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The role of institutional isomorphism in explaining the voluntary IFRS adoption

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ABSTRACT

Since 2005, International Financial Reporting Standards (IFRS) have been widely used on a mandatory basis worldwide, but some countries are relevant exceptions to this policy. Based on the institutional isomorphism framework, this study examines the reasons why listed companies voluntarily adopt IFRS in a very specific environment: Japan. Using financial and non-financial data, we conduct a comprehensive investigation of the determinants of IFRS adoption. We use a multi-period logit model that takes into account all annual decisions made during the period 2013-2018. We confirm that both coercive and normative isomorphism associated with some legislative changes, together with mimetic isomorphism embedded in Japanese culture, lead firms to adopt IFRS rather than Japanese General Accepted Accounting Principles (J-GAAP). These findings suggest that the legitimacy of IFRS makes this set of standards a more appropriate reporting system to deal with the uncertainty associated with the country's openness to the outside world.

El papel del isomorfismo institucional para explicar la adopción voluntaria de las NIIF

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RESUMEN

Desde 2005, las Normas Internacionales de Información Financiera (NIIF) se utilizan con carácter obligatorio en gran parte del mundo, pero algunos países constituyen excepciones relevantes a esta política. Basándose en el marco del isomorfismo institucional, este estudio investiga las razones que explican por qué las empresas que cotizan en bolsa adoptan voluntariamente las NIIF en un entorno muy particular: Japón. Utilizando datos financieros y no financieros, llevamos a cabo una investigación exhaustiva de los factores determinantes de los adoptantes. Empleamos un modelo logit multiperiodo que considera todas las decisiones anuales tomadas durante el periodo 2013-2018. Confirmamos que el isomorfismo coercitivo, así como el normativo, asociado con algunos cambios legislativos, junto con el isomorfismo mimético, arraigado en la cultura japonesa, hacen que las empresas adopten las NIIF en lugar de los Principios de Contabilidad Generalmente Aceptados en Japón (J-GAAP). Estos resultados sugieren que la legitimidad de las NIIF hace de este conjunto de normas un sistema de información más adecuado para hacer frente a la incertidumbre relacionada con la apertura del país al exterior.

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1. Introduction

Corporate financial reporting is one of the most relevant sources of information about an economic entity. To make information more useful for external users, it has to be comparable, which explains the development of accounting standards both locally and internationally. Currently, the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB) are generally accepted worldwide, and firms use them on a mandatory or voluntary basis. This paper examines this latter decision in Japan, which is a very special setting[1].

The decision to adopt a set of accounting standards forms part of a company's strategy to communicate with the outside world. Following the institutional theory, which states that organizations influence, and are influenced by, the society in which they act (Meyer & Rowan, 1977; DiMaggio & Powell, 1983), we argue that the fact that organizations tend to be rather homogeneous in structure and culture can lead them to adopt IFRS. Institutional isomorphism, which stems from the state, the profession, and even from other organizations, has been introduced as a concept that helps to understand why organizations change to more resemble their peers (Doadrio et al., 2015). One of the major cultural characteristics of Japan is its strong emphasis on similarity, and previous literature suggests that isomorphism might also explain corporate behavior (Lu, 2002; Aizawa, 2018). Thus, we apply the institutional isomorphism notion to examine the reasons why Japanese listed firms decide between two different reporting alternatives: Japanese Generally Accepted Accounting Principles (J-GAAP) and IFRS, taking into account that the communication channel not only alters how information is externally communicated, but may also alter how it is used for internal purposes.

Nowadays, major economies require firms to use IFRS, albeit with a few relevant exceptions, namely the United States of America (USA), China, Japan, and India, which have adopted different strategies. In the USA, foreign firms can employ IFRS, but local firms cannot. In China and India, local standards have converged with IFRS, but differences remain. In Japan, since 2013 almost all firms, even unlisted ones, can use IFRS for their consolidated financial statements. Nonetheless back in 2010, these standards were allowed, but only by listed firms with international operations. This scenario allows us to investigate firms' incentives to present financial statements according to IFRS instead of local standards by comparing adopters and non-adopters during the same period. Hence this study contemplates voluntary adopters of IFRS, whereas most previous studies have considered adopters of International Accounting Standards (IAS) issued by the International Accounting Standards Committee (IASC) or early adopters of IFRS in the EU. The study of the adoption in Japan is rather different because the permission to allow local companies to use IFRS as an alternative to J-GAAP was made once IFRS had been accepted worldwide, which allows us to consider the influence of isomorphic pressures focused on the legislative changes that conveyed normative and mimetic forces to emerge.

The accounting literature on the voluntary adoption of international standards goes back to the late 1990s before the IASB was even founded. Its predecessor, the IASC, lacked the formal authority that characterizes the IASB, and which has conferred IFRS global legitimacy, which was not the case with IAS (Chua & Taylor, 2008). Quite differently from the current IFRS, IAS allowed several options to register and measure some economic transactions and, consequently, firms did not normally have to change their practices when using the new set of standards. Therefore, the disclosure of more information than in the domestic regime was probably the biggest stumbling block for the firms that adopted IAS[2]. Besides, it should be noted that firms had to use their local standards for regulatory purposes. As for those EU studies that analyze the early adoption of IFRS[3], this is before being compulsory in 2005, incentives were rather different from those of Japanese firms because they knew they had to use them anyway. Hence most of the early studies analyze the decision at the firm level considering economic reasons and are aligned with signaling and reducing political costs (Morris, 1987; Watts & Zimmerman, 1986). These arguments suggest that larger, more profitable firms, with more financing needs and growth opportunities, and with international operations and dispersed ownership, are more likely to adopt a more transparent reporting system. This is precisely what the vast amount of literature has found[4].

The adoption of non-local standards has also been examined from the institutional theory perspective. As DiMaggio & Powell (1983) state, institutional isomorphic changes can operate through several mechanisms deriving from different conditions that are not always empirically distinct: coercive, mimetic, and normative. Coercive isomorphism is due to formal and informal pressures, including the drive to adhere to societal expectations, exerted by organizations that have some sort of authority over the affected entities. Imitation plays an important role when there is uncertainty, or when social actors create "obligatory actions" and make others do things as they do (March, 1981); so mimetic isomorphism becomes an important driver of institutional changes. Besides, normative isomorphism primarily stems from professionalization and makes members of a profession change due to the coercive and mimetic pressures that also affect organizations. This framework has been used to explain the adoption of high-quality standards around the globe (Benito & Brusca, 2004; Touron, 2005; Judge et al., 2010; Alon & Dwyer, 2014), but has not been envisaged to consider firm-level decisions. In the new scenario, in which the IASB is perceived as an official standard-setting body, we consider that the isomorphic lens might be useful for understanding the reasons why Japanese listed firms use IFRS instead of local J-GAAP.

Japan is the world's third-largest economy with approximately 3800 listed companies and is a very traditional country[5]. Large cross-shareholdings and intertwined relationships between banks and affiliated groups have been common, and still are to some extent (Sakawa & Watanabel, 2020). This financially self-contained business dynamics transmits a culture of secrecy in financial reporting that contrasts with the IFRS orientation towards transparency. To fa-

[1] 146 jurisdictions require IFRS accounting standards for all or most domestic publicly accountable entities (listed companies and financial institutions) in their capital markets. However, there are jurisdictions other than Japan that permit, rather than require IFRS, such as Belize, Bermuda, Cayman Islands, Guatemala, Honduras, Madagascar, Nicaragua, Panama, Paraguay, Suriname, Switzerland and Timor-Leste (https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/).

[2] The IFRS issued by the IASB have reduced the alternative accounting treatments that existed in IAS, and when more than one option exists (i.e. the measurement of financial instruments in IFRS 9), firms' decisions should be principles-based. As for disclosure, it has increased due to the complexity of many transactions (i.e., goodwill impairment in IAS 36).

[3] The adoption of international accounting standards in the EU was imposed by Regulation 1606/2002.

[4] For a detailed review of the net benefits of disclosure and reporting, see Leuz & Wysocki (2016).

