delivery. Likewise, they generate revenue and cash from their operations. Thus, they are expected to use the relevant IAS/IFRS. Therefore, we can infer that all IAS/IFRS are not equally implemented in firms. Table 3 presents the compliance level of all standards that were available at the time the survey was administered. In the next section, we develop a model to investigate what firm characteristics impact IAS/IFRS compliance level found in this section.

6.3. Model development

We employed an Ordinary Least Square (OLS) regression to examine the association between IAS/IFRS compliance level and the explanatory variables. The following model is established:

Table 3. Adoption level of IAS/IFRS.

IAS/IFRS Adoption	Listed Firms		Non-listed Firms		Total	
	No.	%	No.	%	No.	%
IFRS 1 First time adoption of international financial reporting standards	11	61.1%	19	26.8%	30	33.7%
IFRS 2 Share-based payment	2	11.1%	3	4.2%	5	5.6%
IFRS 3 Business combinations	5	27.8%	3	4.2%	8	9.0%
IFRS 4 Insurance contracts	0	0.0%	5	7.0%	5	5.6%
IFRS 5 Non-current assets held for sale and discontinued operations	9	50.0%	10	14.1%	19	21.3%
IFRS 6 Exploration for and evaluation of mineral resources	4	22.2%	3	4.2%	7	7.9%
IFRS 7 Financial instruments: disclosures	13	72.2%	9	12.7%	22	24.7%
IFRS 8 Operating segments	12	66.7%	7	9.9%	19	21.3%
IFRS 9 Financial instruments	13	72.2%	11	15.5%	24	27.0%
IAS 1 Presentation of financial statements	13	72.2%	16	22.5%	29	32.6%
IAS 2 Inventories	15	83.3%	19	26.8%	34	38.2%
IAS 7 Statement of cash flows	14	77.8%	18	25.4%	32	36.0%
IAS 8 Accounting policies, changes in accounting estimates and errors	13	72.2%	11	15.5%	24	27.0%
IAS 10 Events after the reporting period	15	83.3%	13	18.3%	28	31.5%
IAS 11 Construction contracts	0	0.0%	3	4.2%	3	3.4%
IAS 12 Income taxes	13	72.2%	14	19.7%	27	30.3%
IAS 16 Property, plant and equipment	15	83.3%	15	21.1%	30	33.7%
IAS 17 Leases	8	44.4%	7	9.9%	15	16.9%
IAS 18 Revenue	13	72.2%	17	23.9%	30	33.7%
IAS 19 Employee benefits	14	77.8%	14	19.7%	28	31.5%
IAS 20 Accounting for government grants and disclosure of government assistance	8	44.4%	6	8.5%	14	15.7%
IAS 21 The effects of changes in foreign exchange rates	14	77.8%	13	18.3%	27	30.3%
IAS 23 Borrowing costs	11	61.1%	13	18.3%	24	27.0%
IAS 24 Related party disclosures	14	77.8%	12	16.9%	26	29.2%
IAS 26 Accounting and reporting by retirement benefit plans	8	44.4%	5	7.0%	13	14.6%
IAS 27 Consolidated and separate financial statements	13	72.2%	13	18.3%	26	29.2%
IAS 28 Investment in associates	7	38.9%	7	9.9%	14	15.7%
IAS 29 Financial reporting in hyperinflationary economies	4	22.2%	6	8.5%	10	11.2%
IAS 31 Interests in joint ventures	0	0.0%	5	7.0%	5	5.6%
IAS 32 Financial instruments: presentation	12	66.7%	8	11.3%	20	22.5%
IAS 33 Earnings per share	14	77.8%	4	5.6%	18	20.2%
IAS 34 Interim financial reporting	14	77.8%	10	14.1%	24	27.0%
IAS 36 Impairment of assets	10	55.6%	10	14.1%	20	22.5%
IAS 37 Provisions, contingent liabilities and contingent assets	10	55.6%	11	15.5%	21	23.6%
IAS 38 Intangible assets	15	83.3%	16	22.5%	31	34.8%
IAS 39 Financial instruments: recognition and measurement	12	66.7%	9	12.7%	21	23.6%
IAS 40 Investment property	6	33.3%	6	8.5%	12	13.5%
IAS 41 Agriculture	1	5.6%	4	5.6%	5	5.6%

