Voluntary Choice of Accounting Standards Under Competing Tax and Capital Market Incentives: Evidence from Sweden

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Abstract

In 2014, all Swedish private firms (legal entities) below a certain size threshold were required to choose between a capital markets-oriented reporting standard (K3) based on IFRS for SMEs (2009 version) and a simplified reporting standard designed to minimize tax-accounting differences (K2). Using this shock to the reporting environment, we study firms' reporting choices in the context of the tradeoffs between the tax and capital market incentives, and the financial reporting consequences of those choices. We provide direct evidence of the interplay between tax and capital market considerations in firm-level reporting and highlight the importance of external reporting for firms with intangible assets. However, we also show that many firms that voluntarily chose K3 did not exhibit any relative improvements in their financial reporting outcomes, raising questions about such firms' real reporting incentives and the signaling value of voluntary K3 adoption.

***Keywords*:** private firms; tax incentives, capital market incentives, IFRS for SMEs; voluntary adoption; mandatory adoption; financial reporting properties.

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1. Introduction

In 2014, all Swedish private firms (legal entities) below a certain size threshold were required to choose between a capital market-oriented reporting standard (K3), based on IFRS for SMEs (2009 version), and a simplified reporting standard designed to minimize tax-accounting differences (K2). A unique feature of this setting is that due to tax-accounting links in certain accounting areas, the choice to report under K3 may also affect, and usually increase, firms' tax burden. Using this shock to the reporting environment, we study firms' reporting choices in the context of the tradeoffs between the tax and capital market incentives.

Understanding how private firms make their reporting choices and how the capital market and tax incentives interplay in these choices is important to regulators in developing new reporting requirements, and to investors evaluating the economic relevance of reported figures. Prior literature typically investigates IFRS adoption choices in public firms (Christensen, Lee, Walker, & Zeng, 2015; Daske et al., 2013). In such settings, firms adopting a new reporting standard may incur additional administrative costs, but the new reporting approach would not affect tax outcomes. These studies show that the strongest adoption effects are observed for firms that are categorized as having incentives to improve their reporting quality (Daske et al., 2013), or for voluntary adopters that are expected to have high quality adoption incentives (Christensen et al., 2015). However, it is not clear that these insights can be automatically transferred to a private firm setting, where firms face a different stakeholder structure, and where tax-related reporting incentives play a relatively more important role (Coppens and Peek, 2005; Burghstahler, Hail, and Leuz, 2006). Our knowledge about private firms' reporting choices is scarce, with some exceptions of IFRS adoption choice analysis in a German private firm setting (Bassemir, 2018; Bassemir & Novotny-Farkas, 2018) and financial reporting choice investigations in a U.S. private firm setting (Lisowsky and Minnis, 2020). However, these studies investigate reporting choices that do not have tax implications. Thus, the potential

tradeoff between the tax and capital market incentives among private firms that face a reporting standard choice is still not well understood. That is, would private firms choose a capital market oriented standard if such choice would increase their tax burden? What are the capital market related outcomes related to this choice? Do all firms that choose a capital market-related reporting standard also experience the benefits of such choice? This study aims to shed light on these questions.

We start with an overview of the Swedish regulatory setting and the changes embedded in the 2014 regulatory overhaul. We highlight the following characteristics of this setting. First, upon the regulatory change in 2014, legal entities that are classified as small firms under the Swedish (and EU) regulatory framework, could choose whether to adopt the closely tax-linked K2, or the more capital markets oriented K3 standard. For large legal entities as well as groups preparing consolidated financial statements, the adoption of K3 (modified version for consolidated accounts, see Hellman et al., 2022) was mandatory. This setting thus allows us to identify small firms that adopted K3 voluntarily, and compare them to those that have adopted K2, or K3 in a mandatory fashion. Second, under Swedish regulation, certain accounting areas are tax-linked (leasing; R&D reporting choices), and thus K3 adoption, while potentially allowing for more desirable reporting outcomes, may also increase the current tax burden relative to the K2 choice. On the other hand, certain accounting areas are decoupled from the tax reporting rules, and thus reporting improvements would not yield tax consequences (accounting for PP&E, including real estate). We use these characteristics of the reporting rules to identify and investigate the drivers of the voluntary K3 and adoption and the tradeoffs related to such choice.

