Impacts of IFRS on corporate tax legislation: with special reference to South Korea's Reforms[1]

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ABSTRACT

Many countries have recently pursued IFRS adoption. However, even after adoption, accounting practices are continuously influenced by national GAAP and country-specific peripheral systems; this can interfere with fulfilling the IASB's central objective. Further investigations are needed to clarify systems that can regulate the effects of IFRS adoption.

When South Korea adopted IFRS, it positioned IFRS adoption as a part of its national economic strategy; it aggressively pursued measures to ensure the smooth transition to IFRS, including the revision of peripheral regulations. As a result of various related efforts, South Korea is now expecting to see an improved perception of reliability with respect to the financial statements generated by South Korean companies, as well as South Korea's enhanced status in the international accounting community.

Based on these facts, this study analyzes the 2010 revision to the Korean Corporate Tax Act and its effects on accounting practices. More specifically, it aims to examine the revision with respect to PPE depreciation and the Definite Settlement of Accounts Approach—the latter of which has been considered the most problematic aspect of IFRS adoption.

The experience of South Korea convinces us that it would be possible to develop systemic responses to IFRS application.

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1 Introduction

Recently, many countries have pursued initiatives relating to the adoption of International Financial Reporting Standards (IFRS).[2] However, even after IFRS adoption, accounting practices continued to be influenced by national Generally Accepted Accounting Principles (GAAP) and country-specific peripheral systems.[3] Given these circumstances, it has been noted that it will be difficult to achieve the central objective[4] of the International Accounting Standards Board (IASB).[5] Therefore, "further investigations are necessary to answer the question [of] what kind of system (for example, Commercial Law, Tax Act, Corporate Governance, Culture, etc.) can regulate the effects of the application of IFRS" (Ito, 2013, p. 12).

Even among countries that have not yet adopted them, IFRS have had certain effects on accounting standards. For example, Japan has postponed the mandatory application of IFRS to the fiscal period ending March 2015; the relevant authorities in Japan are still compelled to deal with its effects. After continuing deliberations on IFRS, the Financial Services Agency of Japan (FSA) issued in June 2013 a report entitled "The Present Policy on the Application of International Financial Reporting Standards (IFRS)" (hereafter, Present Policy). The Present Policy, whose principal purpose is "to further clarify Japan's attitude toward IFRS" (FSA, 2013, p. 3), reiterates Japan's commitment to the goal of a single set of high-quality global accounting standards. It recommends the following steps be taken to meet the membership criteria of the IFRS Foundation Monitoring Board (i.e., "use of IFRS"): relaxation of statutory requirements for eligibility regarding the voluntary application of IFRS; the introduction of an additional set of standards identical to IFRS, with limited modifications (hereafter, J-IFRS (Ito, 2013, p. 13)), and the simplification of the disclosure of nonconsolidated (single-entity) financial statements (FSA, 2013).

While the Present Policy has made significant progress towards bringing about IFRS adoption, it also reconfirms that Japan's policy should continue to be maintained, which leaves nonlisted small and medium enterprises (SMEs) unaffected by IFRS, as presented in the "Previous Discussion Summary for the Consideration on the Application of IFRS in Japan (Previous Discussion Summary)," published by FSA in July 2012 (FSA, 2013, p. 4). The Previous Discussion Summary states

[2] As of February 26, 2014, among the 153 jurisdictions that have a stock exchange market, 103 made IFRS adoption a legal requirement (10 of which require some of their companies to adopt IFRS). Additionally, 25 jurisdictions permitted the application of IFRS. Please refer to www.iasplus.com, "Use of IFRS by Jurisdiction" for further details.

[3] For example, Ito (2013) points out that even after IFRS adoption, "local factors will induce accounting practices that are specific to each country" (p. 17).

[4] IASB declares that it's central objective is to facilitate the provision of comparable financial information for participants in the world's capital markets (IASB's Preface to IFRS, para. 6).

[5] For example, Kvaal and Nobes (2010, p. 173) assert that "the existence of systematic differences in practice related to national borderlines is clearly in conflict with the objective of international harmonization."

Table 1. Accounting standards applied in Korea.

Accounting standards (year applied)	Classification of companies	Numbers of companies*
K-IFRS (2011)	Mandatory application	1,677 (2012)
	Voluntary application	1,479 (2012)
Standards for NPEs** (2011)	Subject to Audit Act	16,027 (2011)
Standards for SMEs (2014)	Not subject to Audit Act	421,434 (2010)

Note: *As of December 31 of the year indicated. **NPEs: nonpublic entities.
Source: Prepared by author, based on KFSS (2012, p. 2; 2013, p. 2) and KAI (2012, p. 2).

that Japan would be continuing to investigate the most appropriate method for its accounting system and the specific conditions of the Japanese economy—for instance, the use of the Definite Settlement of Accounts Approach, or *kakuteikessansyugi* (FSA, 2012, pp. 4–6).

It can be inferred from the IFRS adoption literatures and basic ideas about IFRS in Japan that an important consideration is the effects of IFRS on relevant peripheral systems and their coordination.[6] Furthermore, to achieve the IASB's central objective, it should be required not only that IFRS be adopted as accounting standards, but that IFRS practices be also converged. When South Korea (hereafter, Korea) adopted Korean International Financial Reporting Standards (K-IFRS),[7] it was as part of its single national economic strategy,[8] and it aggressively pursued IFRS adoption measures.[9] When Korea reformed its

[6]For example, Ahmed et al. (2013) present evidence that a country's systemic factors—particularly its legal enforcement—will determine whether or not the quality of profit will improve following IFRS adoption.

[7]There is no difference in terms of content and form between IFRS and K-IFRS, but the purpose of referring as K-IFRS was to indicate the following: "As the accounting standards that should be complied by Korean companies, the IFRS has been adopted by institutions with legal authority through public and fair procedures in order for the standards to have force and effect in the nation's legal system" (KFSS, 2010, pp. 48–49).

[8]The main reason that Korea decided to adopt IFRS is that "by adopting IFRS, it responds to a worldwide trend toward the unification of accounting standards. And it hopes that international confidence in the transparency of accounting information in Korea will improve and that as a result, the 'Korea discount' will be cancelled out" (KFSS, 2010, p. 8; Lee et al., 2012, p. 310).

[9]Since the Financial Services Commission of Korea (FSCK) announced in 2007 a roadmap for the adoption of Korean equivalents of IFRS, it has been advocating a variety of measures, including "constructing and managing an IFRS homepage," "conducting local visits to companies that have not yet started work for the adoption of IFRS," "publishing the booklet 'Easy-to-Understand IFRS,'" and "holding nationwide tours of briefings on IFRS," in collaboration with related institutions such as KASB. For further details, please refer to Table 1 of Lee et al. (2012, p. 342).

financial accounting system, it also revised peripheral regulations, including the Commercial Law and the Corporate Tax Act (hereafter, the Korean Tax Act).