Source: Authors' calculation.

$$\text{IFRS COMP} = \beta_0 + \beta_1 \text{LSTATUS} + \beta_2 \text{TRAINING} + \beta_3 \text{SIZE} + \beta_4 \text{LEVERAGE} + \beta_5 \text{FOWNSHIP} + \beta_6 \text{ROA} + \epsilon \quad (1)$$

where:

IFRS COMP = IAS/IFRS compliance level as measured by the ratio of total number of standards complied with to total number of standards available;

LSTATUS=dummy variable for listing status, coded as 1 for listed firms, 0 otherwise;
 TRAINING=dummy variable for IAS/IFRS training, coded as 1 for firms which are trained, 0 otherwise;

SIZE=natural logarithm of total assets;

LEVERAGE=leverage as measured by total liabilities divided by total assets;

FOWNSHIP=foreign ownership percentage;

ROA=return on assets.

6.4. Univariate analysis

Before running the regression analysis, we conducted a *Pearson and Spearman's rho correlation* analyses to check the existence of multicollinearity and to see the bivariate correlation among variables (Table 4). From the joint analysis of both correlation analyses, we have seen that IAS/IFRS compliance level has a significant positive correlation with listing status, training, foreign ownership, and firm size. The correlation coefficients are not above 0.80 which is considered as a multicollinearity threshold; thus, there is no multicollinearity problem.

6.5. Multivariate analysis

We performed an OLS regression to examine the association between IAS/IFRS compliance level and the explanatory variables. Previously, many studies have utilised multivariate regression techniques to investigate the compliance level of firms with IAS/IFRS (Al-Shammari et al., 2008; Dumontier & Raffournier, 1998; Hodgdon et al., 2009; Iatridis & Rouvolis, 2010; Joshi & Bremser, 2003; Kim et al., 2011; Lopes & Rodrigues, 2007), thus we adopted the same technique. The results of the regressions are presented in Table 5. The

Table 4. Pearson and Spearman's rho correlation analyses.

	IFRSCOMP	LSTATUS	TRAINING	LEVERAGE	ROA	FOWNSHIP	SIZE
<i>Panel A: Pearson</i>							
IFRSCOMP	1	0.529**	0.264*	0.061	-0.208	0.236	0.308*
LSTATUS	0.529**	1	0.147	-0.026	-0.210	0.022	0.261
TRAINING	0.264*	0.147	1	0.265	-0.062	-0.001	0.005
LEVERAGE	0.061	-0.026	0.265	1	-0.503**	0.058	-0.176
ROA	-0.208	-0.210	-0.062	-0.503**	1	0.069	0.154
FOWNSHIP	0.236	0.022	-0.001	0.058	0.069	1	0.059
SIZE	0.308*	0.261	0.005	-0.176	0.154	0.059	1
<i>Panel B: Spearman's rho</i>							
IFRSCOMP	1	0.518**	0.275**	0.081	-0.159	0.278*	0.268
LSTATUS	0.518**	1	0.147	-0.058	-0.116	0.075	0.289*
TRAINING	0.275**	0.147	1	0.269	-0.042	0.018	0.092
LEVERAGE	0.081	-0.058	0.269	1	-0.513**	0.032	-0.138
ROA	-0.159	-0.116	-0.042	-0.513**	1	0.047	0.185
FOWNSHIP	0.278*	0.075	0.018	0.032	0.047	1	0.124
SIZE	0.268	0.289*	0.092	-0.138	0.185	0.124	1

Source: Authors' calculation.

*Significant at 0.05 level;

**Significant at 0.01 level; IFRSCOMP is IAS/IFRS compliance level as measured by the ratio of total number of standards complied with to total number of standards available; LSTATUS is dummy variable for listing status, coded as 1 for listed firms; 0 otherwise; TRAINING=is dummy variable for IAS/IFRS training, coded as 1 for firms which are trained; 0 otherwise; SIZE is the natural logarithm of total assets; LEVERAGE is the ratio of total liabilities to total assets; FOWNSHIP is foreign ownership percentage; ROA is return on assets.

Table 5. OLS regression results.

