A Cross-Country Analysis of the Impact of Culture and Economic Factors on the Convergence or Adoption of IFRS

Rogelio J. Cardona *
Karen C. Castro-González **
Carmen B. Ríos-Figueroa**

December 14, 2013

Abstract

Prior studies on the convergence or adoption of International Financial Reporting Standards (IFRS) address differences in national culture, barriers to the adoption of IFRS and the effect on financial reporting. Using the *IFRS Adoption by Country Survey* published by PricewaterhouseCoopers (PwC) in April 2012, and other data, we designed a methodology to measure the degree of convergence or adoption of IFRS in different countries and its association with Hofstede's cultural dimensions and economic factors. The results obtained suggest that certain cultural dimensions and economic factors may have an effect on a country's decision to adopt or converge to IFRS. Future research should consider other methodologies that can measure the extent to which countries have converged or adopted IFRS.

Keywords: International Financial Reporting Standards; accounting standards; convergence or adoption; cultural dimensions; economic factors.

_____

* Associate Professor of Accounting, School of Business Administration, University of Puerto Rico-Río Piedras.
** Assistant Professor of Accounting, School of Business Administration, University of Puerto Rico-Río Piedras.

Introduction

Economic transactions are measured with accounting standards that vary from country to country. Many countries have been using their own set of accounting standards but the emergence of a global economy has created the need for uniform standards. Since 2001 the International Accounting Standard Board (IASB) has been responsible for the development of accounting standards known as International Financial Reporting Standards (IFRS). The main objective of the IASB is to increase the relevance and comparability of international financial reports.

Differences in culture may affect a country's desire to join a globalized economy (Ding et al., 2005, Ramanna and Sletten, 2009 and Skotarczyk, 2011, among others). A conflict may arise between the use of international accounting standards and a country's local accounting standards. By the end of 2011, approximately 120 nations and reporting jurisdictions allowed or required IFRS for domestic listed companies, but only 90 fully conformed to IFRS and their audit reports included a statement to that effect. Prior studies related to the adoption of IFRS address issues such as a country's culture, the barriers to adoption and the impact of the adoption of IFRS on financial reporting.

The objective of this paper is to perform a cross-country study with a grading methodology to examine the effect of culture and other economic factors on the convergence or adoption of IFRS. To obtain cultural variation, our study sample includes Latin American, European, Asian, African and other countries. Recent studies discuss the degree of convergence or adoption of IFRS in Europe, the European Union (E.U.) and the United States (U.S.) (Callao-Gastón et al., 2007, 2010; Ramanna and Sletten, 2009, Armstrong et al., 2010). However, to our knowledge, there is no similar study that estimates how countries converge with or adopt IFRS.

This study represents a contribution that may assist standard setters and researchers understand how differences in culture and economic factors impact a country's decision to adopt or converge to IFRS. Estimating how countries adopt or converge to IFRS could help regulators develop mechanisms to facilitate this process.

We used a survey made by PricewaterhouseCoopers, LLP (PwC) in April 2012 (*IFRS Adoption by Country*), Hofstede's (1980, 2001) cultural dimensions, and The Global Competitiveness Report for 2011-2012 published by The World Economic Forum. Appendix A

presents the questions included in PwC's survey, which has several open-ended questions regarding the current stage of the adoption or conversion process in each country. Using the responses to the questions in PwC's survey, we designed a grading system to evaluate the degree of convergence or adoption of IFRS in each country. This grading system assigns a convergence or adoption score to each country. The results obtained are used to determine if there are any similarities or differences among countries regarding their convergence or adoption decision. The decision to converge or adopt IFRS is expected to have an indirect impact on the required disclosure of financial information by listed companies in each country. Regression and correlation analyses are used to determine if any significant association exists between the adoption score, Hofstede's cultural dimensions, and selected economic factors.

The next section provides a brief overview of the institutional background and relevant literature. The literature review is followed by a description of the sample selection procedure, the data analysis and the research methodology. The final section presents the results of the analyses and our conclusions.

Institutional background and literature review

The IFRS Resources website of the American Institute of Certified Public Accountants (AICPA) defines convergence as the development of compatible international accounting standards over time; adoption means establishing a specific timetable for public companies to implement IFRS on their financial reports. Lamoreaux (2011) distinguishes between convergence "projects" and the convergence "approach". The former refers to the process taken by the Financial Accounting Standards Board (FASB) and the IASB to develop new accounting standards, whereas the latter refers to the approach taken by the Securities and Exchange Commission (SEC) that allows countries to continue using their local standards while slowly moving towards the current IFRS.

Culture, Hofstede's Cultural Dimensions and Accounting Systems

Prior research suggests that culture plays a central role in accounting decisions. Culture has been defined differently by many authors and researchers. Kroeber and Kluckhohn (1952) identified over 160 definitions for culture. According to Liu and Mackinnon (2002), one of the most cited definitions of culture in recent years is Hofstede's (1983). Hofstede defines culture as

a collective programming of the mind, difficult to change, that distinguishes a group of people from others, and that cultural programming is hard to change, unless individuals move from their culture.

Between 1968 and 1972, Hofstede collected and analyzed on two occasions, data on 100,000 individuals who were working at The International Business Machines Corporation (IBM) in fifty different countries in three geographical regions. Hofstede used the results of this study to develop a model of four primary dimensions to identify the cultural patterns of each group consisting of four primary dimensions: individualism versus collectivism (IC), power distance (PD), uncertainty avoidance (UA), and masculinity versus femininity (MF).

In 1985, Hofstede added a fifth dimension: long-term versus short-term orientation (LTD). This fifth cultural dimension was the result of a study in which Hofstede (2001) collected and analyzed data on students in 23 countries. In 2010, Hofstede added a sixth dimension, indulgence versus restraint (IVR), based on data analysis made by Minkov with the World Values Survey for 93 countries (Hofstede G, Hofstede G.J, and Minkov, 2010). Currently neither the fifth cultural dimension (LTD) nor the sixth cultural dimension (IVR) is available for the countries in our study sample.

The individualism versus collectivism (IC) dimension measures the relationship of an individual with others. Hofstede (1983) concludes that rich countries are more individualistic and poor countries are more collectivistic. In an individualistic country, confrontations are normal, there is less conformity with the õstatus quoö, and competition is stimulated.

The power distance (PD) dimension describes how societies work with people that are not equal in physical and intellectual capacities. In organizations, the PD dimension is related to the degree of centralization of authority and autocratic leadership.

The uncertainty avoidance (UA) dimension deals with the basic fact of life: time goes only one way and we are living with uncertainties which we are aware of. The masculinity and femininity (MF) dimension shows the duality of the sexes in society. According to Hofstede (1980, 2001) in a feminine society there is less division of roles between the sexes.

Hofstede (1983) asserts that there is a global relationship between PD and collectivism. Collectivist countries always show a high PD index whereas individualistic countries always reflect a low PD index. Latin American countries (LAC) and European countries are averse to

uncertainty and show large PD. According to the author, LAC and clusters of some other countries show moderate masculinity.

For Hofstede (2001), planning and control in an organization reflect cultural assumptions and are related to the rules of PD and UA of the dominant national culture. The author states that in countries that exhibit a large degree of PD, accounting systems are mostly used to justify the decisions of those in power in the organization. In countries with a high degree of uncertainty, accounting systems will have more detailed rules to work in certain situations. In countries with low UA, accounting systems allow more discretion in organizations or accountants, to work in certain situations (e.g. U.S.). In an environment of high individualism (U.S.), information in the accounting system can be taken more seriously and can be considered more important than in collective countries. In high masculine societies (e.g. U.S. and Germany), accounting systems seek to achieve pure financial goals.

International Financing Reporting Standards

The creation of international accounting standards began in 1973, when the International Accounting Standards Committee (IASC) was established through an agreement of the leading professional accounting bodies in 10 countries: Australia, Canada, France, Germany, Ireland, Japan, Mexico, the Netherlands, the United Kingdom, and the U.S. On April 1, 2001, the newly created IASB replaced the IASC as the creator of IFRS (Doupnik and Perera, 2012).

In June 2002, the E.U. decided that IFRS implementation would be mandatory for all listed companies starting in 2005 (E.U., 2002, cited in Ding, Jeanjean and Stolowy, 2005). Russia, Australia, and New Zealand followed by introducing similar policies. In October 2002, the Financial Accounting Standards Board (FASB) and the IASB issued a memorandum of understanding towards formalizing their commitment to the convergence of U.S. and international accounting standards (Ding et. al. 2005).