Given this background and status quo, the objective of this study is to introduce and analyze the 2010 revision to the Korean Tax Act (hereafter, the Revision). More specifically, this study aims to examine the Revision as it relates to the depreciation of property, plants, and equipment (PPEs) and the Definite Settlement of Accounts Approach, which has been considered by practitioners as the most problematic aspect of K-IFRS adoption.[10] The adoption by Korea has been evaluated as being in full compliance with IFRS (IFRS Foundation, 2013), and so that case study could offer valuable lessons as an antecedent to a major trend currently under way—namely, the international convergence of accounting standards. In addition, the Definite Settlement of Accounts Approach is an accounting system that has been adopted not only by Korea and Japan, but also by France, Germany, Italy, Portugal, and others (Suzuki, 2013, p. 229).

Moreover, Korean accounting practitioners point to one influential factor that could obstruct the smooth implementation and successful establishment of IFRS: the corporate tax burden stemming from the use of the Definite Settlement of Accounts Approach (KCCI, 2010b, p. 1). Therefore, in terms of examining the problems generated by IFRS adoption in terms of the Definite Settlement of Accounts Approach, we believe that this study contributes to the international literature by analyzing the measures taken by the Korean government, and their effects on accounting practices.

2 Arrangement of the main points of discussion, and clarification of the concepts

This section examines the main concepts inherent to this subject, to draw connections between the current study and previous research that has investigated the effects of IFRS adoption on the tax accounting systems of Japan and Korea.

[10]The Korea Chamber of Commerce & Industry (KCCI) carried out a survey of 300 listed companies; it was entitled "Survey of Enterprises' Opinions on the Direction of Revisions to the Corporate Tax Act in conjunction with the Re-editing of Accounting Standards" (July 2010). According to the survey results, 49.4% of the enterprises that responded voiced concerns that "after the IFRS adoption, both our corporation tax burden and the work required for adjustments for taxable income will increase," while 26.8% were worried that "the work required for adjustments for taxable income will increase." While 49.1% of the responding companies pointed to "tangible/intangible fixed assets" as the main item that would cause their corporate tax burden to increase, 65.2% identified "tangible/intangible fixed assets" as the item that would cause an increase in the work required for adjustments to taxable income (KCCI, 2010a, p. 1).

2.1 Discussion points, based on previous research

Common discussion points among research studies that analyze responses to IFRS adoption, at least in terms of tax accounting systems, typically touch upon whether or not the Definite Settlement of Accounts Approach should be maintained or abolished. These discussions can be divided into three categories of opinion, on the basis of the extent to which they advocate that the Definite Settlement of Accounts Approach be maintained, modified, or abolished.

The first opinion argues that the Definite Settlement of Accounts Approach should be maintained with minimal modifications, based on a rationale relating to its significance. For example, Kim and Lee (2008) argue that the Definite Settlement of Accounts Approach has an important role in reducing the supervisory and investigation-related expenses incurred in the course of administering the taxation system. Moreover, Sugita (2009) and Kawasaki (2011) each emphasize the important role played by the Definite Settlement of Accounts Approach in the accounting practices of SMEs, especially with respect to its cost–benefit contribution; they argue that the Definite Settlement of Accounts Approach should be maintained.

The second opinion argues that within the Definite Settlement of Accounts Approach, only the part relating to the Requirements for the Recognition of Expenses in Definite Settlement of Accounts, or *Sonkinkeiriyoken* (hereafter, the Requirements), need to be significantly revised or abolished, and that all other parts of the Definite Settlement of Accounts Approach should be retained. The basis for the argument is that unrealized profit or loss through fair value valuation, included in IFRS, is difficult to implement while maintaining the Requirements (Shinya Saito, 2010; Lee, 2010).

The third opinion is that the Definite Settlement of Accounts Approach should be abolished; those who hold this opinion argue for the complete application of the Adjustments for Taxable Income, or *Shinkokutyosei* (hereafter, taxable adjustments). For example, Yanagi (2011) highlights the reverse effects that the Definite Settlement of Accounts Approach has on business accounting (i.e., the reverse authority of tax accounting), and states that "the calculation structure for taxable income needs to be restructured to be an independently functioning accounting system based on the objectives and functions of the tax law" (p. 328). As a different rationale for this opinion, Lee (2007) points out that the increased use of fair value valuation by virtue of IFRS adoption would result in increased divergence between reported profits and taxable income. He proposes an investigation of the separation of financial accounting from tax accounting.

A review of the previous research confirms that a common discussion point with regard to the effects of IFRS adoption on the Japanese and Korean tax accounting systems is whether or not the Definite Settlement of Accounts Approach should be upheld. The rationale behind the arguments for upholding the Definite Settlement of Accounts Approach is that it has significance in existing accounting system and practices. On the other hand, the reasoning behind arguments for its modification or abolition is essentially that the divergence between the objectives and functions of financial accounting and tax accounting has widened, and deviations between actual and reported profits and taxable income will deepen.

Because of IFRS adoption, the informational role of financial accounting has become its main function, resulting in enhancements to its importance in matters of economic substance. Developments in the subject of depreciation accounting will be investigated later in this study, and so it is necessary to review the useful lives of PPEs and the appropriateness of the depreciation method, at least at each financial year-end. If expectations differ from previous estimates, the change(s) shall be accounted for as a change in an accounting estimate. In contrast, the objective of tax accounting is "to provide a calculation-based rationale for the allocation of 'fairness' relating to the activities of enterprises" (Fujii, 2007, p. 77), from the perspective of the impartiality of taxation as the "highest canon of tax law" (Urano, 1996, p. 218). Accordingly, since tax accounting places importance on the function of the coordination of interests, the useful lives of PPEs and the depreciation methods with respect to them should be registered with the tax authorities in advance, and frequent amendments based on managerial judgments should not be permitted (Narimichi, 2011, p. 161).

Owing to the increased divergence of the objectives and functions between financial accounting and tax accounting, the existing tax accounting system cannot respond to the consequences of IFRS adoption; therefore, measures by which to address the divergence are required. Since the scope of this study is limited, we focus on the debate generated by the divergence of the objectives and functions of the two accounting systems, and reserve the effects of valuation as a potential topic of future research.