[5] See details at: https://www.jpx.co.jp/english/listing/co/index.html.

cilitate the entry of capital flows into the country, significant regulatory reforms in finance and accounting were undertaken in the late 1990s (Shiba, 2003; Hiramatsu & Shiba, 2004; Suda, 2011), and we argue that allowing the use of IFRS, may be seen as an additional instrument to fulfill the governmental objective. In other words, through some coercive actions, Japanese authorities have attempted to open the country and facilitate the entrance of new foreign funding, which has led to authorizing IFRS adoption (Alon & Dwyer, 2014). Yet it should be noted that, compared to other jurisdictions, the process of introducing IFRS as an alternative to local standards has not been linear and has taken many years. Consequently, normative and mimetic forces could have played an important role and made companies gradually behave more in line with legitimate international standards (Suchman, 1995). That said, the "logic of resistance" could be an obstacle to implement the new standards (Maroun & van Zijl, 2016).

Using a multiperiod logit regression model, we consider each annual decision made by Japanese listed firms that were allowed to use IFRS during the 2013-2018 period. Our results confirm the role of various mechanisms through which institutional isomorphic forces occur and make firms change their financial reporting strategy. We, thus, confirm that entrance into "*JPX- Nikkei Index 400*", which might be seen as a mechanism of coercive isomorphism, favored IFRS adoption. Besides, implementing a strong corporate governance system (the new nominating committee) allows to appreciate how the normative isomorphism inherent to the more professional body influences the adoption of the new standards. We also observe a contagious effect that comes from the industry leader and confirms how mimetic isomorphism plays a key role, which we argue quite well fits the Japanese culture (Asaba, 1997). In this case, however, given that most leaders do not use IFRS, this has not been the option adopted by followers. Mimetic behavior is not limited to following the leader, but the openness to the western world via financing and developing business through subsidiaries are also mimetic forces that have aimed Japanese firms to use the language chosen worldwide. In short, the legitimacy of IFRS makes this set of standards a more suitable reporting system to deal with the uncertainty related to the country's openness to the outside world. Consistently with previous studies, we also find that Japanese adopters are larger and younger than those firms that prefer using J-GAAP.

This study contributes to the literature in several ways. First, it provides a coherent framework based on the institutional theory to explain firms' attitudes toward IFRS, whereas this framework has only been used to explain countries' decisions to date. Second, it helps to understand firms' attitudes toward a set of high-quality accounting standards, IFRS, which differ from the earlier more tolerant IAS and, which thanks, among other things, to the legitimacy gained by the support of the EU, have been accepted as "the" common language worldwide. The adoption of the foreign language to communicate with their various stakeholders at home and abroad can be seen as a transparency exercise that deviates from traditional Japanese behavior. Thus, we cannot ignore the attitudes of some firms that follow the "logic of resistance" and prefer to maintain the old standards. This knowledge can assist Japanese regulators to continue advancing their policies toward using IFRS as a way to promote Japanese firms' internationalization; thus, they could introduce some other mechanisms, probably linked with sectorial measures, to address those leaders that remain attached to J-GAAP to change their attitudes toward IFRS. It may also be of interest to other regulators when it comes to making similar decisions. Indeed, requiring the adoption of accounting standards without considering firms' incentives might lead to increased non-GAAP reporting and/or lesser improved financial performance reporting (Christensen et al., 2015; Nobes & Zeff, 2016), which implies institutional failure. From the academic perspective, we highlight how the use of the institutional theory followed in this research offers a useful framework for understanding firms' decisions. This new lens may be used by researchers to examine other aspects. In particular, the lessons learned about countries' processes for adopting IFRS and companies' motivations for doing so voluntarily can also be useful for understanding the decisions on the adoption of sustainability reporting standards.

The remainder of the paper is organized as follows. Section 2 describes the Japanese institutional framework as a means of understanding how institutions have promoted the use of IFRS. Section 3 reviews the previous literature on the voluntary adoption of high-quality accounting standards and sets the hypotheses under study. Section 4 contains the research design and describes the sample. Section 5 presents the results. Finally, Section 6 concludes.

2. Institutional framework

Over the past 30 years, some coercive and normative isomorphic changes have taken place in Japan that might help us to understand why firms are adopting IFRS. A series of political reforms pushed firms to make that decision, which we believe to be coercive isomorphic pressures and, simultaneously, the profession also took some steps in that direction, which is a form of normative isomorphism[6].

Before the 1990s ended, Japanese accounting practices were not only significantly affected by the Commercial Code but were also tax-driven (Radebaugh et al., 2006; Nobes & Parker, 2008). The Japanese business system was characterized by bank-loan financing, large cross-shareholdings between business companies and financial institutions, business activities with affiliated group companies (*keiretsu*) and a lifetime employment guarantee. Briefly, the system was "closed" as far as capital structure and financial reporting were concerned. However, several governmental measures have been introduced to open it.

A major regulatory accounting reform was undertaken to restore the deteriorating international credibility of J-GAAP, caused by a series of high-profile accounting scandals; standards were revised and new ones based on IAS and US practices were introduced as they were perceived as high-quality standards (Suda, 2011). Furthermore in 2005, the Accounting Standard Board of Japan (ASBJ) and the IASB launched a joint project to converge their respective standards. In 2008, J-GAAP were recognized as equivalent to IFRS, and Japanese firms were allowed to file their financial statements in accordance with J-GAAP in the EU. However, given the continuous development of IFRS, the ASBJ continues to work to maintain convergence. Nevertheless, some accounting differences remain, such as those related to goodwill and research and development (R&D)[7]. Consequently, the J-GAAP firms that

[6] Van der Stede (2003) uses the isomorphism notion to explain how management control systems tend to be uniformly implemented within firms, rather than reflecting business-unit conditions. He highlights two early studies about Japan which suggest that convergence with other organizational structures is country dependent.

[7] Although there are not many differences between J-GAAP and IFRS after the convergence process, some remain and, as a result, J-GAAP are more conservative than IFRS (Shimamoto & Takeda, 2020). Thus J-GAAP

invest in R&D and engage in business combinations tend to make lower profits than the equivalent IFRS firms. The introduction of fair value to measure financial instruments into the revised Japanese accounting standards accelerated the dissolution of cross-shareholdings between business companies and financial institutions, which reduced banks' exposure to the stock market, and also attracted foreign investors. In fact, the trading volume of foreign investors is bigger than that of other shareholders (TSE, 2018).

In parallel with the accounting reform, the Securities and Exchange Law was modified to require more frequent disclosure. Internal governance reforms were also undertaken to disentangle the board of directors' supervisory function and its executive role; commercial legislation required companies to establish internal control systems and introduced the so-called committee system. With the new system, a nominating committee[8], which includes outside directors, is placed above the board of directors (Itami, 2005; Sato & Takeda, 2017). The professionalization of this body emulates the Anglo-American governance rules and can be seen as a source of normative isomorphic change (DiMaggio & Powell, 1983). In January 2022, only 2.2% of the listed firms (3,825 firms) had a nominating committee (JACD, 2022).

In the first decade of this century, plans for using IFRS underwent some changes that deviated from the initial convergence approach. Since the fiscal year ending March 2010, firms could voluntarily adopt IFRS for their consolidated financial statements provided they met three conditions: *i)* be listed; *ii)* have the necessary human resources and management systems to prepare these statements; *iii)* conduct financial or business activities internationally. Only three firms adopted IFRS in the first 2 years. Furthermore, in 2011 the Financial Services Agency (FSA) also allowed the use of US GAAP (FSA, 2011). In 2013, the voluntary adoption criteria were relaxed, and only condition *ii)* remained. In the same year, the Cabinet launched the document "*Japan's Revitalization Strategy*", and, to activate financial and capital markets and to increase international recognition, IFRS adoption was encouraged, which is consistent with the institutional perspective (Judge et al., 2010). A more obvious coercive isomorphic mechanism was employed in 2014 when the Tokyo Stock Exchange (TSE) promoted the "*JPX-Nikkei Index 400*" and strongly recommended firms using IFRS to be included in it. In fact, this is only the major stock exchange that allows such an option (Yan, 2018). The number of firms following this recommendation has grown over the years, from 83 in 2016 to 105 in 2019, and to 122 in 2022[9]. The Cabinet encouraged IFRS by providing material to be used by companies, which also helped to develop the ability to audit IFRS financial statements and can be considered another source of isomorphism. In a comparison made between US and Japanese accountants, Parboteeah et al. (2005) found considerable similarities, which they attributed to isomorphic pressures. Thus, although the Japanese government's strategy did not involve new strong measures being introduced, it supported IFRS (Deloitte, 2015). As Judge et al. (2010) argue, this normative isomorphism based on education and professionalism has been a useful strategy for facilitating IFRS adoption.