Cultural and economic factors related to the adoption of IFRS

Cultural factors shape our decision making processes and how we adapt to change. Prior studies suggest that culture is a crucial factor in the adoption of IFRS and its success. Ding et al.

(2005) find that the resistance to implement IFRS is related to cultural dynamics and is not exclusively caused by contractual reasons, alleged technical superiority, or legal origin. Hope, Jin and Kang (2006) observe that countries with lenient investor protection laws and countries that are perceived to provide better access to their domestic capital markets are more likely to adopt IFRS. However, they believe that to obtain the full benefits of adopting IFRS for financial reporting, standard setters must first make changes in the economic and political environments. A similar argument was made by Yalkin, Demir and Demir (2008) who note that the Turkish Accounting Standards Board accepted the harmonization of IFRS to obtain international acceptance for Turkey.

Economic and political benefits are also derived from the adoption of IFRS. Using a sample of 102 non-E.U. countries, Ramanna and Sletten (2009), find that the most powerful countries are more resistant to IFRS adoption or surrendering their standard-setting authority to an international organization. They do not find evidence that the expected changes in foreign trade and investment flows in a country affect the adoption. They do find evidence that suggests that a country is more likely to adopt international standards if its trade partners or countries within a geographical region are adopters themselves. Skotarczyk (2011) suggests that for African and Middle Eastern countries, the adoption of IFRS may be uncertain because of differences in language, regional interpretations, religion, economy and education.

Campbell, Doupnik and Tsakumis (2009) address the adoption of IFRS and their relationship with cultural and translation differences. The authors argue that it is important for multinational corporations and their auditors to consider the impact of possible biases held by their international staff and by colleagues in their international offices so they can identify their native country's cultural predispositions and better understand how values affect their interpretations and judgments when applying accounting standards. The authors suggest that education and preparation of future professionals is necessary to overcome the impact of national culture in the application of the international standards.

Clements, Nelli and Stovall (2010) examine the relationship between country size and cultural diversity with a country's IFRS adoption decision. According to the authors, cultural influences do not seem to be a critical factor in the adoption of the international standards. They observe that smaller countries tend to adopt IFRS while larger ones tend not to. This is

consistent with the notion that larger countries have well established accounting standards and resist incurring in costs to adopt IFRS. Horton, Serafeim and Serafeim (2010) examine whether mandatory IFRS adoption improves the information environment. The results suggest that mandatory IFRS adoption has improved the quality of information intermediation in capital markets by increasing information and accounting comparability. The results obtained by Callao-Gastón et al. (2007) suggest that local comparability has worsened with the adoption of IFRS in Spain. Callao-Gastón et al. (2010) find evidence that suggests that the quantitative impact after adopting IFRS is significant for the United Kingdom and Spain.

Bova and Pereira (2012) summarize the two accepted points of view regarding a country's IFRS adoption decision. According to the authors, one point of view considers that IFRS represent improved financial reporting standards. The resulting uniformity in standards also achieves improved comparability, which results in a better information environment and an expected reduction in the cost of capital. The other point of view is that IFRS do not by themselves, result in improved financial reporting. The latter is achieved through the interaction of economic and political factors. The authors obtain empirical evidence on IFRS adoption by observing private and public firms in Kenya, a country they describe as having open capital markets with limited enforcement capabilities. Bova and Pereira (2012) note that the presence of foreign investors is positively associated with the demand for transparency brought by adopting IFRS.

Research motivation and Hypotheses development

Prior research (Ding et al., 2005; Hope et al., 2006; Clements et al., 2010 and Skotarczyk, 2011, among others) suggests that differences in culture, country size, economic and political factors may influence the adoption and subsequent successful implementation of IFRS. Clements et al. (2010) find that a country's size seems to have a larger impact than national culture on the IFRS adoption decision, but suggest researchers should revisit their findings with alternative empirical methodology. This study is a step in that direction as we partially replicate their study, however, we design our own grading system to measure the degree of convergence or IFRS adoption in each country.

Although our study research methodology design introduces elements of researcher induced bias, the results obtained provide us with additional evidence to measure the impact of cultural dimensions and economic factors on a country's IFRS convergence or adoption decision. Our sample consists of 69 countries to obtain cultural variation and incremental explanatory power for the results obtained.

Our first four research hypotheses consider the possible effects of Hofstede's four cultural dimensions on the IFRS convergence or adoption decision. However, since national culture is an exogenous variable that may also be correlated with other variables, cultural attributes might be acting as proxies for other omitted country effects. Our study includes other control variables to mitigate the existence of possible omitted country-related variables. Following Hope et al. (2006), we consider that certain economic factors, such as the existence of investor protection mechanisms and the unlimited access to capital markets, may also have an impact on a country's convergence or adoption IFRS decision.

In the present study, investor protection mechanisms and unlimited access to capital markets are represented by proxies obtained from *The Global Competitiveness Report for 2011-2012* published by the World Economic Forum. The variables selected are elements derived from the twelve pillars used to measure the competitiveness of different countries. From the Institutions pillar, we selected the following variables: strength of auditing and reporting standards, efficacy of corporate boards, protection of minority shareholders' interests, and strength of investor protection. From the Financial Market Development pillar, we selected the variable described as "regulation of securities exchanges".

. In our study, as a proxy for a country's size we used its domestic and foreign market size index as reported in The Global Competitiveness Report for 2011-2012 published by The World Economic Forum (WEF). In the WEF report, market size is one element of the twelve pillars used to measure the competitiveness of countries, which is accomplished with a domestic and a foreign market index. The domestic market size index is constructed by taking the natural log of the sum of the gross domestic product (GDP) valued at purchased power parity (PPP) plus the total value (PPP estimates) of imports of goods and services, minus the total value (PPP estimates) of exports of goods and services. Data are then normalized on a 1-to-7 scale. PPP estimates of imports and exports are obtained by taking the products of exports as a percentage

8

of GDP and GDP valued at PPP. The foreign market size index is estimated as the natural log of the value (PPP estimates) of goods and services, normalized on a 1-to-7 scale. PPP estimates of exports are obtained by taking the product of exports as a percentage of GDP and GDP valued at PPP.

Our fifth research hypothesis examines the possible effects of certain economic factors, including market size on a country's IFRS convergence or adoption decision. Although the proxies used to measure economic factors such as investor protection mechanisms, unlimited access to capital markets and market size represent another element of researcher bias, they present an alternative empirical methodology to explore the IFRS convergence or adoption decision.

Based on the results of prior research and our expectations, we developed the following research hypotheses. Countries with a large degree of power distance are highly centralized and the roles of supervisors and employees (subordinates) are clearly defined, whereas countries with low power distance are decentralized. Chan, Lin and Lai (2003) found that the characteristics of a company operating in a country with a large degree of power distance, such as the centralization of power in a few individuals, ignoring management controls and less competent staff, contribute to large accounting errors. This could involve the need to use more structured accounting guidelines. A country with a large degree of power distance is expected to adopt IFRS because the IASB would be visualized as the supervisory entity responsible for establishing the required reporting standards.

H1: A country with a large degree of power distance is more likely to have a higher IFRS adoption score.

An individualistic country considers the effects (or benefits) of rules on individuals (a õmicroö perspective), whereas a collectivist country considers the impact of rules on society (a õmacroö perspective). On the one hand, an individualistic country tends to depend on itself, not on others, and may be reluctant to grant others the authority to decide for it. On the other hand, a collectivist country is expected to prefer an external entity such as the IASB to establish its accounting standards because of the perceived long-term benefit for the majority of individuals.

H2: A highly individualistic country is more likely to have a lower IFRS adoption score.

A masculine country is characterized as promoting self-reliance and independence, whereas a feminine country is more dependent on others. An independent country is expected to be unwilling to accept accounting standards from an external (international) entity.

H3: A country with a higher masculinity index is more likely to have a lower IFRS adoption score.

A country with a high degree or tolerance for uncertainty prefers to avoid changes in their laws and regulations, i.e. accounting standards, and will not be inclined to accept a change from their own known reporting standards to adopt new (unknown) standards. A country that displays strong or high uncertainty avoidance prefers rules over principles. IFRS are considered principles-based accounting standards (Schipper, 2005; Forgeas, 2008). Therefore, a country that exhibits weaker or lower uncertainty avoidance is more open to the use of principles over rules.

H4: A country with a higher degree of uncertainty avoidance is more likely to have a lower IFRS adoption score.