2.2 Verification of the details and significance of the Definite Settlement of Accounts Approach

2.2.1 Details of the Definite Settlement of Accounts Approach

According to Takeda (1974, pp. 51–52), the Definite Settlement of Accounts Approach is based on the assumption that corporate profits are calculated in accordance with "standards of generally accepted accounting procedures"—a precondition of the ordinance on business accounting in the Commercial Code of Japan. Moreover, this means that taxable income is calculated by adding the adjustments—which are made in consideration of the regulations established to fulfill the independent objectives of the Corporate Tax Act of Japan (hereafter, Japanese Tax Act)—to report profits. From this perspective, Takeda (1974) states that the most important implication of the Definite Settlement of Accounts Approach is as follows: "the amount of profit determined in the Definite Settlement of Accounts is the basis for calculations of taxable income" (p. 52). Taking the same position, Urano (1996) argues that the Definite Settlement of Accounts Approach "is a framework providing the basis for the calculation of taxable income in [the] Definite Settlement of Accounts in business accounting" (p. 63).

Under the Definite Settlement of Accounts Approach, expenses or losses relating to internal decision-making within a company are allowed as deductible expenses only within the scope "recognized in [the] Definite Settlement of Accounts as deductible expenses" (Urano, 1996, p. 64).[11] Similarly, when more than one method is recognized as a generally accepted accounting procedure in estimating deductible expenses, it is "necessary to be also applied for the calculation of taxable income the method applied in the Definite Settlement of Accounts" (Takeda, 1974, p. 52). Therefore, the estimation method is limited by the accounting treatments used in the Definite Settlement of Accounts (i.e., the Requirements).

Based on this information, the Definite Settlement of Accounts Approach is understood in Japan as a requirement in business accounting for reckoning taxable income from the reported profits in the Definite Settlement of Accounts. Second, the Definite Settlement of Accounts Approach is understood as a requirement for calculating the amount recognized only as an expense or a loss in the Definite Settlement of Accounts, and listing them as deductible expenses. Based on these requirements, it can be understood that the total amount for inclusion under deductible expenses and the calculation method are limited to the amount recognized in (and the accounting method applied in) the Definite Settlement of Accounts, respectively.

On the other hand, in Korea, the Definite Settlement of Accounts Approach (*Hwakjungkyolsanjyui*)[12] has a requirement that allows the expenses from internal transactions decided within the corporation to be listed as deductible expenses, but only if they are recognized as expenses in the confirmed financial statements. The upper limit for reckoning deductible expenses is the amount recognized in the settlement of accounts (Kim, 2011, p. 124; Shin and Cheong, 2012, p. 319). A second point with respect to the Definite Settlement of Accounts Approach in Korea is that calculations of corporate taxable income are implemented based on the total net income as recognized in the settlement of accounts authorized by an internal decision-making body (Shin and Cheong, 2012, p. 319). A third point is that if multiple accounting-procedure methods were allowed, after conducting an investigation to determine whether a method chosen by practitioners is both appropriate and legal, the same method could be applied to the calculation of taxable income (Shin and Cheong, 2012, p. 320).

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[11] When the relevant "expenses in the Definite Settlement of Accounts exceed the limit for the requested deductible expenses as provided for in the particular provision in the Japanese Tax Act, the amount that exceeds the limit must be corrected on the tax return" (Takeda, 1974, p. 59).

[12] In Korea, the Definite Settlement of Accounts Approach functions as a tax accounting system as well. Several academics refer it as "the standard for the authorized settlement of accounts" (Kim, 2011, p. 124), or "the principle of the definite settlement of accounts" (Shin and Cheong, 2012, p. 318).

Therefore, although the terminology varies slightly, it can be understood that the basic frameworks of the systems inherent in the Definite Settlement of Accounts Approach are fundamentally identical between Korea and Japan, in terms of the following points: (1) taxable income is reckoned from the reported profit in the Definite Settlement of Accounts, (2) the adjustment items in the settlement of accounts, or *Kessantyoseijiko* (hereafter, Settlement Adjustment Items) are recognized as deductible expenses, as a precondition that they are recognized in the Definite Settlement of Accounts as expenses, and (3) the amount included in the deductible expenses, and the estimation method by which it is derived, will be limited by the use of the Requirements in being recognized as expenses for accounting purposes.

2.2.2 Significance of the Definite Settlement of Accounts Approach

Based on the literatures, the significance of the Definite Settlement of Accounts Approach stems from the following four points. First, in terms of government administration, the Definite Settlement of Accounts Approach facilitates the government's administration of its taxation system (Narimichi, 2011, p. 11) and provides stability in levying taxes (Nakamura and Narimatsu, 1992, p. 124). More specifically, it clarifies whether internally decided expenses are allowable as deductible expenses (Takeda, 2005, p. 44), and controls the discretionary behavior of managers who want to pay lower tax amounts. Moreover, the Definite Settlement of Accounts Approach establishes a framework for the appropriate reporting of tax declarations and payments, which can reduce tax investigation costs (Suzuki, 1996, p. 243).

Second, the Definite Settlement of Accounts Approach is economically efficient in terms of accounting practices. Specifically, "the calculation of surplus collection of capital invested in business activities" (Suzuki, 1996, p. 239) is similar in both financial accounting and tax accounting. Therefore, reckoning reported profits and taxable income in either form of accounting results in cost-savings, in terms of financial reporting or tax payments.

Third, the Definite Settlement of Accounts Approach is significant in terms of the legal system. The Commercial Code, which belongs to the domain of private law, and the Corporate Tax Act, which belongs to the domain of public law, "may have different legal qualities, but as they are applied to the same targets, the Commercial Code possesses the same fundamental legal characteristics as the Corporate Tax Act. [As a consequence], it is possible to elucidate the essential dependency relations between calculations of taxable income in the Corporate Tax Act and the settlement of accounts for the Commercial Code through the Definite Settlement of Accounts Approach" (Takeda, 2005, p. 43).

Fourth, the Definite Settlement of Accounts Approach is significant in terms of economic policy. Specifically, by requiring that internally decided expenses be recognized as expenses for accounting purposes, it is possible to encourage companies to retain surplus funds as internal reserves (Nakamura and Narimatsu, 1992, p. 124).

2.3 Tax adjustments: concepts and discussions

2.3.1 The concept of tax adjustments

What are tax adjustments? When the taxable income of a company is inductively calculated from its corporate profits (Takeda, 2005, p. 36), "it refers to the adjustment of items that are handled differently in procedures for corporate profits and taxable income" (Nakamura and Narimatsu, 1992, p. 126); this is a result of the different objectives of business accounting and tax accounting. Moreover, it is possible to somewhat categorize tax adjustments as adjustments for the settlement of accounts, or *Kessantyosei* (hereafter, settlement adjustments), which are not admitted unless certain accounting treatments are not implemented in the Definite Settlement of Accounts, or as taxable adjustments, in which an accounting treatment is not required within the Definite Settlement of Accounts and where adjustments can be made on the tax return (Narimichi, 2011, p. 18).