After all these changes, the number of Japanese firms adopting IFRS gradually increased. At the end of June 2014, 42 firms had adopted, or had decided to adopt or had planned to adopt IFRS; 225 in 2019 (combined market capitalization was 220 trillion yen, and represented 36% of the total market capitalization); 264 in 2022 (316 trillion yen in market capitalization, and represented 45.1% of the total) (TSE, 2022). In summary, although the number of firms that have adopted IFRS is not large and represents less than 10% of the total number of companies on the TSE, they are highly relevant in market capitalization terms because are account for nearly half the total market capitalization.

3. Literature review and hypotheses

3.1. Literature review

Previous research based on signaling and economic rationale has examined several factors that have influenced firms' decisions about the voluntary adoption of high-quality standards. Subsequent research has used the isomorphism lens that we herein consider, albeit at the country level rather than the firm level as we do[10].

Regarding the first research type, early papers focus on IAS adoption in selected countries and find that internationalization is the commonest factor (Dumontier & Raffournier, 1998; El-Gazzar et al., 1999; Murphy, 1999; Gassen & Sellhorn, 2006; Aljifri & Khasharmeh, 2006; Iatridis & Valahi, 2010). The period under study, 1999-2004, in Gassen & Sellhorn (2006)'s study enables us to argue that firms' behavior could have been influenced by coercive isomorphism because German companies already knew that international standards should be applied in 2005. A relatively different angle is followed by Christensen et al. (2015), who investigate the German firms that only adopted IFRS when it was mandatory. These authors attribute their behavior to an insider orientation because closer connections with banks and inside shareholders reduce incentives for more comprehensive accounting standards[11]. Other papers adopt a multi-country approach and find that cross-listing, high leverage, and foreign ownership explain IAS adoption (Covrig et al., 2007; Francis et al., 2008). Non-US firms that have adopted either IAS or US GAAP have also been studied because both are perceived as high-quality standards (Ashbaugh, 2001; Tarca, 2004; Cuijpers & Buijink, 2005). They conclude that internationalization is the most frequent explanation, but size is also relevant in some countries like Japan.

Given the institutional changes described in Section 2, it is not surprising that Japan has also drawn researchers' attention to examine firms' decisions. Inoue & Ishikawa (2014) do a pilot test based on 25 firms. They conclude that foreign ownership and R&D activities explain the decision to use

require a straight-line amortization of goodwill, but if there is evidence for impairment, an impairment loss must be recognized. R&D expenses are capitalized under IFRS (in certain circumstances) but are immediately expensed under J-GAAP. Impairment losses refer to tangible assets and some financial assets, although both systems require registering them when values drop, they cannot be reversed under J-GAAP, but can under IFRS.

[8]The nominating committee is set up to monitor top management and to resolve any proposals concerning the election and dismissal of board members, who must be approved at the shareholders' meeting. However, with the traditional Japanese system, the supervisory function is not completely separated from operational execution activities.

[9]For details, consult: https://www.jpx.co.jp/markets/indices/jpx-nikkei400/tvdivq00000031dd-att/cal2/_1/_jpx400.pdf (in Japanese).

[10]Kim (2016) employs this framework to explain the impact on reporting quality of using IFRS in the Russian Federation at the firm level. The author finds that firms experiencing all three types of pressures have significantly improved reporting quality, which is not the case if they only experienced coercive pressure. Coercive pressures take the form of legislative measures other than the obligation to adopt IFRS, and the normative and mimetic ones come through sectorial classification.

[11]Some studies have considered reasons why private companies adopted IFRS after 2005. Similarly to the studies referred to listed firms, they find that having foreign shareholders, ownership dispersion and high leverage are the most frequent explanatory factors (André et al., 2012; Matonti & Iuliano, 2012; Jung et al., 2016).

IFRS. Based on 46 firms, Takeda & Watanabe (2016) confirm the role of foreign ownership, but also find more propensity to adopt IFRS in younger, larger, and less leveraged firms, and those audited by the Big Four. Sato & Takeda (2017) consider 85 adopters and confirm previous results. However, they also find that having a nominating committee and being in the market index (i.e., "*JPX-Nikkei Index 400*") explain the decision, which we understand confirms the role of isomorphism. These results are consistent with those reported by Kameoka et al. (2020). However, as the period under study in both papers starts before 2013, when adoption was restricted to firms with international operations, their findings about the role of outside networks are somewhat circular. Kameoka et al. (2020) also find an industry effect that they associate with herd behavior. Amano (2020) considers 40 adopters and concludes that having intangible assets is key for making the decision. With a sample of 164 adopters, Kashiwazaki et al. (2019) attribute IFRS adoption to the accounting treatment of goodwill and, thus, the firms that engage in mergers and acquisitions (M&A) are more prone to adopt IFRS.

As indicated above, there is another stream of papers that considers the institutional perspective. Touron (2005) analyzes the adoption of US GAAP with three case studies, and concludes that normative and mimetic forces play a major role. More precisely the author refers to normative isomorphism acting by the transmission of norms through professional accountants (i.e. auditors), and to the mimetic isomorphism that encourages being recognized as a multinational group, particularly in a period of strong reorganization. Judge et al. (2010) confirm that all three forms of isomorphism are predictive of IFRS adoption around the world. Specifically, coercive, mimetic, and normative isomorphic forces are measured by foreign aid (a surrogate for the external political and economic forces), import penetration (capturing the integration degree of the national economy within the global marketplace), and level of education, respectively. As Carpenter & Feroz (2001) state, institutional theory and resource dependence theory complement each other; they identify coercive and normative isomorphic pressures as potent forces for GAAP adoption. Thus, based on the isomorphic lens combined with the resource dependence perspective, Alon & Dwyer (2014) find that IAS adoption at the country level is associated with not only the need for resources, but also with the nationalism level that goes against the permission of IFRS. Ramanna & Sletten (2014) introduce the network benefits notion, which is based on geographical proximity, culture, and also on investment flows and trade, as an important determinant of IFRS adoption, which matters more to countries that have smaller GDPs. Hofstede's national cultural dimensions are reported to influence managers' decisions about IFRS implementation in Guermazi & Halioui (2020), but the results about their influence on country-level decisions are inconsistent (Clements et al., 2010; Neidermeyer et al., 2012).

The institutional framework has also been used to explain IAS adoption in emerging economies, such as the United Arab Emirates (Irvine, 2008) and Bangladesh (Mir & Rahaman, 2005). In particular, Irvine (2008) identifies some of the global coercive, normative, and mimetic pressures (from the World Bank and capital markets, Big 4 accounting firms, and trade partners and multinational corporations, respectively) that have contributed to IFRS adoption, and Mir & Rahaman (2005) observe some evidence of coercive isomorphism through financial enticement. Similarly, Hassan et al. (2014) argue that the decision made by the Iraqi government to adopt IFRS for listed companies is due to the three types of isomorphism, where the coercive pressure generated by engagement with the international arena is a key factor (through Western forces and international aid agencies such as the World Bank and the International Monetary Fund)[12]. In sum, the surrogates used for the isomorphic forces are related to macroeconomic and political factors (e.g., GDP, foreign aid, level of education, nationalism), which are difficult to apply in this decision-oriented work at the firm level.