We structure our empirical analysis in three parts. In the first part, we investigate the voluntary K3 adoption, as opposed to K2, as a function of firms' pre-regulatory change financial characteristics. We show that firms that, in the pre-regulation change year, engaged

in tax-reducing accounting behavior (which we proxy be the use of tax allocation reserves) are more likely to adopt K2, which is consistent with their tax focus. Surprisingly, we do not find that firms heavy in PP&E would be more likely to choose K3, even though such choice may improve their reporting outcomes, but not increase their tax burden. This finding thus suggests that such entities in our sample do not use their financial statements for communication with their stakeholders. Finally, and central to our tradeoff discussion, we show that firms that have reported non-zero intangible assets pre-regulation change are significantly more likely to adopt K3, even though K2 would yield a lower tax burden for such firms. While this result is in part driven by the R&D capitalization choices made under the old Swedish GAAP (firms could also choose to expense their R&D expenses before), it still highlights the importance of communicating balance sheet information, even at the expense of avoidable tax burden. We also find that firms that use leasing in 2013 were more likely to adopt K3, which requires the capitalization of the finance leases (not allowed before). Even though the specific tax consequence of this choice is unique to every firm and depends on their lease maturity structure, this choice shows private firms' demand for reporting options that allow for more relevant financial statement presentation. Overall, in this part of analysis, we find evidence that some firms chose a capital market-oriented reporting standard even when faced with additional tax costs; but we also note that we cannot explain why many firms, that do not have any apparent capital market incentives, still choose K3.

In the second part of our analysis, we investigate voluntary K3 adoption choice in the context of the tax-reporting outcomes tradeoff by testing the tax outcome changes related to the financial reporting regulation change. Using a difference-in-differences design approach and an entropy-matched sample, we investigate how the tax burden, which we capture as current tax expense scaled by sales, change around the regulation change for voluntary K3 adopters relative to firms that chose to report under K2, and relative to the mandatory K3

adopters. We find that, on average, the tax burden of voluntary K3 adopters does not change neither relative to the K2 adopters, nor relative to the mandatory K3 adopters. However, we find evidence that high-intangible firms that voluntarily adopt K3 face a higher tax burden post-adoption relative to both their K2 and mandatory K3 peers. This finding is consistent with the earlier results as it shows that firms willing to capitalize their R&D expenses also accept additional tax burden as a consequence of this choice.

Thus far, we have shown that while the voluntary K3 adoption choice can be related to some regulation-related drivers, many firms' adoption choice cannot be explained by these drivers; and that such firms do not face an increasing tax burden as a result of their K3 adoption choice. That is, the adoption of K3 does not change these firms' regulation in a way that would materially affect their tax burden due to tax-accounting links. However, it is possible that these firms choose K3 as means of presenting more relevant financial information in the areas that we have not captured in the K3 choice analysis (part 1 of the empirical analysis), and that are not subject to tax-accounting links (part 2 of the empirical analysis). Therefore, in the third part of our empirical analysis, we investigate the relative changes in the accounting properties (return on assets (ROA)), change-in-ROA volatility, and correlations between the cash flows and accruals), disclosure levels (measured as the number of notes in the annual report), and real earnings management among voluntary K3 adopters. The results of these analyses can be summarized as follows.

First, among the firms with identified K3 adoption incentives, we find that for high-intangible firms, reported return on assets (ROA) increases relative to the mandatory adopters, disclosure levels increase at a similar rate as for mandatory adopters, and real earnings management decreases relative to the mandatory K3 adopters. These results suggest that in firms with intangible assets, the voluntary adoption of K3 improves the reporting outcomes and informativeness of the financial statements relative to their peers, demonstrating thus the

benefits side of the tax-accounting tradeoff. Second, for voluntary K3 adopters with leases, we observe some increases in reported change-in-ROA volatility, which may be a result of changing lease accounting practices; at the same time, we observe declining correlations between cash flows and accruals for these firms relative to the mandatory K3 adopters, suggesting thus that these firms use the accrual accounting discretion embedded in K3 to a greater extent than their K3 peers; and we show that voluntary K3 adopters with leases disclose significantly more than K2 adopters and voluntary K3 adopters without leases. Together, these results suggest certain improvements in reported information for voluntary K3 adopters with leases. Finally, we turn to the voluntary K3 adopters without any identified capital market incentives. We do not observe any changes in accounting properties among these firms relative to K2 adopters; but we find that such firms report declining ROA relative to mandatory K3 adopters. Rather than suggesting changing economic performance, this indicates that mandatory K3 adopters have implemented more changes in their reporting following the K3 introduction. Similarly, we show that while voluntary K3 adopters without identified incentives increased their disclosure levels relative to the K2 adopters, their relative disclosure level declined relative to the mandatory K3 adopters. Together, these results suggest that even though these firms formally adopted the capital market-oriented standard (K3), their reporting patterns are consistent with limited interest in providing information to capital markets, and are more aligned with tax reporting incentives. In our sample, we estimate that around 40% of voluntary K3 adopters could be categorized as so-called "label" adopters (Daske et al., 2013).