First, settlement adjustment items are things that can be included in the deductible expenses amount, but only if they are recognized in the Definite Settlement of Accounts. Therefore, such items are already included in the Definite Settlement of Accounts, which means that they do not need to be adjusted in order to reckon taxable income. Only when they exceed the limit amounts for deductible expenses, they are adjusted on the tax return. The items correspond to the transactions made through "internal decision-making" (Takeda, 1974, p. 59), such as depreciations on assets and allowance provisions for doubtful accounts.

On the other hand, taxable adjustments items are allowed as exclusions from gross revenue and inclusions in expenses by being further amended and adjusted on the tax return, regardless of which accounting treatments are followed in the Definite Settlement of Accounts. Moreover, taxable adjustments items can be divided into two categories: one comprises required taxable adjustments items that are enforced by the tax authorities (such as items excluded from deductible expenses, including losses on the valuation of assets, and social expenses), and the other comprises voluntarily taxable adjustments items that are not enforced (such as dividends received, which are excluded from gross revenues, and designated contributions, which are included in expenses).

2.3.2 A discussion on tax adjustments for depreciation expenses

To address the consequences of the adoption of K-IFRS with regard to corporate tax amounts, preparers and practitioners have strongly expressed the need to change the depreciation expense from a settlement adjustment item to a taxable adjustment item.[13] The rationale behind this request is that they anticipate that the recognized expenses of depreciation under K-IFRS will be lower than

[13] Accounting preparers and practitioners in Japan have also indicated their strong preference for allowing depreciation expenses in taxable adjustments. Please refer to Nakata (2010, p. 45).

those of depreciation under K-GAAP. Consequently, they are concerned that the depreciation expenses included in deductible expenses will decrease in the course of reckoning taxable income[14] (KLCA, 2010; KCCI, 2010b).

Let us consider some examples, to obtain a better understanding of these practitioners' request. Assume that the Korean Tax Act sets the allowable depreciation limit at KRW1.7 million and that in the Definite Settlement of Accounts, the depreciation expenses were KRW2 million. In this case, up to KRW1.7 million of depreciation expenses would be included in deductible expenses; the depreciation of KRW300,000—the portion in excess of the limit—is not included in the deductible expenses through taxable adjustments, but is carried over to the next financial year.

Now, let us assume that the permitted depreciation limit is KRW1.7 million; however, the recognized amount of depreciation expenses is only KRW1.5 million. In this case, the recognized amount of KRW1.5 million is allowed as a deductible expense. However, KRW200,000—the amount of under-depreciation (i.e., the gap between the recognized amount and allowable limit for depreciation)—is not carried over to the next financial year.

Therefore, if a company recognizes a depreciation expenses amount that is lower than the allowable limit for depreciation in the Definite Settlement of Accounts, it has been understood that management decided to relinquish the advantage of tax treatment, based on managerial judgment. However, the same interpretation cannot be applied to a situation where the total amount of recognized depreciation is lower than the allowable limit due to changes in accounting standards. Consequently, the balance due of depreciation expenses that used to be included in deductible expenses under K-GAAP would result in an additional corporate tax burden.

On the other hand, if a depreciation expense were one of taxable adjustments items, regardless of the amount of depreciation expense recognized in the Definite Settlement of Accounts, an amount up to the allowable depreciation limit would be allowed through tax return reports. For example, let us assume that the permitted depreciation limit is KRW1.7 million, and that the recognized expenses in the Definite Settlement of Accounts total KRW1.5 million. In this example, regardless of the amount of recognized expenses, taxable adjustments would be implemented up to the permitted depreciation limit of KRW1.7 million. Therefore, if depreciation becomes one of the taxable adjustment items, adopters will avoid any additional corporate tax costs that stem from K-IFRS adoption. Accordingly, it is considered that practitioners want to change depreciation expenses to taxable adjustments items in order to take advantage of the benefits offered by the taxation system, and in conjunction with responding to changes to the accounting standards.

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[14] Please refer to Section 3 for the grounds of the argument that a decrease in depreciation will cause an increase in the corporate tax burden.

3 Settlement adjustments that presuppose the Requirements

In this section, we initially examine and define depreciation accounting; subsequently, we analyze practitioners' requests relating to tax adjustments for depreciation.

3.1 The importance of depreciation in tax accounting: Its position as an examination subject

When we focus on depreciation accounting while investigating the effects of IFRS adoption on the tax accounting system used, as well as the responses to the effects, the following four implications arise.

The first is that we can verify the significant impacts of IFRS adoption on PPEs accounting. Although it has been pointed out that the influence of fair value valuation on PPEs accounting is insignificant compared to that of financial instruments accounting,[15] it can be said that PPEs accounting is affected significantly by a principles-based approach, for the following reasons. The useful life, salvage value, and the depreciation method must be determined based on the judgments and estimates of managements, and these factors need to be re-examined at each financial year-end, at least.

Second, within the settlement adjustment items,[16] depreciation is one of the "deductible expense items that have a major influence on reckoning the amount of taxable income" (Nakata, 1979, p. 143).

Third, depreciation accounting analysis leads to an understanding of the Requirements' pros and cons. PPEs depreciation is required by accounting standards; however, "the choice of [depreciation methods] is entrusted to managements. […] therefore, depreciation expenses tend to be changed easily through the management' discretionary choices of subject PPEs" (Okabe, 1992, pp. 202–203). Consequently, depreciation accounting is considered useful in examining the significance of the Requirements—for example, to clarify the extent of deductible expenses.

Finally, depreciation accounting is the item that practitioners most frequently cite as a concern, at least with respect to the impact of K-IFRS adoption on tax accounting. Therefore, it is believed that an examination of

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[15] For example, Yamada (2012, p. 71) points out that "in the IASB, up to now there have not been any discussions on the measurement of the fair value of tangible fixed assets and other assets.... [Besides] the revaluation model which is the [allowed] accounting procedure after the initial acquisition… is different from the fair-value measurement that applies to financial instruments."

[16] The settlement adjustment items correspond to depreciation of deferred assets, losses on the valuation of assets owing to disasters, provisions of allowances for doubtful accounts, advanced depreciation, special depreciation, surcharge depreciation, and provisions for various reserve funds (Narimichi, 2011, p. 18).

depreciation accounting would elucidate not only the effects of IFRS on the tax accounting system and accounting practices, but also the responses to these effects.