3.2. Hypotheses development

Institutional isomorphism offers a robust conceptual framework to explain IFRS adoption. As indicated above, isomorphic changes can operate through several mechanisms: coercive, mimetic, and normative (DiMaggio & Powell, 1983). Coercive isomorphism is caused by formal and informal pressures exerted by organizations that have authority over the entities. Mimetic isomorphism becomes an important driver of institutional changes, particularly when there is uncertainty, causing entities to act as others do. Regarding normative isomorphism, it derives from the members of a profession, whose new patterns of behavior also influence entities. In our view, all these pressures provide an adequate framework to understand why IFRS issued by the worldwide standard-setter, the IASB, are adopted on a voluntary basis by specific entities, once allowed to do so. However, as the studies discussed that have adopted this institutional framework are country-based, they offer neither convincing arguments nor proxies to be directly transferred to a firm-level analysis, but they are useful to mirror attitudes at that level of analysis. We discuss below how we have implemented the three forces that characterize this framework to the study of the Japanese firms' decisions to use IFRS.

Coercive isomorphism related to the legislative changes that took place in Japan at the beginning of this century conferred firms some discretion because, among other aspects, they were allowed to choose between changing the reporting system or not. We consider that the TSE's recommendation to use IFRS to be included in "*JPX-Nikkei Index 400*" was a coercive instrument that aimed Japanese entities to apply IFRS and thus be comparable with foreign firms that were included in international indexes. This could attract foreign investors, so, in a sense, it would have a similar impact to that of foreign aid, which is the measure used in Judge et al. (2010). Although, firms could have been inclined to follow this advice to appear in the index, only about one-third of indexed firms have adopted IFRS, which does not suggest the measure was really effective in achieving its purpose. In any case our first alternative hypothesis reads as follows:

> ***H1**: The adoption of IFRS by Japanese listed firms has been favored by coercive isomorphic pressures.*

We understand that the introduction of the nominating committee, which is a US-style corporate governance system, could function as an isomorphic pressure used by legislation to modernize firms. This would act through the pressure of professionalization, which is the normative force identified in several studies (Touron, 2005; Irvine, 2008). As a recent survey by the Japanese Ministry of Economy Trade and Industry (METI) has evidenced, the proportion of outside directors with experience as top managers in firms with a nominating committee is larger than in other traditional

[12] Bonito & Pais (2018) analyze the country's decision to adopt IFRS for small- and medium-sized entities (SMEs). Non-listed firms' motivations to adopt IFRS have also been analyzed using questionnaires (Guerreiro et al., 2012; Mantzari, et al., 2017).

governance models (METI, 2020) [13]. In addition, these outside directors have more diverse experience in different firms than those in other governance models. Therefore, we argue that firms with a nominating committee are more likely to appoint experienced professionals (top managers) as outside directors, which acts as a normative isomorphic factor that leads to IFRS adoption. In our view, these professionals will take a more proactive attitude than the traditional board of directors toward IFRS because using a transparent reporting system can facilitate their own oversight activities. This is consistent with the findings of Wu & Zhang (2009), who confirm the usefulness of IFRS for improving internal evaluation systems. Therefore, we argue that having a nominating committee can also direct firms toward IFRS adoption (Sato & Takeda, 2017; Kameoka et al., 2020). Indeed, IFRS adoption may also have been promoted by other professionals working with the firm, who are influenced by international forces; and, as Parboteeah et al. (2005) state, Japanese accountants are quite international. That said, we have not had access to any information about professional accountants working in the entities under study. Hence our second alternative hypothesis reads as follows:

***H2**: The adoption of IFRS by Japanese listed firms has been favored by normative isomorphic pressures.*

Next, we consider mimetic isomorphism, which suggests that firms imitate others that are perceived as being successful or legitimate. Pressure for homogeneity is heavy in the Japanese culture and, as Asaba (1997) suggests, it also applies to firms' behavior. Being different increases the likelihood of stakeholders demanding an explanation and the cost of risk exposures. We understand that successful firms are considered leaders and will have a mimetic influence on other firms, which will attempt to emulate them. Although success is difficult to capture, size is a factor that confers visibility and prestige, which are attributes that characterize successful firms (Haveman, 1993). Therefore, followers will be inclined to do the same as the leader, which is consistent with not only the so-called contagious effect (Reppenhagen, 2010), but with the observed behavior of Japanese firms (FSA, 2015) [14]. Mimetic behavior also suggests that firms imitate those that are perceived as being more legitimate, in the sense of behaving more in line with the acceptable system of norms, values, and definitions (Suchman, 1995). Previous research has shown that most international companies are interested in following international reporting practices since they are perceived as socially legitimized (El-Gazzar et al., 1999; Touron, 2005), which is also aligned with the results of Judge et al. (2010) regarding the importance of import penetration as a country mimetic force. Therefore, we think it is relevant to consider how Japanese firms integrate foreign culture when they are listed on other stock exchanges and when they have subsidiaries abroad. These international pressures could well motivate firms to adopt a more transparent language to communicate with investors, but also to facilitate communication with other stakeholders, particularly if they have subsidiaries abroad. So once following IFRS becomes an option, they should be inclined to do so. Consequently, our third alternative hypothesis reads as follows:

***H3**: The adoption of IFRS by Japanese listed firms has been favored by mimetic isomorphic pressures.*

4. Research design and sample selection

4.1. Research design

We perform univariate and multivariate analyses to test the hypotheses proposed above. For the univariate analysis, after checking the normality assumption of the explanatory variables, we run a non-parametric Wilcoxon test to verify if there are statistically significant differences between the sample of both adopters and non-adopters.

For the multivariate analysis, we consider those firms that have adopted IFRS and those that continue to be non-adopters. As in Bassemir (2018) and Kameoka et al. (2020), we employ a multiperiod logit regression model. This model has some advantages over the frequently used logit model based on one particular year (Ashbaugh, 2001; Tarca, 2004; Cuijpers & Buijink, 2005; André et al., 2012; Christensen et al., 2015). It considers all the years in which firms face the decision about adopting. It also achieves more consistent estimates by using all the available information. Hence non-adopters remain in the sample throughout the period, whereas IFRS firms are sampled only until they decide to adopt because, once the decision is made, there are no subsequent options. This is different from Sato & Takeda (2017), for whom adopters remain even though they have already made the decision. The logit model takes the following general form:

$$\ln\left(\frac{P\left(Y_i=1|x_i\right)}{1-P\left(Y_i=1|x_i\right)}\right)=\alpha+\sum_{k=1}^{K}x_{kit-1}\beta_k+\varepsilon_i$$

where Y_{it} is the binary variable IFRS (with IFRS = 1 in the year that a firm adopts IFRS, and 0 otherwise) for firm i in year t; x_{kit-1} represents the value of the k independent variable for the ith firm in year $t-1$; ε_i is the error term.

The k independent variables are the predictors used for the hypotheses. Coercive isomorphism (H1) is captured through an indicator variable (*NIKKEI_400*), which considers if the firm is in the "*JPX-Nikkei Index 400*". For normative isomorphism (H2), another indicator variable is used that captures if the firm has a nominating committee (*NOMCOM*). For mimetic isomorphism (H3), we employ three variables: the first considers if the industry leader uses IFRS (*LEADER*); to identify the leader, based on the FSA (2015)'s report, we consider the largest company in the industry by market capitalization; the second indicator takes into account if the firm is listed abroad (*LISTABROAD*); the third variable considers the ratio of foreign subsidiaries that the firm has to the total subsidiaries (*FORSUBS*).

We also add control variables that have been shown to be relevant by previous research. Firm complexity is likely to influence firms' reporting incentives; hence, as in Bassemir (2018), we understand that the demand for higher information transparency through IFRS is likely to increase with firm size (*SIZE*). The association between leverage (*LEVERAGE*) and IFRS adoption is not clear. Dumontier & Raffournier (1998) argue that the more leveraged the firm is, the higher the demand for efficient monitoring, which can be improved if IAS are adopted. However, El-Gazzar et al. (1999) and Tarca (2004) maintain that leverage can act as a proxy to capture a firm's dependence on equity capital. Therefore, those firms with lower leverage depend relatively more on

[13] In firms with a nominating committee, the proportion of outside directors with experience as top managers is 63.3%, but when firms have statutory auditors and audit committees, the percentages are 51.9% and 35.4%, respectively (METI, 2020).