We highlight the following contributions of this study. We contribute to Lisowsky & Minnis (2020), Bassemir (2018), and Bassemir & Novotny-Farkas (2018), as we investigate financial reporting choices in a setting where the preparation of the financial statements is mandatory, but the chosen reported standard is voluntary. Lisowsky and Minnis (2020) use the U.S. private firm setting to investigate the choice to prepare financial statements; Bassemir (2018)

investigates the drivers of private firms' IFRS adoption choices; and Bassemir & Novotny-Farkas (2018) investigate the reporting quality changes upon voluntary IFRS adoption in private firms. We extend these insights by showing not only how private firms make their reporting choices, but also by explicitly demonstrating what costs firms are willing to accept for such choices.

We also add to studies investigating IFRS adoption choices in both private and public firms as we show that the voluntary adoption choice may, in certain circumstances, be reflective of label adoption, rather than disguised preferences. These findings contrast Christensen et al. (2015), who propose that voluntary adoption choices signal high quality reporting incentives and add nuance to Bassemir & Novotny-Farkas (2018), who show that all voluntary IFRS adopters improve their disclosure quality. We show instead that absent clear incentives, the observed voluntary adoption of a reporting standard may distort the quality signal that voluntary reporting-related choices send and can potentially impair regulators' understanding of the demands and preferences embedded in private firms' reporting.

We also contribute to the debate on the regulation of accounting for intangible assets. We show that private firms with a potential to capitalize and report their intangible assets do so even when that yields them additional, and otherwise avoidable, tax expenses. This finding serves as an illustration of the importance of the need to be able to present such assets not only for listed firms, but also for privately held firms, informing thus the IASB and local regulators of potential venues for regulatory development.

The rest of this paper is structured as follows. First, we present the institutional background of our study. Next, we discuss the literature on tax and capital market-related reporting incentives and present our hypotheses. In sections 4-6, we present and discuss our empirical results. The final section concludes.

2. Institutional Background

The focus of this study is a 2014 Swedish regulation change that required all small[1] private firms (legal entities) to switch to a new reporting standard. These firms were provided with an option to choose between a tax-oriented so-called K2 standard, and a so-called K3 standard that was based on IFRS-for-SMEs (2009 version). In this section, we overview the reporting regulation that small private Swedish firms were subject to prior to 2014, the changes introduced by K2 and K3, and the tax-related costs of a K3 adoption choice. For a systematic overview of the changes, please refer to Appendix 1.

2.1. Overview of the Swedish Reporting Environment pre-2014

Before the regulation change in 2014, the financial reporting of Swedish private firms was regulated by the Swedish Annual Accounts Act, which sets out the disclosure requirements based on firm size (SAAA; framework legislation based on the EU Directives)[2]; guidance by the Swedish Accounting Standards Council (SASC) designed for large, listed firms, the application of which was allowed for private companies; and guidance designed for non-listed firms, issued by the Swedish Accounting Standards Board (SASB); however, this guidance did not cover all areas. For areas not covered, the SASB offered firms to make their own interpretation of SAAA in case they did not apply the SASC guidance. In areas covered by both SASC and SAAA guidance, non-listed firms could choose freely what guidance to use. As a result, private Swedish firms had a high degree of flexibility in their financial reporting

[1] A large firm is a firm that fulfils at least two of the below criteria for two years in a row (based on EU thresholds):

- Has more than 50 employees;
- Has more than SEK 40 million (around EUR 4 million) in total assets;
- Reports annual revenues of more than SEK 80 million (around EUR 8 million).

All other firms are small firms.

[2] SAAA differentiates between the two size categories in terms of requiring a cash-flow statements only for the large firms and less disclosures for the small firms. This requirement has not been affected by the regulatory change in 2014.

choices, creating a high opacity environment with flexible opportunities in choosing reporting approaches most aligned with firm-level reporting incentives.

This reporting regulation landscape was unsatisfactory and in 2004 the SASB decided to develop different sets of comprehensive standards designed for different preparer groups, based primarily on firm size (the so-called K-project). During the period when this work took place, 2004–2013, essentially no Swedish standard-setter issued any guidance in anticipation of the new K2 and K3 standards coming into force (in 2014).

2.2. Overview of K2 and K3 Adoption

K2 was issued in 2008, but since K2 could only be adopted as a package (about 300 pages rule-based, detailed guidance covering all topics perceived needed for small firms), and as the "old GAAP" discussed above was possible to apply, the absolute majority of preparers refrained from the adoption of K2 until it became mandatory in 2014, and the choice between K2 and K3 had to be made. K2 is designed for small companies who want rule-based guidance and who wish to minimize the differences between financial reporting and tax accounting. It also introduced a number of simplification rules related to depreciation accounting, recognition of provisions and operating expenses, financial asset impairments, and the use of accrual accounting.