3.2 An examination of the requests by practitioners relating to tax adjustments for depreciation

In documents submitted by the Korea Chamber of Commerce & Industry (KCCI) and the Korea Listed Companies Association (KLCA) to the Ministry of Strategy and Finance of Korea (MOSF), the first proposal was to include depreciation expenses in the taxable adjustments items. The practitioners argued that the recognized amount of depreciation would be reduced by applying K-IFRS, which would lead to a decrease in the total depreciation expenses that could be included in deductible expenses—and, as a consequence, the companies would face a higher tax burden. According to KCCI (2010b, pp. 2–5), the main reason for a decrease in the amount of depreciation expenses is the change in the depreciation method, from the declining-balance method to the straight-line method. Besides the change in methods, KLCA (2010, pp. 3–5) points out the extension of the useful lives of PPEs as another reason. Practical matters relating to depreciation following K-IFRS adoption will be examined below.

3.2.1 Impacts of IFRS adoption on the choice of depreciation methods

KCCI (2010b, pp. 2–5) addresses problems relating to the extra tax burden imposed by changes to the depreciation method. Prior to K-IFRS adoption, K-GAAP allowed practitioners to determine a method and a useful life in accordance with managerial judgment; therefore, many Korean corporations chose the declining-balance method, to maintain continuous business investment policy and tax payment policy. On the other hand, K-IFRS requires that corporations decide upon and apply a depreciation method that reflects "the pattern in which the asset's future economic benefits are expected to be consumed by the entity" (K-IFRS 1016, para. 60), and that the method should be revised each financial year.

Consequently, an increasing number of companies have changed from the declining-balance method to the straight-line method, and even more companies are expected to make this change in the future. In the majority of cases, companies changing to the straight-line method will reduce their depreciation expenses for a certain period. Since the depreciation is a settlement adjustments item, its recognized amount in the Definite Settlement of Accounts determines the total depreciation expenses to be included in deductible expenses. Therefore, the concern is that a decrease in the recognized amount of depreciation expenses will lead to an increased corporate tax burden. Accordingly, practitioners often request permission to include depreciation expenses among the taxable adjustment items, to mitigate the increased tax burden.

Based on these points, we can develop two questions for consideration. The first question is, will practitioners actually be compelled to choose the straight-line method, following K-IFRS adoption? In other words, it is questionable whether a cause-and-effect relationship exists between these two events. Oh (2010, p. 120) points out the difficulty inherent to verifying the rapid decrease in the consumption pattern of the future economic benefits of assets, and cites it as the primary explanatory factor behind the increased number of companies changing their depreciation method. In other words, in terms of the consumption pattern of the future economic benefits of assets, it is easier to explain the straight-line method as "a fiction in which in each financial period, the same physical utility is lost" (Shizuki Saito, 2010, p. 247). Therefore, it is thought that practitioners will decide to make the change.

Table 2 shows the results of using the depreciation methods chosen by corporations, early adopters of K-IFRS. Since the Korean Tax Act only permits the straight-line method with regard to buildings, let us focus on other assets. The straight-line method for handling "machinery and equipment" and "other tangible assets (vehicles, delivery equipment, etc.)" increased from 62.5% to 94.2% and from 59.6% to 90.4%, respectively, after adopting K-IFRS voluntarily in 2009 and 2010. It is clear that the straight-line method has become the dominant method for handling depreciation. From the standpoint of Oh (2010), it could be interpreted that changes in accounting practices are the results of practitioners' intention to reduce the risks and costs associated with explaining and verifying whether or not the chosen depreciation method is appropriate.

3.2.2 Impact of a change in depreciation method on corporate tax burden

The second question relates to the aforementioned requests by practitioners: will a change in depreciation methods cause recognized depreciation expenses to decrease, and therefore increase companies' corporate tax burdens? Depreciation in business accounting entails the use of an accounting procedure in which "the acquisition costs of PPEs are allocated across the useful life of the asset as an expense through a constant, systematic method" (Sakurai, 2012, p. 176). This means that the total amounts of depreciation recognized during the useful life of the asset are equivalent to the acquisition costs of the assets, regardless of the method applied. Consequently, a company's total tax payment will not increase or decrease in line with the depreciation method that it applies during an asset's use period.[17]

[17] However, the total amount of tax paid may differ for deficit-ridden companies. Specifically, "in order for tax to be levied only when taxable income is in surplus, if a company reduces its depreciation expenses when it is in deficit and increases depreciation expenses in the financial year when it expects to report a surplus, the total amounts of taxes it pays will be reduced" (Okabe, 1992, p. 207).

Table 2. Depreciation methods chosen by early adopters of K-IFRS (N = 52).*

	Depreciation method	Before adopting K-IFRS		After adopting K-IFRS	
		Numbers of companies	Ratio (%)	Numbers of companies	Ratio (%)
Building	Straight-line	52	100.0	52	100.0
	Declining-balance	0	0.0	0	0.0
Machinery & equipment	Straight-line	32	61.5	49	94.2
	Declining-balance	20	38.5	3	5.8
Etc.	Straight-line	31	59.6	47	90.4
	Declining-balance	21**	40.4	5**	9.6

Note: *Companies adopted K-IFRS voluntarily in 2009 and 2010. **Includes production output method.
Source: Prepared by author, based on annual reports of companies studied.

However, under the Definite Settlement of Accounts Approach, in the event that a company with a higher-investment strategy for new business changes from the straight-line method to the declining-balance method for multiple PPEs, the aggregate total of depreciation for inclusion in the deductible expenses will decrease. As a result, the amount of corporate tax will increase. When depreciation is limited to a single PPE, the aggregate total will remain unchanged. On the other hand, considering the self-financing function of depreciation, when it is repeatedly collected in the cycle of investment across multiple PPEs and their depreciation, the meaning of "depreciation" can differ. In other words, after the initial period of capital investment, "in the event that depreciation capital is continuously reinvested in the same category of equipment [with the same useful life], the annual capacity of the equipment [also, the number of units] will ultimately be worth many times more than in the initial period" (Takatera, 1971, p. 150). This is known as the Lohmann–Ruchti Effekt (Takatera, 1971, p. 146; see Appendix for further explanations).

Moreover, it can be understood that companies that adopt this kind of business investment strategy—which prioritizes the self-financing function of depreciation—may have benefited from the large impact of "government zero interest financing”[18] (Takatera, 1971, p. 54) with the declining-balance method in the initial period of capital investment. Therefore, it is assumed that practitioners have expressed their concerns about losing after adoption the benefits from which they fully benefited under K-GAAP.