[14] In fact, the IFRS Adoption Report states: "Once a company with larger market capitalization within an industry sector voluntarily adopts IFRS, other companies within that industry sector also tend to do so" (FSA, 2015, 3).

equity capital, and are more inclined to disclose information to reduce information asymmetries. Prior studies document a negative relation between firm age (*AGE)* and IFRS adoption (Kameoka et al., 2020; Amano, 2020). To finance their growth opportunities and/or to decrease their dependence on private debt markets, firms may also look for less traditional forms of financing like public equity (initial public offering, *IPO*). As Bassemir (2018) suggests, they would be more likely to adopt IFRS to make it easier for investors to follow them. Table 1 provides details about these variables, and also includes three others considered in an additional analysis: employee productivity (*EMPPROD),* goodwill (*GW*), and R&D expenses (*R&D*).

Table 1. Hypotheses and measurement of variables

Hypotheses	Variables
H1: Coercive isomorphism	*NIKKEI_400*: indicator variable, 1 if the firm is in *JPX-Nikkei Index 400*, and 0 otherwse.
H2: Normative isomorphism	*NOMCOM*: indicator variable, 1 if the firm has a nominating committee, and 0 otherwise.
H3: Mimetic isomorphism	*LEADER*: indicator variable, 1 if the industry leader uses IFRS, and 0 otherwise. The leader is the company with the largest market capitalization; following the Global Industry Classification Standard (GICS), 11 industries are distinguished. *LISTABROAD*: this indicator variable, 1 if the firm is listed abroad, and 0 otherwise. *FORSUBS*: the ratio of foreign subsidiaries that the firm has to the total subsidiaries.
Controls:	*SIZE*: natural logarithm of net sales. *LEVERAGE*: total liabilities divided by total equity. *AGE*: natural logarithm of the number of years since the firm was founded. *IPO*: indicator variable, 1 if the firm plans an IPO in one of the three following years, and 0 otherwise.
Additional analyses:	*EMPPROD*: net revenues over total employees. *GW*: goodwill over total assets. *R&D*: research and development expenses over net sales.

As in Wu and Zhang (2009) and Christensen et al. (2015), to measure the independent variables we utilize 1-year lagged values that anticipate the decision to adopt IFRS. This avoids making later adjustments between J-GAAP and IFRS, which would be necessary if contemporaneous variables were used[15]. However when referring to the IPO control variable, we employ a forward variable, which takes up to three years into account because firms are more likely to decide to adopt IFRS before going public.

4.2. Sample selection and data collection

As previously mentioned, the option to use IFRS was introduced in 2010, but only for listed firms with international activities. This explains why the number of adopters started to grow only after removing restrictions (in June 2013). Hence our decision to start in 2013 attempts to avoid any sample bias. As shown in the second column of Table 2, the tendency is non-linear because the number of companies (20) that decided to adopt in the last year comes close to the 17 that adopted in 2014.

As of March 2019, 184 firms had adopted IFRS in one particular year between March 2010 and March 2019, and 2915 had chosen to continue using J-GAAP. Therefore, information is available for 3099 companies. Note that non-adopters are in the sample every year because they decide to not adopt IFRS every year, but once a firm adopts IFRS, it is not taken into account again. After excluding the first 4 years, 10 adopters are eliminated, leaving 174 adopters in our sample. In terms of non-adopters' firm-year decisions, 16952 remain and correspond to 2915 firms. All in all, our final sample considers 3089 firms. Consequently, our empirical analysis considers 17126 firm-year decisions. Of adopters, 13 switched from US GAAP to IFRS, and are initially excluded to avoid making reconciliation adjustments between US GAAP and J-GAAP and potential biases. However, they are considered in the robustness tests. There are no cases in which the company has changed from IFRS to J-GAAP or US GAAP. Due to missing data, two other firms have also been excluded. Hence, the initial analysis refers to 159 adopters. Three other firms have been lost when adding the control variables. In any case, the adopter sample is relatively large compared to the aforementioned Japanese studies. The unbalanced number of adopters and non-adopters is the result of the real decisions made by Japanese firms.

Table 2. Annual decisions to follow IFRS or J-GAAP

Fiscal year-end	IFRS	J-GAAP	Total decisions
31/03/2010	1	2,524	2,525
31/03/2011	2	2,545	2,547
31/03/2012	2	2,590	2,592
31/03/2013	5	2,644	2,649
Subtotal	10	10,303	10,313
31/03/2014	17	2,696	2,713
31/03/2015	31	2,770	2,801
31/03/2016	25	2,830	2,855
31/03/2017	48	2,854	2,902
31/03/2018	33	2,887	2,920
31/03/2019	20	2,915	2,935
Subtotal	174	16,952	17,126
Total	**184**	**27,255**	**27,439**

Notes: Column 2 indicates the decisions to adopt IFRS per year, 184 is the total number of decisions during the 2010-2019 period. Column 3 indicates the decisions not to adopt (continue using J-GAAP) per year, 27255 is the total number of decisions (note that a firm might recurrently decide not to adopt and, thus, appears 10 times in this column). Column 4 is the sum of columns 2 and 3.

Data have been obtained from different sources: Eikon, Orbis, and Nikkei Financial Quest. The last database contains the narrative information included in the notes to financial statements. The accounting data are expressed in millions of Japanese yen. We use consolidated financial information that are the only financial statements prepared in accordance with IFRS.

5. Empirical results

5.1. Univariate analyses

The univariate analysis results are displayed in Table 3. Most variables show statistically significant differences between adopters and non-adopters at 1%, except for *LEVERAGE,* which is significant at 5%, and those capturing firm age and employee productivity (*AGE* and *EMPPROD,* respectively), which are not significant. As suggested, adopters tend to be in the "*JPX-Nikkei Index 400"* (*NIKKEI_400*), have a nominating committee (*NOMCOM*), and the industry leader uses IFRS more often than in the non-adopter group (*LEADER*). That said, of the 11 sectors identified, only three (health, basic consumer staples, and communications) adopt IFRS. Furthermore, adopters are more international since

[15] Bassemir (2018) does the analysis by adjusting contemporaneous variables, but by also using lagged independent variables as we do, and the results remain consistent. Nevertheless, most of the other studies that employ contemporaneous variables do not adjust them.

Table 3. Descriptive statistics of the variables and Wilcoxon tests

	Adopters					Non-adopters					
Variable	Mean	SD	Min.	Median	Max.	Mean	SD	Min.	Median	Max.	Wilcoxon
NIKKEI_400	0.463	0.500	0.000	0.000	1.000	0.086	0.280	0.000	0.000	1.000	-13.342***
NOMCOM	0.113	0.317	0.000	0.000	1.000	0.010	0.102	0.000	0.000	1.000	-12.415***
LEADER	0.206	0.406	0.000	0.000	1.000	0.123	0.329	0.000	0.000	1.000	-3.936***
LISTABROAD	0.669	0.472	0.000	1.000	1.000	0.191	0.393	0.000	0.000	1.000	-13.792***
FORSUBS	0.494	0.275	0.000	0.535	1.000	0.318	0.296	0.000	0.250	1.000	-6.872***
SIZE	12.071	2.299	2.481	12.725	16.284	10.489	1.696	3.106	10.428	16.405	-9.497***
LEVERAGE	2.353	7.047	0.020	1.133	83.403	1.706	8.315	0.016	0.971	921.806	-2.538**
AGE	3.526	1.100	0.000	4.119	4.779	3.750	0.778	0.000	4.043	4.913	1.320
IPO	0.113	0.317	0.000	0.000	1.000	0.031	0.174	0.000	0.000	1.000	-8.094***
EMPPROD	48.213	44.353	1.487	32.845	285.510	58.773	73.767	0.876	38.486	1598.076	1.354
GW	0.139	0.178	0.000	0.066	0.791	0.032	0.060	0.000	0.011	0.720	-9.425***
R&D	0.080	0.243	0.000	0.028	2.326	0.047	0.414	0.000	0.012	14.474	-3.969***

Notes: All the independent variables are defined in Table 1.
*, ** and *** are statistically significant at 10%, 5% and 1%, respectively.