K3 was issued in late 2012 with mandatory application for large firms in the financial year starting after 1st January 2014. At the same point in time, all small firms were given an option to choose between K2 and K3. The K3 Standard is a comprehensive package based on IFRS for SMEs (2009 version), adapted to meet the EU accounting directives, Swedish legislation and complemented in areas where IFRS for SMEs has limited coverage (e.g., share-based payment). In contrast to K2, K3 options generally allow firms to choose accounting treatments

that more closely reflect the economic performance of the firms and are better aligned with capital market demands.

2.3. The Tax-Related Costs of Adoption

The adoption of K3, while more informative from the capital markets point of view, has implications beyond the administrative costs of the financial statement preparation due to the legal links between tax and financial accounting in private legal entities' reporting. Limited-liability entities in Sweden are tax subjects and file tax returns (groups are not tax subjects).[3] The Swedish Income Tax Act (*Inkomstskattelagen*), 14:2 states (translated from Swedish):

"Taxation shall be based on good accounting practice unless there is an explicit tax rule."

Thus, there is a legal link between financial reporting and tax accounting in Sweden; if more than one accounting treatment is in line with accepted accounting practice (referred to as "good accounting practice" in the regulatory framework), the chosen treatment will apply also for taxation purposes unless an explicit tax rule is available. In Appendix 1 Panel A, we provide an overview of the areas where K2 and K3 standards outline different accounting rules, and the accounting choice is directly linked to the tax outcomes. The K3 options generally allow firms to choose accounting treatments better aligned with capital market demands but has a disadvantageous impact on tax for profitable firms and additional costs of preparation. Most

[3] Using the terminology of Watrin et al. (2014), the Swedish system could be described as a hybrid between a two-book and a three-book system. The parent company and subsidiaries are tax subjects who file tax returns, while the group is not. For some accounting topics, there is a tax-GAAP (three-book system), i.e. the explicit tax rules referred to. This concerns, for example, financial instruments. For other accounting topics, such as R&D, the accounting treatment in the single (unconsolidated) financial statements constitute the basis for taxable income (two-book system). Because of this accounting-tax link, K3 for single financial statements differs from K3 for consolidated financial statements. For example, K3 for consolidated financial statements permits capitalization of development costs, pending criteria, however, K3 for single financial statements allows for expensing all R&D costs so that the total R&D cost become tax-deductible. This means that the same R&D costs may be accounted for differently in the consolidated statements compared to the single statements. The same system applied during the pre-2014 period, i.e. the SFASC standards had corresponding exceptions for single statements for the important topics with accounting-tax links (SASB did not issue any guidance for preparation of consolidated financial statement before K3).

notably, R&D-intense firms who are profitable may be more inclined to expense R&D costs to minimize taxable income, unless there are strong capital market related demands for increased profits. Loss-making firms will be more inclined to capitalize R&D to postpone insolvency. Firms that use financial leases may chose K3 that requires the capitalization of such leases, but such choice also affects the tax outcomes as expenses reported under lease capitalization approach do not match the lease expense under the operating lease accounting approach which is applied under K2.

Relative to K2, K3 adoption may also bring in additional administrative costs when there is an explicit tax rule. In such cases, the explicit tax rule applies for tax purposes, but using K3 means that there needs to be an adjustment made in the tax return. In Appendix 1 Panel B, we provide an overview of the areas where K3 adoption would yield more capital market-oriented outcomes, but at the additional administrative cost. Most notably, the adoption of K3 may benefit real estate-heavy firms due to more flexible depreciation patterns, asset revaluation opportunities, and broadened possibilities to capitalize real estate-related expenses. In these cases, while K3 adoption may allow firms to present a more accurate (and potentially more favorable) financial result, this may come at a significant administrative cost. For firms that do not have strong capital market pressures, such administrative costs may not be outweighed by the benefits of improved financial reporting.

Overall, as the K2 and K3 standards can only be adopted as packages, the choice made by small firms will involve a comprehensive evaluation of the two standards. In turn, we expect different reporting incentives to play an important role in reporting standard choice decisions. In Section 4, we operationalize these different types of incentives using several reporting-related approaches, considering the differences between K2 and K3 as well as their links to tax outcomes.

3. Prior Research and Development of Hypotheses

3.1. Prior Literature

The accounting literature recognizes early the trade-offs between tax and financial reporting goals that drive firms' accounting choices (Fields, Lys, and Vincent, 2001; Shackelford and Shevlin, 2001). Minimizing tax costs stems from a shareholder wealth maximization goal, while financial reporting considerations are driven by agency and information costs as firms engage in contracts with providers of capital and outside parties. Such incentives come into conflict in situations where financial and tax accounting is linked and when reporting is used in contracting and communication with stakeholders, such as owners, lenders, suppliers, and regulators.