Prior studies have examined the relationship between several economic factors and the probability of adoption or convergence to IFRS. Hope et al. (2006) find that countries with lenient investor protection laws and countries that are perceived to provide better access to their domestic capital markets are more likely to adopt IFRS. Horton et al. (2010) suggests that mandatory IFRS adoption has improved the quality and comparability of the accounting information in capital markets. Other studies focus on size. Clements et al. (2010) find that large countries are not expected to be inclined to adopt IFRS, whereas smaller countries are expected to be adopters because they do not have the necessary resources or infrastructure to develop their own accounting standards. The following hypothesis was developed for economic factors:

H5: A country with higher values for its economic factors (Strength of auditing and reporting standards, Efficacy of corporate boards, Protection of minority shareholders' interests, Strength of investor protection, Regulation of securities exchanges, Domestic market size index, and Foreign market size index) is more likely to have a lower IFRS adoption score.

To test these hypotheses we selected a study sample, designed an IFRS adoption or convergence scores and used regression analyses to examine the association between cultural and

economic factors and the possibility of convergence or adoption of these standards. The following section explains the sample selection and the tests used.

Research methodology and Data Analysis

Sample selection

The sample used in this study consists of 69 countries with information on the convergence or adoption of IFRS as reflected on the PwC Survey and with the available values for cultural dimensions described by Hofstede (1980, 2001). As presented in Table 1, the PwC Survey includes a total of 144 countries. Out of those countries, 75 countries have no assigned cultural values as described by Hofstede. Table 1 lists the 69 countries included in the final study sample according to the PwC Survey regional classification. There are six different regions: North America, South America, Asia, Europe, Africa and Oceana.

Table 1: Sample composition

Countries in PwC Survey	144
Less: Countries without Hofstedeøs cultural dimensions	(75)
Final study sample	**69**
Countries by region in study sample:	
North America *	8
South America	8
Asia	17
Europe	27
Africa	7
Oceana	2
Total countries in the study sample	69

* Including Central America and the Caribbean

Table 2 presents Hofstedeøs cultural dimensions for the 69 countries included in our study sample. Based on these dimensions and according to Hofstedeøs observations (1983, 2001), some LAC, like Ecuador, Guatemala and Panama, are in the bottom three spots for the IC dimension. This implies that they are highly collectivistic. Conversely, the United States, the United Kingdom, and Australia are considered the most individualistic countries in our sample. In terms of PD, Malaysia, Slovakia and Saudi Arabia, are in the top three positions. In other words, they have a higher degree of separation between members in their organizations. Austria, Israel, and Denmark are positioned as the countries with the lowest scores of PD.

In connection with the MF dimension, three European countries, Denmark, Netherlands and Norway tend to be the most feminine. Slovakia, Hungary and Japan present the highest degrees of masculinity in the sample. Portugal, Greece and Guatemala have the highest degree of UA; while, Singapore, Jamaica and Denmark have the lowest. The latter implies that they are more likely to take risks or make riskier decisions.

Table 2: Country-specific values according to Hofstede's cultural dimensions

Hofstede's Cultural Dimensions			
Country	Individualism/Collectivism	Power Distance	Masculinity/Femininity	Uncertainty avoidance
Panel A: North America			
Canada	80	39	52	48
Costa Rica	15	35	21	86
El Salvador	19	66	40	94
Guatemala	6	95	37	101
Jamaica	39	45	68	13
Mexico	30	81	69	82
Panama	11	95	44	86
United States	91	40	62	46
Region's Average	36	62	49	70
Panel B: South America			
Argentina	46	49	56	86
Brazil	38	69	49	76
Chile	23	63	28	86
Colombia	13	67	64	80
Ecuador	8	78	63	67
Peru	16	64	42	87
Uruguay	36	61	38	100
Venezuela	12	81	73	76
Region's Average	24	67	52	82
Panel C: Asia			
China	20	80	66	30
Hong Kong	25	68	57	29
India	77	48	56	40
Indonesia	14	78	46	48
Israel	54	13	47	81
Japan	46	54	95	92
Kuwait	25	90	40	80
Lebanon	40	75	65	50
Malaysia	26	104	50	36
Pakistan	14	55	50	70
Philippines	32	94	64	44
Saudi Arabia	25	95	60	80
Singapore	20	74	48	8
Taiwan	17	58	45	69
Thailand	20	64	34	64
Turkey	37	66	45	85
Vietnam	20	70	40	30
Region's Average	30	70	53	55
Panel D: Europe			
Austria	55	11	79	70
Belgium	75	65	54	94

Bulgaria	30	70	40	85
Czech Republic	58	57	57	74
Denmark	74	18	16	23
Estonia	60	40	30	60
Finland	63	33	26	59
France	71	68	43	86
Germany	67	35	66	65
Greece	35	60	57	112
Hungary	80	46	88	82
Ireland	70	28	68	35
Italy	76	50	70	75
Malta	59	56	47	96
Netherlands	80	38	14	53
Norway	69	31	8	50
Poland	60	68	64	93
Portugal	27	63	31	104
Romania	30	90	42	90
Russia	39	93	36	95
Serbia	25	86	43	92
Slovakia	52	104	110	51
Slovenia	27	71	19	88
Spain	51	57	42	86
Sweden	71	31	5	29
Switzerland	68	34	70	58
United Kingdom	89	35	66	35
Region's Average	58	53	48	72
Panel E: Asia				
Egypt	25	70	45	80
Ghana	15	80	40	65
Morocco	25	70	53	68
Nigeria	30	80	60	55
South Africa	65	49	63	49
Tanzania	25	70	40	50
Zambia	35	60	40	50
Region's Average	31	68	49	60
Panel F: Oceana				
Australia	90	36	61	51
New Zealand	79	22	58	49
Region's Average	85	29	60	50

Source: Hofstede's cultural dimensions for countries around the world are available at http://geert-hofstede.com/countries.html.

In addition to cultural dimensions, this study examines the association between certain economic factors and a country's IFRS convergence or adoption decision. Table 3 presents WEF values for the specific economic factors that are considered in this study. The first factor is Strength of auditing and reporting standards (SA). In our sample, New Zealand is the country with the highest score, while Vietnam has the lowest. If analyzed by region, the leaders in this respect are Canada, Chile, Singapore, Sweden, South Africa, and New Zealand. Whereas, El Salvador and Guatemala, Argentina, Vietnam, Russia, Nigeria and Australia have the lowest scores. The second economic factor that was included in this study is Efficacy of

corporate boards (EC).

A country from the region of Oceana (Australia) presents the highest values for a country in our sample. If analyzed by region, the leaders in this respect are practically the same: Canada, Chile, Singapore, Sweden, South Africa, and Australia. The countries with the lowest scores are: Mexico and Panama, Venezuela, Kuwait, Serbia and Greece, Egypt and New Zealand. Serbia and Greece have the lowest score.

The third economic factor is Protection of minority shareholders' interests (PM). In this respect, New Zealand is the country with the highest score and Serbia has the lowest. If analyzed by region, the leaders are Canada, Chile, Singapore, Sweden, South Africa, and New Zealand. Guatemala, Venezuela, Kuwait, Serbia, Nigeria, and Australia have the lowest scores in their regions.

The fourth economic factor is Strength of investor protection (SI). New Zealand is also the country with the highest score while Malta has the lowest. If analyzed by region, the leaders in this respect are Canada and the U.S., Colombia, Singapore, Ireland, South Africa and New Zealand. Costa Rica, Venezuela, Vietnam, Malta, Morocco, and Australia have the lowest scores in their regions.

The fifth economic factor is Regulation of securities exchanges (RS). South Africa is the leading country, while Serbia is the country with the lowest score. The regional leaders are Canada, Brazil, Singapore, Sweden, Norway and Finland, South Africa and Australia. Costa Rica, El Salvador and Panama, Peru, Vietnam, Malta, Morocco and Australia have the lowest scores in their regions.

The sixth and seventh economic factors are related to market size and are represented by a Domestic market size index (DM) and a Foreign market size index (FM). With respect to DM, the U.S. leads all the countries in the study sample. The regional leaders are the U.S., Brazil, China, Germany, South Africa and Egypt, and Australia. In terms of FM, China leads the countries in the sample. The regional FM leaders are the same countries that are DM leaders, except for Egypt, that is not a regional leader in FM. Jamaica, Uruguay, Lebanon, Malta, Zambia and New Zealand have the lowest scores in their respective regions. Malta is the country with the lowest DM and FM scores.