Table 4. Pearson and Spearman correlations

	IFRS	*NIKKEI_400*	*NOMCOM*	*LEADER*	*LISTABROAD*	*FORSUBS*	*SIZE*	*LEVERAGE*	*AGE*	*IPO*	*EMPPROD*	*GW*	*R&D*
IFRS	1.000	0.176***	0.158***	0.059***	0.147***	0.088***	0.145***	0.032*	0.040**	0.013	-0.002	0.095***	0.074***
NIKKEI_400	0.160***	1.000	0.099**	0.054***	0.495***	0.158***	0.562***	0.005	0.237***	-0.049***	0.130***	0.073***	0.114***
NOMCOM	0.107***	0.057***	1.000	0.026	0.126***	0.109***	0.084***	0.075***	0.009	-0.014	-0.017	0.070***	0.052***
LEADER	0.043***	0.034***	0.030***	1.000	0.047**	-0.086***	0.020	-0.116***	-0.083***	-0.010	0.122***	0.145***	0.045***
LISTABROAD	0.131***	0.451***	0.098***	0.042***	1.000	0.180***	0.527***	-0.018	0.145***	-0.032*	0.128***	0.117***	0.173***
FORSUBS	0.063***	0.074***	0.057***	-0.080***	0.117***	1.000	0.227***	-0.040***	0.237***	0.004	-0.197***	0.044**	0.430***
SIZE	0.129***	0.481***	0.071***	-0.026***	0.481***	0.052***	1.000	0.238***	0.467***	-0.065***	0.358***	-0.007	0.023
LEVERAGE	-0.002	-0.002	0.056***	-0.031***	0.009	-0.033***	0.023**	1.000	0.110***	0.043**	0.151***	0.021	-0.243***
AGE	-0.007	0.073***	0.018*	-0.098***	-0.002	0.058***	0.286***	-0.037***	1.000	-0.105***	0.099***	-0.149***	0.189***
IPO	-0.0003	-0.034***	-0.011	0.005	-0.025**	0.022**	-0.099***	0.030***	-0.175***	1.000	0.005	-0.016	-0.024
EMPPROD	0.003	0.086***	-0.021**	0.102***	0.069***	-0.200***	0.335***	0.031***	-0.036***	-0.004	1.000	-0.032*	-0.256***
GW	0.166***	0.019	0.080***	0.133***	0.074***	0.023	-0.065***	0.023	-0.168***	0.006	-0.059***	1.000	0.031*
R&D	0.008	-0.013	0.003	0.133***	0.055***	0.071***	-0.184***	0.012	-0.121***	-0.005	-0.068***	0.047***	1.000

Notes: IFRS is 1 in the year that a firm adopts IFRS, 0 otherwise. All the independent variables are defined in Table 1.
*, ** and *** are statistically significant at 10%, 5% and 1%, respectively.
The Pearson correlation coefficients are shown below the diagonal and the Spearman correlation coefficients are depicted above the diagonal.

they are more frequently listed abroad (*LISTABROAD*) and have more foreign subsidiaries (*FORSUBS*). They are also larger (*SIZE*), more indebted (*LEVERAGE*), and more prone to IPO (*IPO*). In addition, adopters tend to have higher goodwill (*GW*) levels and more R&D expenses (*R&D*) than non-adopters.

Table 4 shows the Pearson correlations below the diagonal and the Spearman correlations above the diagonal. It can be seen that the correlations between the dependent variable, which captures the decision to adopt IFRS, and the variables of interest, which capture the three isomorphic pressures, are all significant at 1% and positive as stated in the three hypotheses. This correlation matrix helps to examine whether multicollinearity is a potential issue. Although only a few variables are highly correlated (e.g., *NIKKEI_400* and *SIZE,* and *LISTABROAD* and *SIZE)*, none exceeds the critical value of 0.6. In addition, multicollinearity problems are ruled out because none of the VIF (Variance Inflation Factor) values is above 2.

5.2. Multivariate analyses

Table 5 displays the regression results for the probability of a firm adopting IFRS. As previously mentioned, we run logit models. Column 3 reports the results of the base model, which includes the variables related to the three hypotheses: coercive isomorphism (*NIKKEI_400),* normative isomorphism *(NOMCOM),* and mimetic isomorphism *(LEADER, LISTABROAD,* and *FORSUBS*). In Column 5, we add the control variables.

All the models include indicator variables to control for the industry- and year-specific fixed effects. No estimation problems are identified in the coefficients because the (unreported) standard errors of the significant variables are always smaller than their estimated coefficients.

For the base model, the five variables are positive and significant, and allow the rejection of the three null hypotheses because they confirm that the three types of isomorphism are useful for explaining the decision to adopt IFRS. As expected, the coercive measure introduced by Japanese authorities, and captured by the *NIKKEI_400* variable, is significant at 1%. The normative pressure exercised through a nominating committee *(NOMCOM)* is also significant at 1%. The three variables that capture the mimetic pressures are also significant, *LISTABROAD* and *FORSUBS* at 1%, and *LEADER* at 5%. These results fall in line with Japanese studies (Sato & Takeda, 2017; Kameoka et al., 2020). However, the influence of the last variable requires further explanation for suggesting that most leaders' decision to not adopt IFRS is followed by many companies in the market. Thus, they resist change by making other isomorphic forces and, in particular, the coercive measures introduced by legislation less effective. The significance of the five proxies suggests that isomorphic pressures are complementary to the dynamics of firms' decisions, and they all increase the probability of adopting IFRS. The coercive and normative measures have been successful for promoting the new international language, as it is observed that belonging to the index and having a more international governance structure makes firms more inclined to use IFRS. Consistently with previous research, we find that the most in-

ternational firms are interested in following internationally accepted and legitimized practices, which can be perceived as a way to enhance their reputation. When referring to international pressures, we understand that being listed abroad impose strict requirements on firms so they are similar to their peers regardless or not they were allowed to use J-GAAP based on IFRS equivalence. Besides, when firms have subsidiaries abroad, they may also perceive pressures from foreign stakeholders that make them act more internationally.

As for the controls, *SIZE, LEVERAGE* and *IPO* also increase the probability of adopting IFRS (Bassemir, 2018; Kameoka et al., 2020). Conversely, *AGE* lowers this probability (Amano, 2020), as Column 5 of Table 5 reports.

Odds ratios (e^{β}) can help us to understand the effect of the significance of the independent variables on the probability of firms adopting IFRS. Particularly, and as Column 4 of Table 5 reveals, the stronger effect is due to the existence of a nominating committee. Thus, the probability of adopting is 6.23-fold higher when the firm has a nominating committee, and all the other variables remain constant. The firms indexed in *"JPX-Nikkei Index 400"* are 3.46-fold more likely to voluntarily adopt IFRS than non-indexed firms. As regards the mimetic isomorphism, the odds ratios suggest no negligible effects on the adoption probability, with values like 4.18 and 1.72 for *LISTABROAD* and *LEADER*, respectively. However, the interpretation of the ratio of continuous variables (e.g., *FORSUBS)* differs from that of the odds ratio of the dichotomous variables because, in this case, we expect a 59.9% increase in the odds of a company that adopts IFRS voluntarily for a one-standard-deviation increase in the percentage of foreign subsidiaries.[16] Column 6 of Table 5 includes the odds ratio of the control variables and provides consistent results, which confirm the nominating committee's very important role, followed by being listed abroad.

We perform a step-by-step analysis and independently include the variables that refer to the three isomorphic pressures. Unreported results indicate that McFadden's adjusted R^2s are higher when the mimetic variables are considered (12%) than when the coercive and normative variables are included (8.4% and 3.2%, respectively). The AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) follow the same path and reveal the lowest AIC and BIC in the model that only incorporates the mimetic variables.