In public firm settings, studies of specific accounting choices in settings where tax and reporting incentives compete have report mixed results. Klassen (1997) finds that public firms facing higher capital market incentives, proxied by management ownership, divest assets at higher realized gains, incurring higher tax costs to report higher income. In investigating inventory accounting choices, Hunt, Moyer, and Shevlin (1996) conclude that taxes do not affect accounting decisions in LIFO firms, rather, inventory management is driven by covenant-related costs and income smoothing. On the other hand, Jenkins and Pincus (1998) find that tax savings dominate earnings management concerns for LIFO adopting firms. Other studies investigate earnings management choices that have current tax consequences. Guenther, Maydew, and Nutter (1997) study firms that changed from the cash to the accrual method for tax purposes and observe significant increases in the levels of deferred income after the change. Erickson, Hanlon, and Maydew (2004) find that firms are willing to pay tax on overstated pre-tax income to avoid reporting lower earnings and detection. Maydew, Schipper, and Vincent (1999) find evidence that tax considerations affect managers' choice of asset divestiture method. Lynch et al. (2019) investigate recognition of asset acquisitions in US listed

firms and show that while tax incentives drive the purchase price allocation towards depreciable assets, strong financial reporting incentives moderate this choice.

While competing tax and financial reporting incentives are expected to be more pronounced in settings with high book-tax conformity, studies focusing on such settings provide mixed evidence as well. Watrin, Ebert, and Thomsen (2014) look at the consolidated accounts of European public firms and find that high conformity settings incentivize income reducing earnings management. In contrast, Blaylock, Gaertner, and Shevlin (2012) show that earnings management is positively associated with high conformity across 35 countries. Tang (2015) finds that high conformity limit income-increasing earnings management in an international sample.

Another line of research compares public to private firms to investigate competing tax and reporting incentives. Relative to public firms, agency and information costs are lower in private firms, and thus their reporting incentives are expected to be weaker. In private firms, other incentives such as tax costs and dividends may be more salient (Bar-Yosef, D'Augusta, and Prencipe, 2019). Notably, Ball and Shivakumar (2005) indicate that private UK firms prioritize tax goals, which is reflected in their lower quality earnings as compared to public firms'. Consistent with this finding, Burgstahler, Hail, and Leuz (2006) report that stronger tax alignment is associated with higher earnings management in European private firms. The authors do not provide direct evidence on the tax-minimizing effect of such earnings management but argue that lower earnings informativeness is a direct consequence of tax incentives in determining reporting outcomes. Further evidence of competing tax and reporting incentives is provided by Coppens and Peek (2005), who investigate earnings management in public and large private firms in eight European countries. The authors report that, absent the capital market pressures that public firm face, private firms still avoid small losses. However, when tax-financial reporting alignment is strong, private firms do not avoid reporting losses.

Coppens and Peak attribute this to tax incentives outweighing capital market incentives. Goncharov and Zimmerman (2006) more directly examine tax incentives in earnings management in Russia by employing a change in marginal tax rates as a proxy for tax incentives. The authors provide evidence that firms with high marginal tax rates were more likely to report lower earnings in a high book-tax conformity setting, and that this effect was more pronounced in private firms.

Yet, comparing public to private firms in order to isolate the effects of strong capital markets incentives does not provide insight into how tradeoffs between tax and financial reporting incentives take place in private firms. With few exceptions, evidence from the private firm setting is scarce. Some evidence comes from studies of private firms in Slovenia (Garrod, Kosi, and Valentincic, 2008) and SMEs in Germany (Szczesny and Valentincic, 2013) that link asset write-offs to tax minimization. Investigating a regulatory change in Slovenia that removed tax benefits of asset write-offs, Kosi and Valentincic (2013) find that the regulatory change decreased but did not eliminate asset write-offs, suggesting that non-tax incentives play an important role in firm's accounting decisions.

In sum, the literature points to evidence of competing tax and capital market incentives that influence financial reporting decisions. The evidence comes mainly from public firm settings, from high book-tax conformity settings, and from public vs. private settings. In a public firm setting, the focus of analysis is typically one specific accounting issue which is investigated against variations in capital market pressures; in such cases, it is not surprising that lower capital pressures allow for stronger focus on tax outcomes, but these insights do not provide clear inference on the relative importance of such incentives in private firms with generally lower capital market pressures. Public vs. private comparisons indicate that tax considerations are stronger for private firms. However, such comparisons do not provide evidence on how capital market incentives compete with tax incentives to shape private firms' reporting choices.