Table 3. World Economic Forum (WEF) Economic factors by country

Country	Strength of auditing and reporting standards (SA)	Efficacy of corporate boards (EC)	Protection of minority shareholders' interests (PM)	Strength of investor protection (SI) 0-10 (best)	Regulation of securities exchanges (RS)	Domestic market size index (DM) 1-7 (best)	Foreign market size index (FM) 1-7 (best)
			WEF Economic Factors by Country				
			Panel A: North America				
Canada	6.2*	5.6*	5.5*	8.3*	5.4*	5.3	5.7
Costa Rica	4.7	4.8	4.2	3.0<	- 3.7<	3.1<	3.9
El Salvador	4.6<	4.8	3.8	4.3	3.7<	3.1<	3.6
Guatemala	4.6<	4.9	3.7<	4.0	4.3	3.4	3.9
Jamaica	5.3	4.5	4.4	5.3	5	2.7	3.3<
Mexico	4.8	4.4<	4.1	6.0	3.8	5.4	5.9
Panama	5.0	4.4<	4.6	4.7	3.7<	3.1	3.6
United States	5.2	5.1	4.8	8.3 *	4.6	7*	6.7*
Average	**5.1**	**4.8**	**4.4**	**5.5**	**4.3**	**4.1**	**4.6**
			Panel : South America				
Argentina	3.9 <	4.1	3.5	4.7	3.6	4.8	5.1
Brazil	5.0	4.8	4.5	5.3	5.7*	5.7*	5.5*
Chile	5.6*	5.1*	4.9*	6.3*	3.8	4.2	4.9
Colombia	4.4	4.6	4.1	8.3	3.7	4.6	4.7
Ecuador	4.1	4.2	3.6	4.0	4.0	3.7	4.3
Peru	5.1	4.8	4.4	6.7	3.5<	4.2	4.7
Uruguay	4.7	4.4	4.5	5.0	4.5	3.0<	3.5<
Venezuela	4.2	4.0<	3.2<	2.3<	4.2	4.4	4.8
Average	**4.6**	**4.5**	**4.1**	**5.3**	**4.1**	**4.3**	**4.7**
			Panel C: Asia				
China	4.8	4.4	4.4	5.0	4.5	6.7**	7.0**
Hong Kong	5.9	4.9	5.0	9.0	5.6	4.3	6.1
India	5.0	4.4	4.4	6.0	5.2	6.1	6.2
Indonesia	4.3	4.5	4.3	6.0	4.4	5.1	5.5
Israel	5.9	4.8	5.2	8.3	5.5	4.1	4.8
Japan	5.4	5.1	5.0	7.0	4.9	6.1	6.1
Kuwait	4.7	3.8<	3.8<	6.3	4.0	3.5<	4.8
Lebanon	4.7	4.1	4.1	5.0	4.5	3.4	4.3<
Malaysia	5.6	5.3	5.3	8.7	5.4	4.4	5.8
Pakistan	4.2	4.2	4.0	6.3	4.2	4.7	4.6
Philippines	4.8	4.8	4.0	4.0	4.2	4.4	5.0
Saudi Arabia	5.6	5.3	5.5	7.0	5.5	4.7	5.7
Singapore	6.2*	5.6*	5.6*	9.3*	6.0*	4.1	6.0
Taiwan	5.5	4.9	5.0	5.3	5.5	4.9	6.0
Thailand	4.9	4.5	4.5	7.7	4.7	4.8	5.8
Turkey	4.4	4.2	3.9	5.7	5.0	5.1	5.3
Vietnam	3.6<<	4.2	4.1	2.7<	.6<	4.3	5.4
Average	**5.0**	**4.6**	**4.6**	**6.4**	**4.9**	**4.7**	**5.6**
			Panel D: Europe				
Austria	5.7	5.2	4.8	4.0	4.7	4.3	5.3
Belgium	5.7	5.1	5.0	7.0	5.0	4.4	5.8
Bulgaria	4.3	4.0	3.6	6.0	3.7	3.6	4.5
Czech Republic	5.0	4.7	4.0	5.0	4.7	4.2	5.4
Denmark	5.7	5.3	5.5	6.3	5.5	4.0	4.9
Estonia	5.6	4.7	4.5	5.7	4.8	2.5	3.9
Finland	6.1	5.5	5.9	5.7	5.9*	4.0	4.7
France	5.6	5.1	4.8	5.3	5.4	5.7	6.0
Germany	5.3	5.2	4.8	5.0	4.5	5.8*	6.5*
Greece	4.5	3.7<<	4.7	3.3	4.0	4.4	4.6

Hungary	5.4	4.5	4.1	4.3	4.8	3.9	5.2
Ireland	4.3	4.4	4.5	8.3*	3.9	3.7	5.3
Italy	4.3	4.0	3.7	5.7	4.3	5.5	5.9
Malta	6.0	4.4	5.1	0.0<<	5.3	2.0<<	3.3<<
Netherlands	5.9	5.3	5.2	4.7	5.2	4.8	6.0
Norway	6.0	5.5	5.7	6.7	5.9*	4.1	4.9
Poland	5.2	4.4	4.1	6.0	5.0	4.9	5.6
Portugal	4.9	4.1	4.5	6.0	4.9	4.2	4.8
Romania	4.3	4.3	3.8	6.0	3.7	4.2	4.9
Russia	3.8<	4.0	3.1	5.0	3.5	5.6	6.1
Serbia	4.0	3.7<<	2.8<<	5.3	3.3<<	3.5	3.9
Slovakia	4.6	4.6	3.9	4.7	4.0	3.7	4.9
Slovenia	4.9	4.0	3.4	6.7	4.1	3.1	4.4
Spain	4.9	4.3	4.3	5.0	3.7	5.4	5.7
Sweden	6.3*	5.9**	6.0**	6.3	5.9*	4.4	5.2
Switzerland	5.6	5.3	4.9	3.0	5.6	4.3	5.2
United Kingdom	5.9	5.3	5.2	8.0	5.1	5.7	6.0
Average	**5.2**	**4.7**	**4.5**	**5.4**	**4.7**	**4.3**	**5.1**
Panel E: Africa							
Egypt	4.3	4<	4.4	5.3	4.2	4.7*	5
Ghana	4.7	4.7	4.5	6	4.3	3.3	3.9
Morocco	4.3	4.8	4.5	3.3<	4.8	3.9	4.4
Nigeria	3.7	4.3	3.7<	5.7	4	4.4	5
South Africa	6.5**	5.8*	5.8*	8*	6.4**	4.7*	5.1*
Tanzania	4.1	4.1	3.8	5	3.6<	3.3	3.7
Zambia	4.8	4.8	4.4	5.3	4.3	2.4<	3.3
Average	**4.6**	**4.6**	**4.4**	**5.5**	**4.5**	**3.8**	**4.3**
Panel F: Oceana							
Australia	5.9<	5.8*	5.3<	5.7<	5.7*	5*	5.3*
New Zealand	6.1*	5.5<	5.5*	9.7**	4.7<	3.6<	4.2<
Average	**6.0**	**5.7**	**5.4**	**7.7**	**5.2**	**4.3**	**4.8**
Sample average	**5.0**	**4.7**	**4.5**	**5.7**	**4.6**	**4.3**	**5.0**

** Country with the highest aggregate IFRS adoption/conversion score in the sample study.
* Country with the highest IFRS adoption/conversion score per region in the sample study.
<< Country with the lowest aggregate IFRS adoption/conversion score in the sample study.
 <Country with the lowest IFRS adoption/conversion score per region in the sample study.

To obtain a better understanding of how culture and economic factors influence a country's IFRS convergence or adoption decision, we designed a system to assign convergence or adoption scores. Regression and correlation analyses were performed to examine how these variables are related. The design of the scoring system and the regression and correlation analyses are discussed in the next section.

Research Methodology

PwC's April 2012 Survey consists of several questions and answers related to the current stage of the IFRS adoption or convergence process in each country. This survey describes the adoption status of IFRS per country in relation to the rules for listed companies (RL) and the adopted version of IFRS (VI), the similarities and differences in rules for subsidiaries of foreign

companies or foreign companies listed in local exchanges (DR), the rules for statutory filings, the locally accepted version of IFRS, additional regulatory financial statement requirements that permit or require the use of IFRS, IFRS convergence plans, type of tax regime and plans for IFRS convergence as the basis of tax reporting.