Table 5. Logit models for the probability of adopting IFRS

		Base model		Base model and controls	
	Expected sign	Coefficient	Odds	Coefficient	Odds
Constant		-6.054 [-19.91]***	0.002	-6.568 [-20.27]***	0.001
NIKKEI_400	(+)	1.241 [6.65]***	3.457	1.023 [4.69]***	2.781
NOMCOM	(+)	1.829 [6.21]***	6.227	1.830 [5.67]***	6.233
LEADER	(+)	0.540 [2.53]**	1.716	0.547 [2.45]**	1.729
LISTABROAD	(+)	1.431 [7.47]***	4.183	1.198 [5.31]***	3.312
FORSUBS	(+)	0.469 [5.53]***	1.599	0.529 [5.76]***	1.698
SIZE	(+)			0.448 [3.73]***	1.565
LEVERAGE	(+/–)			0.079 [2.32]**	1.082
AGE	(–)			-0.358 [-5.70]***	0.699
IPO	(+)			2.163 [6.06]***	8.696
Observations		16,675		16,409	
Adopters		159		156	
Industry fixed effect		Yes		Yes	
Year fixed effect		Yes		Yes	
Mean VIF		1,42		1,41	
Likelihood ratio test		310.52***		389.29***	
McFadden's R^2		0.173		0.221	

Notes: All the independent variables are defined in Table 1.
*, ** and *** are statistically significant at 10%, 5% and 1%, respectively.
z-statistics are in brackets.

5.3 Additional analysis

As a complementary analysis, we consider two aspects that might influence firms' decisions from a more internal perspective. First, as in Wu & Zhang (2009), we expect the least labor-productive firms to be more inclined to adopt high-quality accounting standards because greater transparency exercises a stewardship function that helps to improve the internal evaluation system. Employee productivity (*EMPPROD*) is measured as the ratio of net revenues to total employees.

Second, as in Inoue & Ishikawa (2014), we investigate whether the differences between the two accounting standards IFRS and J-GAAP affect the decision to apply IFRS. These authors highlight how the very unconditional conservative accounting treatment for goodwill and R&D expenses under Japanese standards affects firms' behavior. Hence, firms might prefer to switch to IFRS because they can report more profits. In fact, Kashiwazaki et al. (2019) find that those firms that conduct M&A are more likely to adopt IFRS. The proxies used are goodwill (*GW*) and R&D expenses (*R&D*) deflated by total assets and net sales, respectively. Given the information in the database, these further analyses are done with relatively smaller samples.

The results of the two analyses in Table 6 are consistent with those in Table 5. They show that, as expected, the employee productivity variable (*EMPPROD*) is significant and negative, and the other variables remain as in the main analysis, except for *LEVERAGE,* which is not significant (Column 3 of Table 6). Thus, we confirm the role of IFRS in playing a stewardship role because those firms with lower labor productivity are more inclined to adopt them.

Finally, Column 5 of Table 6 includes the two accounting variables (*GW* and *R&D),* which are positive and significant. This suggests that Japanese firms prefer the less unconditional conservative IFRS solution to treat these items (Inoue & Ishikawa, 2014; Kashiwazaki et al., 2019; Amano, 2020), which confirms the preference for accounting policies that improve financial position. However, this could be a short-term effect, as it happens in Iatridis & Valahi (2010) for the UK case. Other variables remain as in the main analysis, except for *LEVERAGE, AGE* and *IPO,* which are not significant.

The odds ratios in both Columns 4 and 6 confirm that normative isomorphism, i.e. the existence of a nominating committee, is the most significant predictor, followed by belonging to the "*JPX-Nikkei Index 400*", our proxy for coercive isomorphism. Regarding mimetic pressures, Table 6 also shows that being listed abroad is very influential.

[16] As in Guerreiro et al. (2012) we base our analysis of the significance of the predictors on odds ratios, the further the estimated ratio is away from 1 the more influential the predictor is, and as they do the non-dichotomous variables have been standardized.

Table 6. Additional analysis: including other variables

	Expected sign	EMPPROD		Accounting	
		Coefficient	Odds	Coefficient	Odds
Constant		-6.456 [-19.99]***	0.002	-6.869 [-11.73]***	0.001
NIKKEI_400	(+)	0.983 [4.11]***	2.671	0.966 [2.77]***	2.627
NOMCOM	(+)	1.811 [5.08]***	6.117	1.921 [4.43]***	6.828
LEADER	(+)	0.619 [2.54]**	1.857	0.783 [2.29]**	2.189
LISTABROAD	(+)	0.894 [3.49]***	2.444	1.006 [2.21]**	2.734
FORSUBS	(+)	0.488 [4.93]***	1.629	0.399 [2.00]**	1.490
SIZE	(+)	0.648 [4.58]***	1.911	0.751 [3.51]***	2.118
LEVERAGE	(+/–)	0.071 [1.15]	1.074	-1.625 [-0.78]	0.197
AGE	(–)	-0.389 [-5.69]***	0.677	-0.122 [-1.02]	0.885
IPO	(+)	2.379 [4.95]***	10.797	1.188 [0.59]	3.282
EMPPROD	(–)	-0.536 [-2.61]***	0.585		
GW	(+)			0.554 [5.84]***	1.740
R&D	(+)			0.540 [3.31]***	1.716
Observations		15.582		3.540	
Adopters		139		73	
Industry fixed effect		Yes		Yes	
Year fixed effect		Yes		Yes	
Mean VIF		1,40		1,44	
Likelihood ratio test		356.12***		213.96***	
McFadden's R^2		0.224		0.301	

Notes: All the independent variables are defined in Table 1.
*, ** and *** are statistically significant at 10%, 5% and 1%, respectively.
z-statistics are in brackets.

5.4. Robustness tests

We perform a series of analyses to confirm our results. We estimate panel data models, and the unreported results are consistent with those in Tables 5and 6. We consider different approaches to deal with outliers. In the reported models, after identifying them by graphical visualization, they were removed from the sample, while in the robustness tests, we winsorize the sample at 1%. The unreported results are basically consistent with those reported in Tables 5and 6.

As previously indicated, the firm-year observations applying US GAAP have been removed from the initial sample. We go on to replicate the analyses after including them, and the unreported results remain consistent for all the models. We also compute the models for the second lag of the independent variables. The unreported results are consistent with those reported in Tables 5and 6.

Additional robustness tests are performed by considering alternative definitions for some controls: *SIZE*, measured as the natural logarithm of total assets and of total market capitalization; *AGE*, measured as the number of years since the firm was founded; *LEVERAGE*, as the total liabilities divided by the total assets. The unreported results do not vary in terms of the significance of the estimated coefficients reported in Table 6, nor does the sign of the estimated effects.

Moreover, despite working with the total population of listed firms, we are aware that the sample of both adopters and non-adopters is somewhat unbalanced. To minimize the potential problems that might stem from this, we replicate the study using random subsamples. In particular, we run the four models with ten subsamples, which include all the IFRS adopters and one tenth of the non-adopters randomly selected per year. The goal of this approach is to check if the results are still robust when considering samples with a more balanced proportion of adopters and non-adopters. Table 7 summarizes the results; we include the percentages of cases in which the sign of each variable is positive (negative) in the different estimates made for significance of at least 10%. In general terms, these figures confirm the stability of the estimates for the different samples. When examining these estimates, we observe no sign change in any significant variable.

Table 7. Robustness tests: random subsamples

	Base model		Base model and controls		EMPPROD		Accounting variables	
	+	–	+	–	+	–	+	–
NIKKEI_400	100%	0%	100%	0%	100%	0%	50%	0%
NOMCOM	100%	0%	100%	0%	100%	0%	70%	0%
LEADER	50%	0%	70%	0%	90%	0%	10%	0%
LISTABROAD	100%	0%	100%	0%	100%	0%	0%	0%
FORSUBS	100%	0%	100%	0%	100%	0%	100%	0%
SIZE	-	-	100%	0%	100%	0%	100%	0%
LEVERAGE	-	-	20%	0%	0%	0%	0%	0%
AGE	-	-	0%	100%	0%	100%	0%	60%
IPO	-	-	-	-	100%	0%	70%	0%
EMPPROD	-	-	-	-	0%	100%	-	-
GW	-	-	-	-	-	-	100%	0%
R&D	-	-	-	-	-	-	70%	0%

Notes: All the independent variables are defined in Table 1.
Columns 2 to 9 include the percentages of cases in which the sign of each variable is positive or negative in the different estimates made for significance of at least 10%.