Further, international comparisons of firms under different institutional and economic environments may confound inference (Bonacchi, Marra, and Zarowin, 2019) and raise endogeneity concerns (Beuselinck et al., 2021). Another limiting factor is that the literature provides indirect evidence of tax incentives by focusing on earnings management, which may also be driven by non-tax considerations (Coppens and Peek, 2005; Kosi and Valentincic, 2013).

Using the Swedish regulatory change in 2014 allows us to address many of these issues. We observe a major regulatory overhaul by which large private firms were required to adopt an IFRS-for-SMEs based standard, called K3. Small firms, on the other hand, had the option to choose between K3 and a simplified standard, K2. In this setting, the choice of reporting standard implies different tax and financial reporting consequences for different firms of specific characteristics. This setting is unique as it introduces different types (voluntary vs. mandatory) first-time adoptions of reporting standards, which alleviates concerns of anticipation and contagion that may be found in voluntary adoption settings. Finally, and unlike evidence from transaction-based choices or accounting discretion allowed within the same standard, the choice to adopt one of the two standards in our setting is about committing to a package of rules, which requires firms to investigate the pros and cons of each standard ex-ante.

3.2. Hypotheses Development

Based on the discussion of differences between the two standards (K2 and K3) in Section 2, we characterize K3 adoption as the capital market-oriented choice, and K2 adoption as tax oriented. We therefore investigate the choice between K2 and K3 as a function of firm-level characteristics that would either increase earnings, but also increase tax and/or administrative costs, or would allow tax minimization, but at the expense of lower reported earnings. These characteristics correspond to the areas of differences between the two standards that introduce

conflicting tax and capital market incentives. Other observable characteristics that are not tax-linked may also play a role in the adoption choice. In these cases, firms prioritizing information quality and accurate representation will choose to incur extra administrative costs under K3. As a result, identifying the drivers of the voluntary choice allows us to investigate the tradeoffs that firms with competing tax and capital market incentives face under K3. Using K2 adoption as a base choice, we state the following hypothesis:

H1a: The choice to adopt K3 is positively related to capital market incentives.

H1b: The choice to adopt K3 is negatively related to tax incentives.

We next turn to directly investigating the tax costs associated with reporting under K3. Should capital market incentives outweigh tax considerations, voluntary K3 adopters may be subject to a higher tax burden following the regulation change. On the other hand, should tax incentives weigh heavily in the K3 adoption considerations, then small firms will only adopt K3 to the extent that it does not increase their tax expense. Therefore, investigating the tax outcomes related to voluntary K3 adoption choice allows us to gain further insight into whether the financial reporting choice in private firms is primarily driven by tax or capital market considerations. We therefore formally present the following hypothesis:

H2: Voluntary K3 adoption is not associated with increases in tax burden.

Prior literature investigating voluntary IFRS adoption choices reports improvements in adopters' financial reporting quality, but also suggests that the strongest changes can only be observed for firms with strong reporting incentives (Christensen et al., 2015; Daske et al., 2013; Bassemir and Novotny-Farkas, 2018). Based on these insights, we expect that voluntary K3 adopters exhibit improvements in their reporting quality, and that these improvements are strongest for firms with direct tax-accounting tradeoffs in these reporting choices. We therefore formulate our final hypothesis as follows:

H3: Voluntary K3 adoption is associated with improved financial reporting quality.

4. Research Design

4.1. Data Sources and Sample Construction

We obtain our data from the database *Serrano*, which collects information directly from financial statements filed with the Swedish Companies Registration Office (SCRO, Bolagsverket) and firm information from Statistics Sweden (SCB). For financial years 2013–2015, we select active limited-liability firms (*aktiebolag*) that are categorized as independent (i.e., neither parent company nor subsidiary) and thus do not prepare (or are a part of) consolidated financial statements. This is to prevent firm activities driven by intra-group considerations to influence the empirical findings. We use only a lower size restriction and eliminate micro firms from the sample[4]. This sampling procedure yields 7,142 firms. For these firms, we identify the adopted accounting standard by hand-collecting annual reports and performing rule-based textual analysis of the explicit descriptions of applied accounting standards available in the financial-statement notes. We manually check the quality of the identification with multiple random sampling from the data. With this method, we were able to identify 5,729 firms, out of which 4,723 were identified as K2 adopters, while 906 firms were identified as K3 adopters.