The focus of this study is on the accounting standards that apply to public companies only. Four questions were excluded from the original survey because they were unrelated to the accounting standards for publicly traded companies. In order to measure the speed of the IFRS convergence or adoption process and differentiate the early adopters from the late adopters, we added a time-related dimension regarding the convergence or adoption date (AD). The relevant information is the date in which the use of IFRS for public companies began.

Based on the responses to the PwC survey questions, we designed a grading system to describe the degree of convergence or adoption of IFRS for each country. Table 4 presents the scoring system. We assigned a point value to each of the responses that fluctuated from 0 to 3 and calculated an IFRS convergence or adoption score for each country. For example, the first survey question addressed whether there was an IFRS requirement for listed companies. We assigned a value of 0 to those countries to which this requirement did not apply because the country had no local stock exchange. A value of 1 was assigned to countries that had no IFRS requirement but its use is permitted. A value of 2 was given to countries that require IFRS for listed companies but some exceptions apply. Some exceptions include: all or some financial institutions are not required to use IFRS; only financial institutions are required to use IFRS; some companies have additional reporting requirements using local standards and/or are using locally adopted IFRS. A value of 3 was assigned to countries that require IFRS for all listed companies with no exceptions.

With respect to the version of IFRS adopted by listed companies in each country, we assigned a value of 0 to those countries to which this requirement did not apply because the country had no local stock exchange. A value of 1 was assigned to countries that apply locally adopted IFRS. A value of 2 was given to countries that adopted IFRS as published by IASB and use, in some respects, locally adopted IFRS. We also assigned a value of 2 to countries that applied IFRS as published by the IASB with the exception of some financial institutions or that have additional reporting requirements using local standards and/or are using locally adopted

IFRS. A value of 3 was assigned to countries that require IFRS for all listed companies with no exceptions.

Adoption date is the third component of our score. It is used to measure the speed of IFRS convergence or adoption and to differentiate the early adopters from the late adopters. If a country had not converged or adopted IFRS, a value of 0 was assigned. A value of 1 was assigned to a country in the process of converging or adopting IFRS for public companies but not yet decided. A value of 2 was given to those countries that converged or adopted IFRS on or after 2010. Those countries that adopted IFRS before 2010 received a value of 3.

Table 4: Description of the grading system used for the answers to the PwC survey questions

	Question			
Points Assigned	IFRS requirement for listed companies (RL)	Version of IFRS for listed companies (VI)	Convergence or Adoption Date (AD)	Different Rules for subsidiaries of FC and FC listed locally (DR)
0	Not applicable	Not applicable	Not applicable	Not applicable
1	No requirement	Locally adopted IFRS	In process	Yes, or the use of other standards are <u>permitted</u>
2	Required with exceptions such as: except for some financial institutions, additional reporting using local standards, and/or using IFRS-Country's language version.	IFRS as published by IASB and as locally adopted or IFRS as published by IASB with the exception of some financial institutions	2010-2013	Yes, but reconciliations are required
3	Required	IFRS as published by IASB or IFRS Country's language version	Before 2010	No

Note: A grading system was developed in this study using the answers to the questions in õPwC Survey: IFRS Adoption by Country Surveyö as of April 2012. The values assigned to each response represent the degree of convergence or adoption of IFRS. A value of õ0ö was assigned to a response to reflect the lowest degree of IFRS convergence or adoption. The highest value assigned represents the highest degree of IFRS convergence or adoption for that country.

The last PwC Survey element included in our score system is related to the existence or absence of different rules for foreign companies and foreign companies listed locally. A value of 0 was given to those countries to which this requirement did not apply because the country had no local stock exchange. A value of 1 was assigned if different rules apply for foreign companies or if these companies were permitted to use different rules. A value of 2 was assigned to those countries in which different rules apply but reconciliation to IFRS is required. Countries in which foreign companies are subject to the same accounting rules as other

companies received a value of 3. In other words, if the country adopted IFRS for public companies, the same rules apply whether it is a local or foreign company.

After assigning and adding these values, a score was obtained by country. Table 5 shows the country's response to the selected PwC survey questions. After analyzing the responses, values are assigned to each response according to each country's degree of IFRS convergence or adoption and added to obtain a final conversion or adoption score per country.

The countries with the highest scores in the North America region are Costa Rica, Guatemala, and Jamaica. The United States has the lowest score, attributed to the fact that it has been in the process of convergence since 2002. The country with the highest score in the South America region is Venezuela and the country with the lowest score is Colombia. The countries with the highest scores in the Asia region are Lebanon, Malaysia, and Turkey. The finding related to Turkey is consistent with Yalkin, Demir and Demir (2008) who noted that the Turkish Accounting Standards Board accepted the harmonization of IFRS to obtain international acceptance for Turkey. The country with the lowest score in Asia is China.

The countries with the highest scores in the African region are Ghana, South Africa, Tanzania and Zambia, which represent 57% of the countries in the region (4 of 7). This result is inconsistent with Skotarczyk (2011) who suggests that for African and Middle Eastern countries, adoption of IFRS may be uncertain because of differences in language, regional interpretations, religion, economy, and education. The country with the lowest score is Egypt. The country with the highest score in the Oceana region is New Zealand and the country with the lowest score is Australia; although the scores for both countries are among the highest possible within our grading system.

Table 5. PwCøs Survey Answer Values and the Final IFRS Convergence or Adoption Scores by Country

Country	PwC's Survey Questions				
	IFRS requirement for listed companies	Version of IFRS	Convergence or Adoption date	Different Rules for subsidiaries of FC and FC listed locally avoidance	IFRS Convergence or Adoption Score
Panel A: North America					
Canada	2	2	2	1	7
Costa Rica	3	3	3	3	12
El Salvador	2	2	2	3	9
Guatemala	3	3	3	3	12
Jamaica	3	3	3	3	12
Mexico	2	3	2	2	9
Panama	3	2	2	3	10
United States	1	0	0	1	2
Panel : South America					
Argentina	2	3	2	3	10
Brazil	3	2	2	3	10
Chile	2	2	2	3	9
Colombia	1	0	1	0	2
Ecuador	2	3	2	3	10
Peru	2	2	2	3	9
Uruguay	2	2	2	3	9
Venezuela	3	3	2	3	11
Panel C: Asia					
China	1	0	0	0	1
Hong Kong	1	3	3	1	8
India	1	3	1	3	8
Indonesia	1	0	1	3	5
Israel	2	2	3	1	8
Japan	1	1	1	1	4
Kuwait	3	3	3	3	12
Lebanon	3	3	3	3	12
Malaysia	3	1	2	3	9
Pakistan	3	1	3	3	10
Philippines	3	1	3	1	8
Saudi Arabia	1	3	1	3	8
Singapore	2	1	1	1	5
Taiwan	1	0	2	2	5
Thailand	1	1	1	1	4
Turkey	3	3	3	3	12
Vietnam	0	0	0	0	0
Panel D: Europe					
Austria	3	1	3	3	10
Belgium	3	1	3	3	10
Bulgaria	3	1	3	3	10
Czech Republic	3	1	3	1	8
Denmark	3	1	3	1	8
Estonia	3	1	3	3	10
Finland	3	1	3	3	10
France	3	1	3	1	8
Germany	3	1	3	1	8
Greece	3	1	3	3	10
Hungary	3	1	3	3	10
Ireland	3	1	3	3	10

Italy	3	1	3	3	10
Malta	3	1	3	0	7
Netherlands	3	1	3	1	8
Norway	3	1	3	1	8
Poland	3	1	3	1	8
Portugal	3	1	3	3	10
Romania	3	1	3	3	10
Russia	3	3	2	3	11
Serbia	3	1	3	3	10
Slovakia	3	1	3	3	10
Slovenia	3	1	3	3	10
Spain	3	1	3	3	10
Sweden	3	1	3	3	10
Switzerland	1	2	3	1	7
United Kingdom	3	1	3	3	10
Panel E: Africa					
Egypt	0	0	0	0	0
Ghana	3	3	3	3	12
Morocco	2	1	3	3	9
Nigeria	3	3	1	3	10
South Africa	3	3	3	3	12
Tanzania	3	3	3	3	12
Zambia	3	3	3	3	12
Panel F: Oceana					
Australia	3	2	3	1	9
New Zealand	3	2	3	3	11

Tests

To test our research hypotheses regarding the impact of cultural and economic factors on the IFRS convergence or adoption decision in each country we used three regression models. The first model considered Hofstede's cultural dimensions as the possible determinants of a country's IFRS convergence or adoption score. The regression model is as follows:

$$Score_i = \alpha_i + b_i IC + h_i PD + s_i MF + c_i UA + \varepsilon_i \qquad (1)$$

where $Score_i$ represents the degree of IFRS convergence or adoption, IC represents the value of a country's Individualism/Collectivism dimension, PD is the value of a country's Power Distance value, MF represents the value of a country's Masculinity/Femininity dimension, and UA is the value of a country's Uncertainty Avoidance dimension.