3.3.3 Increases in corporate tax burden due to changes in an asset’s useful life

Another reason to question practitioners’ claims about increased corporate tax burden is the impact of an extension of the useful life of PPEs. Under K-GAAP, a useful life was determined in accordance with the economic substance of an asset, which is practically the same as that under K-IFRS. One of the key differences in terms of accounting standards is that the useful life should be reviewed each financial year (Choi and Choi, 2011, p. 430). The other is that K-GAAP allows practitioners to determine a useful life that corresponds with the statutory useful life (Choi and Choi, 2011, p. 424).

The objectives of the statutory useful life provision in the Korean Tax Act include promoting the early recognition of deductible expenses and capital investment (Oh, 2010, p. 124) and facilitating the affairs of tax authorities (Choi and Choi, 2011, p. 431). That means the provision prescribes a relatively shorter useful life than that dictated by the asset’s economic substance. Therefore, for many of the companies that have determined their assets’ useful lives in accordance with the Korean Tax Act, an implication of K-IFRS adoption is that it will extend those useful lives. Consequently, the annual rate of depreciation and recognized depreciation expenses will decrease—and therefore, companies’ corporate tax burdens will increase.

A questionnaire survey[19] was undertaken by Nikkei BP (2010, pp. 32–33) in France[20]—a country that, as is the case in Korea, permits companies to use the statutory useful life for both financial accounting and tax accounting with respect to PPEs. In the survey, to the question “Which factor has the greatest impact on net profits?”, 20.5% of the respondents answered with the item “depreciation of PPEs”; they stated the following reason for choosing that item: “[it] changes the length of assets’ useful lives.” To the next question, “How

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[18] The “government zero-interest financing” effect is an economic effect that can be achieved through the early recognition of depreciation expenses, as the “temporary postponement of tax payments” that is generated in correspondence with this early recognition is equivalent to the company indirectly receiving “zero-interest financing ” from the government (Takatera, 1971, p. 45).

[19] This questionnaire survey was implemented jointly by Nikkei Business and Avantia GP. It was conducted among companies listed on the Euronext market (540 companies, excluding funds; 116 companies provided responses) from April to May 2010 on “The Impact of the Adoption of IFRS, and Measures Taken in Response” (Nikkei BP, 2010, p. 32–33).

[20] Before IFRS adoption, French companies were allowed to use the statutory useful lives for financial accounting and tax accounting. Further, discretion is permitted with regard to useful lives within a range of plus or minus 20% of the statutory useful lives (Inokuma, 2009, p. 99).

many of your assets' useful lives changed?", 19.6% of respondents said that the useful lives of the "majority of assets" had changed, whereas 28.6% said that "some" of the assets' useful lives had changed.

To the best of our knowledge, since a similar survey has not been conducted of Korean companies, it is difficult to understand the overall trend in Korea. However, from the 2011 financial statements of POSCO—a major Korean steel manufacturer that changed the useful lives of its main machinery and equipment in the Steel Division from 8 years to 15 years—we can determine the effect of extending the length of the useful life. As a result of that change, its depreciation expenses decreased by KRW1.2272 trillion (USD1.1 billion dollars), which resulted in an increase in corporate tax of KRW297.0 billion (USD267.3 million dollars) via the simply applied tax rate (24.2%). To alleviate the effect of such an increased tax burden following adoption—or at least to maintain the same level of corporate tax under K-GAAP—KLCA (2010) and KCCI (2010b) requested that depreciation expenses be included in taxable adjustments.

4 The response of the Korean corporate tax system to the adoption of K-IFRS

Details of revisions to the Korean Tax Act that were implemented in conjunction with the adoption of K-IFRS—particularly those relating to depreciation expenses—are examined in this section. This section also considers the effects of these revisions on accounting practices.

4.1 Direction taken by revisions to the Korean Tax Act, and details thereof

The Korean government claimed that it had revised the Korean Tax Act so as to maintain settlement adjustments, as well as to alleviate the corporate tax burden placed on companies following K-IFRS adoption (MOSF, 2010, pp. 99–101). According to the related policy, the special exemption outlined below was established to maintain depreciation expenses as a settlement adjustment item and to mitigate the increased tax burden.[21]

If the totals calculated for the following categories exceed the depreciation expenses recognized in the Definite Settlement of Accounts applied by virtue of K-IFRS, the extent of the difference can be included in deductible expenses through taxable adjustments (Korean Tax Act, Article 23).

1. With regard to PPEs acquired on or before December 31, 2013, an equivalent amount shall be included in deductible expenses under the previous

[21] Please refer to Kang (2012) for details on their application to accounting practices.

tax law, within the amount of depreciation expenses recognized through the method used prior to the adoption,

2. With regard to PPEs acquired on or after January 1, 2014, an equivalent amount shall be calculated by the application of the statutory useful life, as provided for by the Korean Tax Act.[22]

When considering the details of the special exemption, it is possible to say that the revision made in response to the impact of K-IFRS adoption bears the following two characteristics. The first characteristic is that the response was addressed from the perspective of accounting systems—that is, by allowing depreciation expenses to be comprise a taxable adjustment item, the authorities were able to counter the inadequacies of the existing system that could not cope with changes to the accounting standards. As a result, K-IFRS adopters were allowed to apply a depreciation method different from that applied in the Definite Settlement of Accounts for the calculation of taxable income. Takeda (1974, p. 52) points out that "an important meaning of the Definite Settlement of Accounts Approach is that the method applied for the Definite Settlement of Accounts must also be applied for the calculation the taxable income." From his viewpoint, it is possible to indicate that the role of the Definite Settlement of Accounts Approach is scaled back to the extent of depreciation accounting. The second characteristic is the implementation of emergency, shelter-type special measures. Specifically, the special measure would provide a period that would help absorb the impact on taxes payable by K-IFRS adopters as a result of extending the useful lives of assets and changing depreciation methods.

After investigating K-IFRS practices as per the Revision, the MOSF revised statutory useful lives in terms of business categories, "so that useful lives in corporate accounting can be properly reflected in statutory useful lives" (MOSF, 2010); this constitutes the main reason for the revision to the Korean Tax Act in February 2013. Specifically, the revision entailed adding four sections to "statutory useful lives" (from five to nine) and coordinating more precisely the 11 business categories of useful lives. The 2013 revision was understood to address the coordination of statutory useful lives in business categories in which there were major differences between the useful lives and statutory useful lives. From the standpoint that the 2010 Revision provided certain periods during which Korean authorities could stipulate statutory useful lives that more closely reflected economic realities, the special measure can be evaluated as rational.