From this data, we use the size thresholds described in Section 2 (50 employees, SEK 80 million in revenue, and SEK 40 million in assets, over two consecutive years) to distinguish small firms from large firms. By definition, small firms that are identified as K3 adopters are considered to be voluntary K3 adopters. We thus construct three types of samples to be used in subsequent analyses. First, we retain firms identified as small firms in 2014 and create a cross-sectional dataset of these firms' characteristics in the year prior to adoption, as well as the accounting standard choice revealed in 2014. We use this sample to model the accounting

4 Micro firms are those with less than 10 employees and either assets or sales less than 20 million SEK (2003/361/EC: Article 2).

standard choice. This sample consists of 4,163 firms, 14% of which have chosen to voluntarily adopt K3. Second, we expand this sample and construct a panel sample covering 2011-2016 to investigate the divergences in tax and financial reporting outcomes for these two sets of firms. This sample consists of 26,165 firm-year observations. Finally, we construct a sample of voluntary K3 adopters and mandatory K3 adopters and investigate these firms' tax outcome and financial reporting. In this sample, we have 4,955 firm-year observations, representing 838 firms, 575 (69%) of which are classified as voluntary K3 adopters.

4.2. Variable Construction

4.2.1. New Standard Adoption Identifiers

We label small firms that implemented K2 in 2014 ($K2_f$), small firms that implemented K3 in 2014 as voluntary K3 adopters, or (VOL_K3_f), and large firms that were mandated to follow K3 in 2014 as mandatory adopters ($MAND\_K3_f$).

4.2.2. Drivers of Reporting Standard Choice

To operationalize the competing tax and capital market incentives in our empirical setting, we use several financial characteristics as observed in the year prior to adopting one of the two standards.

Financial characteristics with tax-accounting link

We construct a variable ($INTANGRATIO_{ft}$), calculated as the ratio of intangible assets to total assets, and an indicator variable ($INTANG\_IND_{ft}$) set to 1 if a firm reports having intangible assets. We use the presence of intangible assets as a proxy for the presence of capitalized R&D; a separate line item for capitalized R&D is not available in Serrano database.[5] Due to the direct tax-accounting link that the treatment of R&D expenses is subject to, the presence and level of such assets and their role in voluntary accounting standard choice is

[5] As we only consider independent legal entities, they do not have any goodwill that typically constitutes a significant portion of intangible assets in consolidated accounts.

expected to directly capture the tax versus the capital market incentives of the firm. As discussed in Section 2, under K2, firms are required to immediately expense their R&D expenses, reducing thus their taxable income. On the other hand, under K3, firms are allowed to capitalize such expenses to a certain extent, thus increasing their balance sheet and reported profit, but also forfeiting potential income tax reductions. In this setting, we expect that the use of intangible assets signals strong capital market orientation, as firms are willing to accept higher tax expenses to show higher profitability. We therefore expect that firms with reported intangible assets prior to 2014 are more likely to adopt K3.

We next consider the use of leasing as proxy for capital market incentives. Before the regulatory change and under K2, firms were not required, nor allowed to capitalize any leases. On the other hand, under K3, firm are required to capitalize financial leases. We therefore expect that firms with leases would be inclined to adopt K3 as means of reducing information asymmetries. We note that the accounting treatment of financial leases is subject to the direct tax-accounting link; however, the specific effect on the profitability and tax outcomes depends on the maturity of the leases. Therefore, while there may be a tension between tax and reporting incentives for firms with financial leases, we cannot capture such tensions as the use of leases and the lease portfolio structure are not directly observable in 2013 and for the K2 adopters. To capture the use of leasing, we count mentions of leasing in the firm's annual reports ($LEASE\_COUNT_{ft}$) and construct an indicator of the existence of leasing ($LEASE\_IND_{ft}$) which is equal to 1 for positive counts, and 0 otherwise.

To capture firm-level incentives to adopt K2, we construct an indicator variable ($TAX\_ALLOCATIONS_{ft}$) that directly captures tax-driven reporting incentives. We set $TAX\_ALLOCATIONS_{ft}$ equal to 1 if the firm reports a non-zero tax allocation to untaxed reserves. Such allocations are treated as an expense in the income statement; their discretionary component can directly reduce the reported income by up to 25% in a given year, deferring

instead the tax expense related to this part of income for up to six years until the allocation is reversed. As such accounting choice reduces the taxable income by reducing accounting profitability, we interpret the presence of tax allocations as an indicator of strong tax-reporting incentives. While tax allocation rules apply to firms reporting under both K2 and K3, we expect that firms using tax allocations have stronger focus on tax outcomes and thus would be more inclined to adopt K2.

Financial characteristics without a tax-accounting link

We include the level of PP&E in 2013 as a potential driver of K3 adoption and calculate $PPERATIO_{ft}$ as PP&E scaled by total assets. As discussed in Section 2, K3 allows for the depreciation, revaluation, and expense capitalization choices which are aligned with the capital market oriented reporting incentives. These accounting choices are not linked to tax outcomes but may yield administrative costs relating to tax filing adjustments. If PPE-intensive firms have capital market focus, we expect such firms to be more likely to adopt K3.