In addition, the three hypotheses and their proxies have been individually tested for a reduced and more balanced sample using the propensity score matching (PSM) technique (Peel & Makepeace, 2012; Peel, 2014), following a two-step process. In the first step, considering all control variables, we run the PSM to select matches of non-adopter observations to adopter observations. In the second step, we run the logistic model for each of the independent variables used in our hypotheses. Overall, the results shown in Table 8 for various matching ratios of 1, 2, 3, and 4 non-adopters per adopter observation (Linden & Samuels, 2013) are robust and consistent with those reported in Table 5.

These results suggest that IFRS adoption in Japan is being achieved through isomorphic pressures. Mimetic isomorphism is acting through firms in networks, either international listed firms or subsidiaries, and international investors' preferences. Indeed, these results are consistent with the economic rationales that underpin the accounting choice of high-quality accounting standards (El-Gazzar et al., 1999; Tarca, 2004; Kameoka et al., 2020). However, coercive isomorphism from the Japanese government has also been key in such individual decisions; thus, to promote the country's internationalization, several legislative measures whose aim is IFRS adoption have been introduced. They not only allow firms to adopt IFRS, but promote the establishment of an Anglo-American governance system, the nominating committee, which has acted as a normative isomorphism force, and the TSE established the "*JPX-Nikkei Index 400*", which strongly recommends using IFRS. Consistently with previous Japanese studies (Sato & Takeda, 2017; Kameoka et al., 2020), our results suggest that they are effective in making firms follow IFRS.

Table 8. Robustness tests: propensity score matching

	Model 1:1		Model 2:1		Model 3:1		Model 4:1	
	Coeff.	z	Coeff.	z	Coeff.	z	Coeff.	z
NIKKEI_400	0.53	1.76*	0.57	2.39**	0.62	2.79***	0.61	2.96***
Observations	230		300		358		424	
Likelihood ratio test	3.21*		5.80**		7.90***		8.82***	
NOMCOM	2.15	2.06**	1.74	2.74***	2.10	3.31***	2.10	3.73***
Observations	230		300		358		424	
Likelihood ratio test	7.91***		10.45***		16.00***		18.81***	
LEADER	0.31	0.82	0.44	1.40	0.63	2.14**	0.46	1.75*
Observations	229		299		357		423	
Likelihood ratio test	0.7		2.01		4.67**		3.04*	
LISTABROAD	0.86	2.89***	0.76	3.15***	0.72	3.27***	0.71	3.41***
Observations	228		298		356		421	
Likelihood ratio test	8.49***		10.12***		10.96***		11.97***	
FORSUBS	2.61	4.30***	2.62	5.51***	2.28	5.38***	2.19	5.44***
Observations	227		297		355		419	
Likelihood ratio test	23.56***		37.33***		33.16***		33.76***	

Notes: The independent variables are defined in Table 1.
*, ** and *** are statistically significant at 10%, 5% and 1%, respectively.
Models are specified as X:1 where X refers to the selected number of non-adopters per 1 adopter in the sample according to the propensity score. A non-adopter can be matched to more than one adopter.

6. Conclusion

Compared to the mandatory adoption of IFRS in the EU, which were introduced only three years after the decision was announced in 2002, the Japanese government has not only taken a relatively long time, but has changed its approach from convergence to voluntary adoption. Indeed, we should not ignore the fact that the Japanese government has always kept a close eye on the US Securities and Exchange Commission (SEC), which also abandoned the convergence approach during the period under study.

Following a series of accounting and finance reforms that started at the end of the 1990s, Japanese firms have been allowed to apply IFRS since 2010. As adoption was initially conditioned by fulfilling certain requirements, this study examines the accounting decision for a period during which all listed firms were allowed to do so: 2013-2018. The accounting change that allowed high-quality international standards to be used is one of the many profound institutional reforms that aimed to open Japan up to the outside world. And, although it has been a very closed economy until the 1990s, Japan is now a fairly open country as far as investors are concerned.

This paper adopts an institutional approach (Meyer & Rowan, 1977) based on the isomorphism construct (DiMaggio & Powell, 1983). We argue that since organizations tend to be rather homogeneous in structure and culture, this may lead them to adopt a common accounting language: IFRS. Thus, not only coercive isomorphism related to the legislative changes introduced by the Japanese authorities, but also the normative isomorphism, may have played an important role, and the mimetic isomorphism embedded in the Japanese culture might also be useful to explain firms' decisions. Thus, firms may decide to adopt the accounting language of those that are perceived to be more successful or more legitimate, which could be especially relevant when facing uncertain situations, such as being listed abroad or having subsidiaries in other countries. This analysis also contemplates the potential stewardship role of IFRS, as well as the accounting differences between IFRS and J-GAAP, as complementary factors. This paper, hence, embraces a more comprehensive approach than previous studies based on Japanese data and offers a new lens for explaining firm decisions. To summarize, this study provides a coherent framework based on the institutional theory to explain firms' attitudes toward IFRS, while this framework has to date been used to only explain countries' decisions. We understand this can be seen as a contribution to the literature, both from the theoretical and empirical perspective, although the novel approach followed makes it impossible to establish direct comparisons with previous studies that follow the institutional framework.

With a multiperiod logit regression model, in which we consider every annual decision made about adopting IFRS or not, we find that isomorphism is a useful framework to explain Japanese firms' decisions. We show that the different isomorphic forces complement one another. Forming part of the "*JPX-Nikkei Index 400*" and having a nominating committee, which are two isomorphic measures capturing coercive and normative pressures, respectively, favor IFRS adoption. In fact, having a nominating committee appears to be the best predictor of the decision, but all measures play an important role. In short, and as the institutional theory states, managers who seek cognitive legitimacy in the global market are more likely to switch to IFRS. Thus, when the industry leader adopts IFRS, other firms tend to follow, and the more international a firm is, the more it prefers to use IFRS, exactly as the mimetic isomorphic behavior suggests; that is, they prefer behaving in line with the internationally acceptable system of accounting norms that IFRS represent as it confers them legitimacy (Suchman, 1995). However, it should be noted that as most industry leaders have not adopted IFRS, followers continue to use J-GAAP. This result leads us to convey a message to the authorities to introduce specific industry recommendations to push leaders to adopt IFRS as a way to encourage other companies to do so. In terms of accounting differences, our results confirm that treatment of intangibles is a critical factor that makes firms prefer IFRS. They also confirm the stewardship function of high-quality standards. As in previous studies, we also find that firm size and the fact of planning an IPO positively affect the decision, while a firm's age has a negative influence.

Apart from providing a robust conceptual framework based on institutional isomorphism to explain firms' decisions to change the reporting system, our results contribute to the literature on the adoption of high-quality accounting standards. This knowledge can help Japanese regulators to move forward with their strategy to drive Japanese firms' internationalization and to assist other regulators in making decisions to promote IFRS adoption. We also believe that knowing the incentives for firms to apply IFRS is of great interest for the IASB to promote a more widespread use of these standards. This study also states the path for future research to focus on how IFRS were introduced in Japan. As previously mentioned, compared to other jurisdictions, as the process has been changing and has taken many years, understanding the dynamics of the process is extremely relevant. Moreover, the institutional framework followed in this research work proves useful for understanding such decisions (Mir & Rahaman, 2005; Carneiro et al., 2017), and offers a new lens for researchers. In particular the lessons learned about countries' processes for adopting IFRS and companies' motivations for doing so voluntarily can also be useful for understanding the adoption of future sustainability disclosure standards. Indeed, the institutional framework linked with sustainability reporting provides a new landscape for analyz-

ing both country and firm decisions on the adoption of future disclosure standards.

As with any other research, this study is not without limitations. First, as information about some adopters is lacking, we do not include some variables in all the models, and as with any other study on voluntary adoption, some omitted variables can affect the results. We should particularly mention that since we do not know whether the firms in the sample are subsidiaries of other companies that use IFRS and have been included in consolidated statements, we are unable to include this aspect as an additional explanatory variable to adopt these standards. Second, we are aware of the potential problems that derive from unbalanced samples of adopters and non-adopters and, more precisely, the small sample size of adopters. To overcome this concern, we replicate the study with random subsamples, and also with more balanced samples of non-adopters using propensity score matching. All in all, after numerous robustness tests, we are confident about the consistency of our results.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

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