Next is the effect due to changes in depreciation methods. Previous research on tax burdens stemming from the adoption of K-IFRS includes that of Choi et al. (2012), who examined a bank case to analyze how the change in accounting standards from K-GAAP to K-IFRS effected corporate tax adjustments and

[22] However, in the event that there is a major difference between the useful life used in business accounting and the useful life provided for by the Korean Tax Act, the latter shall be adjusted to the former (MSOF, 2010, p. 100).

taxable income. They conclude that “since depreciation costs were substantively converted into a voluntary reporting adjustment item [by the Revision], the issue of the increase in taxable income [and consequently the tax burden] due to changes in accounting standards is considered to have been eradicated” (p. 356).

From the above, it is considered that the effects of changes to an asset’s useful life and to the depreciation method used on corporate tax occur in the short to medium term. Since Choi et al. (2012) analyzed only one bank case, it is difficult to generalize their findings to other companies. However, we can assume that the Revision’s objective of mitigating tax burden otherwise caused by changes in accounting standards can be considered to have been more or less achieved. Moreover, the number of companies that had adopted K-IFRS by the end of 2012 had increased to 3,156 (of which 1,479 were voluntary adopters), from 2,851 at the end of 2011 (of which 1,142 were voluntary adopters) (KFSS, 2013, p. 2). From these facts, it can be interpreted that the policy objective, while aiming to provide a smooth shift to K-IFRS by coordinating peripheral systems, has largely been achieved; the Revision can also be assessed as rational.

4.2 Impacts of revisions to the Korean Tax Act on accounting practices

Table 3 shows the trend vis-à-vis depreciation methods for PPEs, as chosen by companies listed on the Korean stock exchange and as of the closing date for the settlement of accounts of December 31, 2011. The data in the table demonstrate that the percentage of companies selecting the declining-balance method for machinery and equipment declined sharply from 52.1% to 1.9%. Similarly, there was a significant drop in the proportion of companies selecting the declining-balance method for other fixed assets (vehicles and delivery equipment, etc.), from 52.1% to 4.0%. As a result, the percentages of companies choosing the straight-line method for machinery and equipment and for other fixed assets were 98.1% and 96.0%, respectively.

The trend among these companies indicates a convergence to the straight-line method as their depreciation method; this trend is more distinguishable than that in Table 2 (the trend among early adopters). To the best of my knowledge, no empirical evidence has been obtained as to why the depreciation method has converged with the straight-line method.[23] Consequently, we attempt to infer the cause of this convergence phenomenon through a discussion based on the framework of Suzuki (2013). Suzuki (2013) limits interested parties to shareholders, tax authorities, and managers, and analyzes from the perspective

[23] Even in the Japan–Korea Accounting Research Forum (Keimyung University, Daegu, Korea) that was held as part of the Re-Inventing Japan Project funded by Kyoto University, the participants discussed the causes, but no clear explanation was agreed upon among the Korean academics.

Table 3. Depreciation methods chosen by Korean listed companies (Dec. 2011).*

	Depreciation method	K-GAAP		K-IFRS	
		Numbers of companies	Ratio (%)	Numbers of companies	Ratio (%)
Building	Straight-line	676	97.0	695	100.0
	Declining-balance	21**	3.0	0	0.0
Machinery & equipment	Straight-line	324	47.9	668	98.1
	Declining-balance	353***	52.1	13	1.9
Etc.	Straight-line	335	47.9	672	96.0
	Declining-balance	365****	52.1	28*****	4.0

Notes: *Target 700 Korean Listed Companies (within 786 companies, 86 omitted because of insufficient information); **All companies applied both the straight-line method and declining-balance method; ***37 companies applied both methods; ****31 companies applied both methods, and one company applied both the declining-balance method and the production output method; *****One company applied both methods, and three companies applied the production output method.
Source: Prepared by author, based on annual reports of each company.

of agency cost the factors behind the continued existence of the Definite Settlement of Accounts Approach.

That is to say, under the premise that the tax-payment costs of companies—and the tax-collection and political costs of the tax authorities—do not exist, Suzuki (2013) supposes that the Requirements are excluded. Therefore, companies are permitted to apply the declining-balance method to financial accounting and the straight-line method to tax accounting. As a result, in the initial period of use of the fixed asset, compared to cases where the straight-line method is applied for taxation purposes, corporate income tax will decrease. Consequently, corporate value will increase, and shareholder benefits will too. The effect does not decrease for managers either, as it is not the case that reported profits will decrease. In addition, the effect does not decrease for the tax authorities, as taxable income is calculated within the framework of generally accepted accounting procedures (Suzuki, 2013, p. 250).

With regards to this, in the event that the various aforementioned costs do exist, companies will bear tax-payment costs related to the burden of double counting, if they choose different methods for financial accounting and tax accounting. Further, as depreciation expenses within calculations of taxable income are not audited, there will be an increase in the monitoring costs required for the tax authorities to verify that these are appropriate. It will also push up the costs incurred by companies, as they will need to deal with increased tax inspections. Based on this discussion, Suzuki (2013) concludes that the Definite Settlement of Accounts Approach is approved of and induced by stakeholders as a mechanism by which to reduce these costs (Suzuki, 2013, pp. 250–251).

What can be inferred from the analysis of Suzuki (2013) is that, among the various costs that companies may need to bear upon applying a different method of depreciation, the only costs borne by Korean companies are tax-payment costs, in the form of a double-counting burden related to the Revision. Many Korean practitioners have pointed to the risk inherent in switching to K-IFRS, as profits may decrease after adopting K-IFRS and, as a result, corporate value may decline (KCCI, 2010b; KLCA, 2010). Because the Revision mitigates the Requirements, Korean companies need no longer worry about an increase in corporate income tax, nor in costs other than tax-payment costs. With regards to Korean companies—which want to minimize transition risk—it is anticipated that they might consider that the tax-payment costs in question could be mitigated by benefits in the form of a reduction in transition risk. Therefore, it is believed that they will apply the straight-line method, which will have comparatively little effect on their profits.

5 Conclusions

This study investigated the effects of IFRS adoption on tax accounting systems, with special reference to Korea's 2010 Revision. Specifically, we discussed the inclusion of the depreciation expenses of PPEs in taxable adjustments items and analyzed the points therein. Subsequently, we analyzed the details of the Revision and its effects on accounting practices. Through this analysis, we ascertained how Korea responded to the effects of IFRS adoption on its relevant peripheral regulations, and what effects those responses had on IFRS practices. The most important suggestion that can be extrapolated from the analysis is that there is a need for a system-based response that will induce the smooth implementation and successful rollout of IFRS, and concurrently maintain the significance of country-specific peripheral systems.