Our second regression model was used to test our five research hypotheses regarding the impact of economic factors on a country's IFRS convergence or adoption decision. The regression model is as follows:

$$Score_i = \alpha_i + n_i SA + l_i EC + k_i PM + p_i SI + t_i RS + g_i FT + v_i DM + z_i FM + \varepsilon_i \qquad (2)$$

where $Score_i$ represents the degree of IFRS convergence or adoption, SA represents strength of auditing and reporting standards, EC means efficacy of corporate boards, PM represents

protection of minority shareholders' interests, *SI* represents a system's strength of investors protection, *RS* is related to regulation of securities exchanges, *DM* is related do the size of the domestic market and *FM* to the foreign market size.

A third regression model was used to examine whether a country's cultural dimensions and its economic factors, when taken together, explain better the convergence or adoption scores assigned to our countries in our study sample. The third regression model is as follows:

$$Score_i = \alpha_i + b_i IC + h_i PD + s_i MF + c_i UA + n_i SA + l_i EC + k_i PM + p_i SI + t_i RS + g_i FT + v_i DM + z_i FM + \varepsilon_i \quad (3)$$

The variables are defined in the same manner as previously explained.

The following section presents and discusses the tests results. Initially we discuss the results of the regression analyses and their possible interpretations, followed by the Pearson (Spearman) correlations between the variables and the related explanations.

Empirical results

Regression and Correlation Analyses

We tested our hypotheses using regression analyses and three different models. The first regression model uses Hofstede's cultural dimensions as dependent variables of the convergence or adoption score. Table 6 presents the results obtained, which suggest that none of the cultural dimensions appear to have a significant impact on a country's IFRS convergence or adoption decision. As predicted, MF has an inverse but not a significant relation with the dependent variable. The low explanatory power of the adjusted R^2 of this model suggests that a country's cultural dimensions do not help to explain its convergence or adoption decision.

Table 6. Regression Analysis Results for Model 1: Hofstede's Cultural Dimensions and their Relationship with the Convergence or Adoption of IFRS by Country

$$Rank_i = \alpha_i + b_i IC + h_i PD + s_i MF + c_i UA + \varepsilon_i \quad (1)$$

			Regression analysis results		
	Alpha	**Individualism/ Collectivism (IC)**	**Power Distance (PD)**	**Masculinity/ Femininity (MF)**	**Uncertainty Avoidance (UA)**
Coefficient	6.358	0.019	0.011	-0.015	0.025
p-value	0.006	0.357	0.632	0.430	0.106
Adj. R^2	-0.003				

Table 7 summarizes the results using our second regression model. Results suggest that two of the economic variables have significant explanatory power. *PM* and *FM* are negatively related and statistically significant. This implies that, the lower the score related to the protection of minority shareholders' interests, the higher the probability of convergence or adoption of IFRS, and vice versa. As to *FM*, the smaller the foreign market size, the higher the probability of convergence or adoption of IFRS, and vice versa. These results partially support our hypothesis that economic factors are inversely related to the probability of convergence or adoption. Both variables seem to have a significant impact on a country's IFRS convergence or adoption decision. The explanatory power of the model as explained by the adjusted R^2 is higher than for the first model.

.

Table 7. Regression Analysis Results for Model 2: Economic Factors and their Relationship with the Convergence or Adoption of IFRS by Country

$$Score_i = α_i + n_i SA + l_i EC + k_i PM + p_i SI + t_i RS + g_i FT + v_i DM + z_i FM + ε_i \qquad (2)$$

		Economic Factors						
	Alpha	**Strength of auditing and reporting standards**	**Efficacy of corporate boards**	**Protection of minority shareholders' interests**	**Strength of investor protection**	**Regulation of securities exchanges**	**Domestic market size index**	**Foreign market size index**
Coefficient	14.467	1.655	0.789	-2.945	0.158	0.644	-0.012	-1.669
p-value	0.000	0.108	0.467	0.004*	0.425	0.372	0.987	0.047*
Adj. R^2	0.254							

* p-value significant at the 0.05 level; ** p-value significant at the 0.10 level.

Table 8 presents the relationship between Hofstede's cultural dimensions, economic factors and the IFRS adoption or convergence scores. The results show a positive significant relation between the IC cultural dimension and the IFRS adoption or convergence score (significant at the 0.05 level). These results do not support our prediction that highly individualistic countries will have lower convergence or adoption scores. The results also suggest a significant negative relation of PM and FM with the IFRS adoption or convergence score (significant at the .05 level). These results support our hypothesis that higher values for economic factors are inversely related to IFRS convergence or adoption scores. The explanatory power of the model, as explained by the adjusted R^2, is higher than for the previous two models.

Table 8. Regression Analysis Results for Model 3: Hofstede's Cultural Dimensions, Economic Factors, and their Relationship with the Convergence or Adoption of IFRS by Country

$$Score_i = \alpha_i + b_i IC + h_i PD + s_i MF + c_i UA + n_i SA + l_i EC + k_i PM + p_i SI + t_i RS + g_i FT + v_i DM + z_i FM + \varepsilon_i \qquad (3)$$

		Hofstede's Cultural Dimensions					Economic Factors				
	Alpha	IC	PD	MF	UA	SA	EC	PM	SI	RS	DM	FM
Coefficient	13.238	0.041	0.016	-0.006	0.015	0.615	1.05	-2.512	0.235	0.715	-0.392	-0.536
p-value	0.003	0.041*	0.422	0.748	0.339	0.594	0.349	0.019*	0.248	0.334	0.606	0.083**
Adj. R^2	0.27											

*p-value significant at the 0.05 level;   **p-value significant at the 0.10 level.

The countries included in the European region adopted or converged to IFRS almost at the same time and at the same level, based on the IFRS adoption or convergence score. Most of these countries adopted IFRS as part of the association agreements of the European Union. Since these countries represent almost 40 percent of the sample, we ran a regression analysis excluding the European countries as a robustness test. Table 9 presents the results for this regression that reflects a positive significant relation between the IC dimension and the IFRS adoption or convergence score (significant at the 0.10 level). The results also suggest a significant negative relation of PM and a positive relation of SA and RS with the IFRS adoption or convergence score (significant at the .05 level). The results for IC and PM concur with our findings of the regression for the whole sample. The explanatory power of the model, as explained by the adjusted R^2, is higher than for the previous models.

Table 9. Regression Analysis Results for Model 3: Hofstede's Cultural Dimensions, Economic Factors and their Relationship with the Convergence or Adoption of IFRS by Country

$$Score_i = \alpha_i + b_i IC + h_i PD + s_i MF + c_i UA + n_i SA + l_i EC + k_i PM + p_i SI + t_i RS + g_i FT + v_i DM + z_i FM + \varepsilon_i \qquad (3)$$

		Hofstede's Cultural Dimensions					Economic Factors				
	Alpha	IC	PD	MF	UA	SA	EC	PM	SI	RS	DM	FM
Coefficient	13.180	0.055	0.044	-0.020	0.019	3.053	0.586	-5.485	0.096	1.947	-0.850	-1.777
p-value	0.016	0.069**	0.118	0.561	0.360	0.046*	0.698	0.002*	0.764	0.028*	0.497	0.199
Adj. R^2	0.535											

*p-value significant at the 0.05 level;   **p-value significant at the 0.10 level.

Pearson (Spearman) correlations between the ranked variables and Hofstede's four cultural dimensions for our study sample are shown below (above) the diagonal in Table 10. Some of the variables seem to be correlated. We performed multicollinearity tests and the results obtained from the variance inflation factors do not suggest significant multicollinearity problems.