PANEL A	Coefficient	Std. Error	t-statistic	Sig.	VIF
(Constant)	-30.988	18.923	-1.638	0.110	
LSTATUS	17.959	2.485	7.226	0.000	1.214
TRAINING	4.934	2.143	2.302	0.027	1.133
LEVERAGE	0.798	5.406	0.148	0.884	1.484
ROA	-10.612	14.670	-0.723	0.474	1.511
FOWNSHIP	0.068	0.040	1.691	0.099	1.074
SIZE	1.609	0.947	1.699	0.098	1.110
Adjusted R ²	68.7%				
F value	16.370				
Significance	0.000				

Source: Authors' calculation.

Notes: The dependent variable is IFRSCOMP (i.e. IAS/IFRS compliance level as measured by the ratio of total number of standards complied with to total number of standards available); LSTATUS is dummy variable for listing status, coded as 1 for listed firms; 0 otherwise; TRAINING is dummy variable for IAS/IFRS training, coded as 1 for firms which are trained; 0 otherwise; SIZE is the natural logarithm of total assets; LEVERAGE is the ratio of total liabilities to total assets; FOWNSHIP is foreign ownership percentage; ROA is return on assets.

findings indicate that listing status is strongly and significantly influential on IAS/IFRS compliance. The listed companies are more inclined to implement the standards rather than non-listed companies. This finding is in line with our expectations since compliance with standards are mandatory for listed companies, whereas it is not for non-listed companies. Moreover, the firms who train their employees regarding accounting standards are more likely to implement the standards. Foreign ownership is also significant in compliance with the standards. This might be due to the fact that those firms may be a foreign subsidiary or joint venture and so on. Firm size is also significantly correlated with IAS/IFRS compliance. Large companies have more financial and human resources to deploy on compliance with the standards. However, contrary to expectations, leverage and profitability are not significant determinants of IAS/IFRS compliance.

7. Conclusion

This study is based on a comprehensive questionnaire survey about IAS/IFRS implementation within the largest Turkish industrial firms, namely ICI 500. The findings and implications are important as these companies are expected to be the leading adopters of IAS/IFRS. Firstly, we determined that firms do not implement all IAS/IFRS equally; some are used more widely, some less. For example, while adoption of 'Inventories' and 'Statement of Cash Flows' are quite high, adoption of 'Share-based Payment' and 'Insurance Contracts' are very low. This difference might be attributable to differences in complexities of operations of business organisations. In addition, the least frequently used standards may not be applicable for all companies also. As a second stage, we tried to determine what firm characteristics impact compliance with IAS/IFRS. We found that listing status, training staff, foreign ownership, and firm size are significant determinants of IAS/IFRS compliance, whereas leverage and profitability are not.

The purpose of the study was both to determine the level of IAS/IFRS compliance of largest Turkish industrial firms, and to investigate the drivers of IAS/IFRS compliance among across these industrial firms. The findings of the study are quite satisfactory for both investigations. The results indicated that there are differences in the adoption of specific standards and this difference might be explained by certain firm characteristics. Thus, the

firms whose IAS/IFRS compliance level is low might improve themselves by considering determiners of compliance level as pointed out by the study.

There are some implications of the study for listed and non-listed firms. Turkey has a rapidly growing economy, and a dynamic young population, thus attracting the attention of global investors. In order to increase the flow of global capital to the country, the benefits of regulations regarding corporate reporting are quite important. Preparing financial reports in accordance with IAS/IFRS will improve the assessment of the financial position and performance of the firms. This will ease and quicken the decision-making process of foreign investment in the country.

This study has some limitations. The survey was conducted on ICI 500 firms which include large industrial enterprises, thus the findings should not be generalised to other industries and to small- and medium-sized entities. Furthermore, the findings represent the opinion of the respondents at the time the survey was implemented. Additionally, the number of standards questioned in the survey is also restricted to the standards which were available at the time of research. The preparation and adoption process of IAS/IFRS are both a dynamic process which is evolving continuously and the findings of this study must be interpreted in that light.

Notes

1. Every year, ICI 500 companies are explained by the Istanbul Chamber of Industry.
2. Turkey has fully adopted IAS/IFRS as TAS/TFRS. In the questionnaire survey we asked as TAS/TFRS, but we preferred to IAS/IFRS in the paper since it would be more relevant for international readers.
3. TL stands for Turkish liras.

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