The special exemption measures implemented by the Korean government comprise a permanent measure and a transitional measure. The former is the measure that corresponds to the extension of useful lives more specifically, permitting taxable adjustments to PPEs acquired on or after January 1, 2014 will mitigate any increased tax burden caused by extending PPEs' useful lives. On the other hand, the latter measure—which responds to the change in depreciation method—is transitional, since it sets the application limitation only to PPEs acquired on or before December 31, 2013. According to the latter measure, the intention to maintain the restraints of the depreciation method by way of the Definite Settlement of Accounts Approach is confirmed.

The measures can be assessed in terms of two points. One is that although the special exemption is a transitional measure, it would mitigate an increase in tax burdens by allowing items pertaining to companies' internal decisions to be included among taxable adjustments items. Consequently, major Korean companies are able to maintain their competitiveness and smoothly implement IFRS adoption. Another point is that by retaining the constraints of the depreciation method by way of the Definite Settlement of Accounts Approach, the drawbacks of that Approach are minimized. Based on the trend vis-à-vis the depreciation methods chosen by practitioners, it is apparent that removing taxation-related constraints makes it easier to "change the depreciation method [which is considered]… to be one of the typical examples of managers' discretionary behavior" (Okabe, 1992, p. 217). Therefore, practitioners can apply various methods in their financial accounting and tax accounting as pragmatism dictates, which could lead to a scenario in which the Definite Settlement of Accounts Approach diminishes its significance: it helps clarify depreciation as deductible expenses, control the discretionary behavior of managements in bringing about tax savings, and create incentives to retain surplus funds as internal reserves.

As explained in Section 1, in Japan, the fundamental strategy with regard to IFRS pertains to IFRS setting and development. On the other hand, that strategy also looks to maintain an accounting system that aligns well with the special features of the Japanese economy (e.g., the use of the Definite Settlement of Accounts Approach). In terms of relevant peripheral systems, analysis of the Korean case serves as an important reference for the situation in Japan: it is necessary to understand that the debate on the Requirements "will not be about selecting one of two choices—namely, whether the Requirements should be maintained or abolished—but rather on to the extent of modifying them" (Sakamoto, 2010, p. 118).

The considerations raised in this study are based on an analysis of the significance of the Requirements. However, as indicated by Shinya Saito (2010), it is also essential that we consider the social costs of the Requirements. Given their negative aspects, many academics have argued for their significant easing, or outright abolition. Therefore, we will conduct in future research an examination of the social costs that relate to the maintenance of the Requirements.

Appendix

An investigation of the relationship between the Lohmann–Ruchti Effekt and corporate income tax

The first request in the proposals that KCCI submitted to MOSF was a change to the voluntary reporting adjustment item for the depreciation cost of fixed assets (KCCI, 2010b). The main details of this are as follows. It was predicted that there would be a rapid increase in the number of companies that, upon adopting K-IFRS, would change their depreciation method from the declining-balance method to the straight-line method. As a result, it was believed that their corporate tax burden would increase, due to a decrease in depreciation cost in the initial period in which PPEs use started. Further, in the case of companies that conducted capital investments each year, it was claimed that the increase in tax liability due to the change to the depreciation method would not be temporary, but permanent. Below, based on a number of assumptions, a simplified example of the relationship between the Lohmann–Ruchti Effekt and corporate tax is provided, with reference to KCCI (2010b, pp. 3–5) and Takatera (1971, Ch. 9).

i. Company K has a business model of reinvestment, according to which it continuously procures equipment from “depreciation capital” (Takatera, 1971, p. 143) that is collected as the value of depreciation through its sales of products.
ii. At the start of 2012, it invests KRW1 billion and buys a tangible fixed asset. The asset has a useful life of five years and will be scrapped thereafter.
iii. The company does not consider extending the useful life through reinvestment. The asset’s residual value is zero.
iv. Under K-GAAP, the declining-balance method is applied in financial and tax accounting.
v. After adopting K-IFRS, while the straight-line method will be applied in financial accounting, the declining-balance method will be applied in tax accounting.

Table A-1 shows depreciation costs using the declining-balance method at the end of each fiscal year, while Table A-2 shows depreciation costs using the straight-line method. The amount of reinvestment from fiscal 2013 to fiscal 2016 will be the total amount from the sum of the amount of depreciation in the preceding fiscal year for the initial period investment amount and the amount of depreciation for the reinvestment amount. For example, the amount of reinvestment in fiscal 2014 is a total of KRW902 million, which is the sum of KRW248 million in depreciation costs for the undepreciated balance, KRW203 million in depreciation costs for the reinvestment amount in fiscal 2013, and KRW451 million

Table A-1. Depreciation cost with reclining-balance method (millions of KRW).

		2012	2013	2014	2015	2016
Initial period · reinvestment amount		**1,000**	**451**	**902**	**1,445**	**2,171**
Depreciation cost	With regards to initial period investment	451	248	136	75	91
	With regards to depreciation capital		203	407	652	979
	Total (1)	451	451	543	726	1,070

Table A-2. Depreciation cost with straight-line method (millions of KRW).

		2012	2013	2014	2015	2016
Initial period · reinvestment amount		**1,000**	**200**	**440**	**728**	**1,074**
Depreciation cost	With regards to initial period investment	200	200	200	200	200
	With regards to depreciation capital		40	88	146	215
	Total (2)	200	240	288	346	415

Table A-3. Amount of additional corporate tax (millions of KRW).

	2012	2013	2014	2015	2016	Total
Tax-base increase amount ((1) – (2))	251	211	255	381	655	1,753
Additional amount of corporate tax*	60.1	51.1	61.7	92.2	158.5	423.6

Note: *Applied tax rate (24.2%) = corporate tax rate (22%) + local tax rate (corporate tax rate × 10%).

in depreciation costs for fiscal 2012. What can be confirmed by comparing Tables A-1 and A-2 is that there is a remarkable difference in the amounts of depreciation capital in each fiscal year, based on the depreciation method applied (e.g., a difference of KRW655 million in fiscal 2016).

Table A-3 shows the amount of increase in taxable income due to the change in depreciation method, and the resulting corporate tax amount. The amount of increase in taxable income is calculated as the difference between (1) the total amount of depreciation costs after applying the declining-balance method and (2) the total amount of depreciation costs after applying the straight-line method. The corporate tax amount is calculated by multiplying the amount of increase in taxable income by the tax rate (24.2%).

What can be confirmed from Table A-3 is that, for a company that adopts a business model of continuously investing “depreciation capital” in the same category of equipment, there is a remarkable difference in the amount of corporate tax it will need to pay on account of its chosen depreciation method. Furthermore, this difference becomes fixed, as KCCI (2010b) insists. From the above investigation, the relationship between the Lohmann–Ruchti Effekt and corporate income tax is confirmed.

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