Table 10. Pearson (Spearman) Correlation Matrix for our study sample

Variables	RL	VI	AD	DR	SCORE	IC	PD	MF	UA	SA	EC	PM	SI	RS	DM	FM
						Pearson (Spearman) Correlation Results										
RL		0.129	0.739**	0.416**	0.699**	0.295*	-0.066	-0.113	0.124	0.053	-0.072	-0.109	-0.148	-0.011	-0.298*	-0.311**
		(0.292)	(0.000)	(0.000)	(0.000)	(0.014)	(0.588)	(0.356)	(0.311)	(0.666)	(0.558)	(0.373)	(0.225)	(0.929)	(0.013)	(0.009)
VI	0.215		0.072	0.443**	0.580**	-0.149	0.156	0.003	0.066	-0.103	-0.071	-0.191	-0.077	-0.079	-0.233	-0.289*
	(0.077)		(0.555)	(0.000)	(0.000)	(0.223)	(0.199)	(0.978)	(0589)	(0.400)	(0.563)	(0.115)	(0.531)	(0.520)	(0.054)	(0.016)
AD	0.785**	0.199		0.235	0524**	0.375**	-0.314**	-0.084	0.070	0.205	0.063	0.043	-0.118	0.158	-0.380**	-0.329**
	(0.000)	(0.101)		(0.052)	(0.000)	(0.001)	(0.009)	(0.491)	(0.566)	(0.091)	(0.608)	(0.726)	(0.332)	(0.196)	(0.001)	(0.006)
DR	0.452**	0.458**	0.363**		0.801**	-0.141	0.158	-0.110	0.214	-0289*	-0.255*	-0.306*	-0.070	-0.293*	-0.326**	-0.399**
	(0.000)	(0.000)	(0.002)		(0.000)	(0.247)	(0.196)	(0.370)	(0.078)	(0.016)	(0.034)	(0.011)	(0.566)	(0.015)	(0.006)	(0.001)
SCORE	0.801**	0.642**	0.763**	0.782**		-0.045	0.090	-0.094	0.166	-0.240	-0.270*	-0.341**	-0.160	-0.259*	-0.426**	-0.503**
	(0.000)	(0.000)	(0.000)	(0.000)		(0.712)	(0.460)	(0.445)	(0.172)	(0.047)	(0.025)	(0.004)	(0.189)	(0.032)	(0.000)	(0.000)
IC	0.249*	-0.196	0.288*	-0.165	0.040		-0.645**	0.205	-0.224	0.524**	0.377**	0.421**	0.174	0.479**	0.269*	0.346**
	(0.039)	(0.107)	(0.016)	(0.175)	(0.742)		(0.000)	(0.091)	(0.064)	(0.000)	(0.001)	(0.000)	(0.154)	(0.000)	(0.026)	(0.004)
PD	-0.073	0.163	-0.255*	0.165	0.013	-0.663**		0.001	0.222	0.524**	-0.447**	-0.525**	-0.155	-0.417**	-0.075	-0.079
	(0.549)	(0.182)	(0.034)	(0.175)	(0.914)	(0.000)		(0.995)	(0.067)	(0.000)	(0.000)	(0.000)	(0.202)	(0.000)	(0.541)	(0.519)
MF	-0.119	0.020	-0.119	-0.040	-0.083	0.131	0.117		-0.190	-0.029	0.000	-0.063	-0.048	0.066	0.332**	0.307*
	(0.331)	(0.870)	(0.329)	(0.746)	(0.500)	(0.283)	(0.339)		(0.118)	(0.815)	(0.999)	(0.610)	(0.698)	(0.593)	(0.005)	(0.010)
UA	0.147	0.055	0.152	0.217	0.193	-0.242	0.233	-0.056		-0.275*	-0.409**	-0.363**	-0.274*	-0.382**	-0.108	-0.264*
	(0.229)	(0.654)	(0.213)	(0.73)	(0.112)	(0.045)	(0.054)	(0.651)		(0.022)	(0.000)	(0.002)	(0.023)	(0.001)	(0.379)	(0.028)
SA	0.105	-0.112	0.234	-0.238*	-0.020	0.549**	-0.506**	-0.103	-0.299*		0.807**	0.862**	0.403**	0.788*	0.077	0.249*
	(0.392)	(0.361)	(0.053)	(0.049)	(0.874)	(0.000)	(0.000)	(0.400)	(0.012)		(0.000)	(0.000)	(0.001)	(0.000)	(0.529)	(0.039)
EC	0.000	-0.084	0.076	-0.220	-0.086	0.470**	-0.449**	-0.085	-0.433**	0.820**		0.807**	0.338**	0.677**	0.140	0.271*
	(0.998)	(0.495)	(0.534)	(0.070)	(0.484)	(0.000)	(0.000)	(0.487)	(0.000)	(0.000)		(0.000)	(0.005)	(0.000)	(0.251)	(0.024)
PM	-0.085	-0.195	0.028	-0.278*	-0.187	0.468**	-0.515**	-0.162	-0.407**	0.867**	0.835**		0.418**	0.760**	0.142	0.259*
	(0.490)	(0.108)	(0.822)	(0.021)	(0.124)	(0.000)	(0.000)	(0.183)	(0.001)	(0.000)	(0.000)		(0.000)	(0.000)	(0.244)	(0.031)
SI	-0.116	-0.059	-0.130	-0.020	-0.105	0.189	-0.147	-0.021	-0.336**	0.370**	0.374**	0.390**		0.316**	0.208	0.297*
	(0.341)	(0.627)	(0.288)	(0.869)	(0.390)	(0.120)	(0.229)	(0.865)	(0.005)	(0.002)	(0.002)	(0.001)		(0.008)	(0.086)	(0.013)
RS	-0.006	-0.071	0.125	-0.265*	-0.085	0.487**	-0.405**	-0.060	-0.397**	0.803**	0.707**	0.786**	0.285*		0.213	0.333**
	(0.961)	(0.561)	(0.305)	(0.028)	(0.489)	(0.000)	(0.001)	(0.626)	(0.001)	(0.000)	(0.000)	(0.000)	(0.018)		(0.079)	(0.005)
DM	-0.351**	-0.249*	-0.442**	-0.298*	-0.444**	0.289*	-0.064	0.268*	-0.092	0.046	0.158	0.124	0.269*	0.179		0.859**
	(0.003)	(0.039)	(0.000)	(0.013)	(0.000)	(0.016)	(0.602)	(0.026)	(0.452)	(0.709)	(0.196)	(0.309)	(0.025)	(0.142)		(0.000)
FM	-0.343**	-0.322**	-0.377**	-0.370**	-0.473**	0.337**	-0.065	0.248*	0.236	0.201	0.251*	0.234	0.349**	0.300*	0.889**	
	(0.004)	(0.007)	(0.001)	(0.002)	(0.000)	(0.005)	0.597	(0.040)	(0.051)	(0.098)	(0.037)	(0.053)	(0.003)	(0.012)	(0.000)	

Pearson correlations are below the diagonal; Spearman correlations are above the diagonal. *** Significant at the 0.01 level;
** Significant at the 0.05 level; * Significant at the 0.10 level. Variable definitions are as follows: $Score_i$ represents the degree of IFRS convergence or adoption as measured by the ranked score, IC represents the Individualism/Collectivism dimension score, *PD* is the Power Distance dimension score, *MF* represents the Masculinity/Femininity dimension index, and *UA* is the Uncertainty Avoidance dimension score.

Conclusions

Prior research (Ding et al., 2005; Hope et al., 2006; Clements et al., 2010 and Skotarczyk, 2011, among others) suggests that differences in culture, country size, economic and political factors may influence the adoption and subsequent successful implementation of IFRS. Ramanna and Sletten (2009) and Skotarczyk (2011) observe that language, economic, geographical, and political characteristics and common trade agreements influence a country's IFRS convergence or adoption decision. Hope et al. (2006) also note that other economic factors, such as the existence of investor protection mechanisms and the unlimited access to capital markets, may also have an impact on a country's convergence or adoption IFRS decision.

Initially we find that none of the cultural dimensions seem to have a significant impact on a country's IFRS convergence or adoption decision. Our second model considers the effect of certain economic factors on a country's IFRS convergence or adoption decision. The results obtained suggest that countries with better protection of minority shareholders' interests and a larger foreign market size are less inclined to converge or adopt IFRS. These results partially support our research hypothesis that economic factors are inversely related to the possibility of convergence or adoption of IFRS.

Our third model includes Hofstede's cultural dimensions, economic factors and the IFRS adoption or convergence scores by country. The results suggest that countries that tend to be more individualistic are more inclined to converge to or adopt IFRS. These results do not support our expectation that highly individualistic countries will have lower convergence or adoption scores. With respect to economic factors, the evidence obtained suggests that countries with better protection of minority shareholders' interests and a larger foreign market size are less inclined to converge or adopt IFRS. These results support our hypothesis that higher values for economic factors are inversely related to a country's IFRS convergence or adoption score.

The expected benefits from the use of alternative empirical methodology in estimating how countries adopt or converge to IFRS may assist standard setters and researchers develop mechanisms to facilitate this process and should outweigh the aforementioned limitations. The decision to converge or adopt IFRS is also expected to have an indirect impact on the required disclosure of financial information by listed companies in each country.

This study has several limitations. First, the grading system used in our study to construct an IFRS convergence or adoption score represents a researcher induced bias. A second limitation is that the impact of culture was measured using only four of the six cultural dimensions developed by Hofstede because the values for the fifth and sixth cultural dimensions (long-term versus short-term orientation and indulgence versus restraint, respectively) are not available for the countries in our study sample. In addition, the selection of the proxies used in our study as economic factors (strength of auditing and reporting standards, efficacy of corporate boards, protection of minority shareholdersø interestsø strength of investor protection, regulation of securities exchanges, and market size) is another element of researcher induced bias. Future research should consider other methodologies that can measure the extent to which countries have converged or adopted IFRS to improve or corroborate the findings from our study.

References

Accounting Today Staff, (2010). IFRS ó Convergence or adoption? Web CPA: Tools and resources for the electronic accountant. Retrieved January 27, 2012, from http://accountingtoday.com/news/IFRS-Convergence-Adoption-55554-1.html

Armstrong, C., M.E. Barth, A. Jagolinzer, and E.J. Riedl. (2010). Market reaction to the adoption of IFRS in Europe. *The Accounting Review*, 85: 31-61.

Bova, F. and Pereira, R. (2012). The Determinants and Consequences of Heterogeneous IFRS Compliance Levels Following Mandatory IFRS Adoption: Evidence from a Developing Country. *Journal of International Accounting Research*, 11(1): 83-111.

Callao-Gastón, S., Ferrer-García, C., Jarne-Jarne, J.I. & Laínez-Gadea, J.A. (2010). IFRS adoption in Spain and the United Kingdom: Effects on accounting numbers and relevance. [Electronic version]. *Advances in Accounting, Incorporating Advances in International Accounting*, 26, 304-313.

Callao-Gastón, S., Jarne-Jarne, J.I. & Laínez-Gadea, J.A. (2007). Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting. [Electronic version]. *Journal of International Accounting, Auditing and Taxation*, 16, 148-178.

Campbell, D.R., Doupnik, T.S & Tsakumis, G.T. (2009). IFRS: Beyond the Standards. [Electronic version]. *Journal of Accountancy*, February, 34-39.

Chan, K. Lin, K. & Lai Lan Mo, P. (2003). An Empirical Study on the Impact of Culture on Audit-Detected Accounting Errors. *Auditing: A Journal of Practice and Theory*, 22 (2), September, 281-295.

Clements, C.E., Neil, J.D. & Stovall, S.O., (2010), Cultural Diversity, Country Size, And The IFRS Adoption Decision. [Electronic version]. *The Journal of Applied Business Research*, 26, 2, March/April, 115-126.

Ding, Y., Jeanjean, T. & Stolowy, H. (2005). Why do national GAAP differ from IAS? The role of culture. [Electronic version]. *The International Journal of Accounting*, 40, 325-350.

Ding, Y., Jeanjean, T. & Stolowy, H. (2005). Reply to discussion of ỡWhy do national GAAP differ from IAS? The role of culture. [Electronic version]. *The International Journal of Accounting*, 40, 359-362.

Doupnik, T & Perera, H. (2012). *International Accounting* (3rd Ed.) New York; McGraw-Hill/Irwin.

Forgeas, R. (2008). Is IFRS That Different from U.S. GAAP? [Electronic version]. *CPA Insider,* June 16. Retrieved July 9, 2013, from http://www.ifrs.com/overview/General/differences.html

Gorgan, C., Gorgan, V., Dumitru, V. & Guinea, F.A. (2011). Adopting the International Financial Reporting Standards at European level: Difficulties and Consequences. Annals. Economic Science (Anale. Seria Stiinte Economice), Issue XVII/ 2011, 753-760. Retrieved January 27, 2012, from http://fse.tibiscus.ro/anale/Lucrari2011/118.pdf.

Gray, S. (1988). Towards a theory of cultural influence on the development of accounting systems internationally. [Electronic version]. *Abacus*, 24, 1, 1-15.

Hofstede, G. (1980). Cultureøs consequences, international differences in work-related values. Beverly Hills, CA; Sage Publications.

Hofstede, G. (1983 A). The cultural relativity of organizational practices and theories. [Electronic version]. *Journal of International Business Studies,* 14 (2), Autumn, 75-89.

Hofstede, G. (1983 B). National cultures in four dimensions. [Electronic version]. *International Studies of Management & Organizations*, 13(1-2), 45-74.

Hofstede, G. (2001). *Culture's Consequences (2nd ed.)*. Thousand Oaks, CA; Sage Publications.

Hofstede, G., Hofstede G.J. & Minkov M. (2010). Cultures and Organizations: Software of the Mind. 3rd Edition, McGraw-Hill USA.

Hope, O.K., Jin, J. & Kang, T. (2006). Empirical evidence on jurisdictions that adopt IFRS. *Journal of International Accounting Research*, 5(2): 1-20.

Horton, J., Serafeim, G. & Serafeim, I. (2010). Does Mandatory IFRS Adoption Improve the Information Environment? (Working Paper). Retrieved January 27, 2012, from http://ssrn.com/abstract=1264101.

Kroeber, A.L & Kluckhohn, C. (1952). Culture: A critical review of concepts and definitions. [Electronic version]. *Papers of Peaboy Museum of American Archeology*, 47, 1, 223.

Lamoreaux, M.G. (2011). IFRS: Beyond Convergence. Electronic version]. *Journal of Accountancy*, August, 46-51.

Liu, J. & Mackinnon, A. (2002). Comparative management practices and training: China and Europe. [Electronic version]. *The Journal of Management Development*, 21, 2, 118-132.

Pricewaterhouse Coopers, LLP, (2012), *IFRS Adoption by Country*, Retrieved June 18, 2013, from http://www.pwc.com/en_US/us/issues/ifrs-reporting/publications/assets/pwc-ifrs-by-country-apr-2012.pdf

Ramanna, K. & Sletten, E. (2009). Why Do Countries Adopt International Financial Reporting Standards? (Working Paper 09-012). Retrieved January 27, 2012, from http://www.hbs.edu/faculty/Publication%20Files/09-102.pdf

Schipper, K. (2005). The introduction of International Accounting Standards in Europe: Implications for international convergence. *European Accounting Review*, 14:1, 101-126, DOI: 10.1080/0963818042000338013

Skotarczyk, M. A., (2011), The Effect of Culture on the Implementation of International Financial Reporting Standards. CMC Senior Theses, Paper 165. Retrieved January 27, 2012, from http://scholarship.claremont.edu/cmc_theses/165.

World Economic Forum (2011). *The Global Competitiveness Report 2011-2012*. Retrieved on September 7, 2012, from http://www.weforum.org/reports

Yalkin, Y.K., Demir, V. & Demir, L.D., (2008), International Financial Reporting Standards (IFRS) and the development of Financial Reporting Standards in Turkey. [Electronic version]. *Research in Accounting Regulation*, 20, 279-294.

Appendix A

PwC Survey Title: *IFRS Adoption by Country*

PwC Survey Questions*:*

Rules for listed filings

1. IFRS required or permitted for listed companies?

2. Version of IFRS

3. Are subsidiaries of foreign companies or foreign companies listed on local exchanges subject to different rules?

Rules for Statutory filings

4. Is IFRS or IFRS for SMEs required, permitted or prohibited for statutory filings?

5. Version of IFRS

6. In addition to local GAAP statutory financial statements, are there other regulatory financial statement requirements that permit or require the use of IFRS?[1]

IFRS conversion plans

7. Plans for converging.

Tax information

8. Type of tax regime[1]

9. Plans for IFRS converging as the basis of tax reporting.

---

[1] We excluded two questions from the survey. Question 6 is related to additional regulatory financial statement requirements that permit or require the use of IFRS. This question does not provide any new information that is not otherwise included in the other survey questions. Question 8 refers to the type of tax regime in each country. This question was excluded because it refers to differences between books to taxable income, and not necessarily related to IFRS adoption.