Finally, we consider external bank debt and trade credit two financing sources that that may affect financial reporting decisions (Bassemir, 2018; Hope & Vyas, 2017; Lisowsky & Minnis, 2020). We construct LEV_{ft}, measured as short- and long-term liabilities to credit institutions divided by total assets. We expect that the presence and level of bank financing is a proxy for firm-level incentives to provide economically relevant financial information. Similarly, as trade creditors can be an important source of capital for small firms, we construct ($TRADE_{ft}$) as the ratio of account payables to average total assets to proxy for the potential need to communicate relevant information to this type of stakeholder (Lisowsky and Minnis, 2020).

4.2.3. Measure for the Tax Burden

To capture the overall effect on the tax outcome, we construct a measure of tax burden as current tax for the financial year deflated by sales for the current year (TAX_SALES_{ft}). We construct this measure rather than use effective interest rates that is a usual choice in taxation

literature because we are interested in changing tax costs rather than changing level of tax avoidance. We deflate current tax by sales to capture the economic significance of the tax burden; in this regard, we deviate from prior literature that uses total assets as a scaler (Badertscher et al., 2019; Dong, Tylaite, and Wilson,2022). We do so since reported assets are likely to be affected by the choice of the reporting standard, whereas reported sales are less likely to be affected by such reporting decisions. Lower values of TAX_SALES_{ft} reflect lower tax burden for the firm.

4.2.4. Measures for Financial Reporting Properties

We construct three measures for accounting properties. We calculate the return on assets (ROA_{ft}) as profit after financial income, before allocations to tax reserves, divided by total assets. Like Hellman et al. (2022), in this setting, we expect this measure to capture the changes in reporting policies rather than changing economic performance. We construct $SD3\_D\_ROA_{ft}$ as a 3-year rolling standard deviation of changes in the return on assets, and $CORR3_{ft}$ as a 3-year rolling correlation between total accruals and cash flows. Prior studies use these measures as proxies for earnings management. Higher $SD3\_D\_ROA_{ft}$ and higher $CORR3_{ft}$ is typically interpreted as evidence of lower earnings management and, thus, higher earnings quality (Ahmed, Neel, and Wang ,2013; Barth, Landsman, and Lang, 2008; Christensen et al., 2015).

Hellman et al. (2022) provide some evidence that groups subject to mandatory K3 adoption may start engaging in real earnings management to compensate for restricted real earnings management. We therefore include a measure of real earnings management ($REM3_{ft}$) as the 3-year rolling correlation between the managed and unmanaged components of ROA_{ft} based on abnormal discretionary accruals (Khurana, Moser, and Raman, 2018). Finally, we use the natural log of the number of notes to statements as a proxy for disclosure quality (LN_NOTES_{ft}).

4.2.5. Control Variables

We include a set of controls for relevant firm characteristics that may be associated with financial reporting choices (Bassemir, 2018; Bassemir and Novotny-Farkas, 2018; Lisowsky and Minnis, 2020). We control for firm size ($SIZE_{ft}$), calculated as the natural logarithm of total assets, profitability (ROA_{ft}), as profit after financial income, before allocations to tax reserves, divided by total assets, and sales growth ($SALES\_GR_{ft}$), measured as the annual growth rate in sales. Firm age (AGE_{ft}) is the logarithm of the firm's tenure in years, liquidity ($LIQUIDITY_{ft}$) is measured as cash held divided by total assets, and turnover ($TURNOVER_{ft}$) is measured as sales divided by average total assets. Since profitable firms have stronger tax incentives, we include two controls for loss making or distressed firms, ($LOSS_{ft}$) indicates pre-tax loss in the current year, and ($LOSS3_{ft}$) indicates pre-tax loss in any of the three most recent years, which would also capture the existence of tax loss carryforwards.

In addition, we use a Big 4 auditor indicator ($BIG4_{ft}$) to capture Big 4 auditor effects, and an external CEO indicator ($EXCEO_{ft}$), which is defined in the Serrano database as a CEO that is not a board member, to proxy for dispersed or professional ownership. To proxy for industry heterogeneity, we use the 12-industry classification reported in the *Serrano* database[6] to construct industry indicators.

Finally, for our difference-in-differences analysis, we include firm and industry-year fixed effects to mitigate any confounding effects arising from omitted unobserved firm level characteristics and time-industry specific events. In these specifications, we also restrict the use of firm-level time-varying controls as the standard choice may also affect many controls. For details, see model specification descriptions. All variables are described in Appendix 2 and all continuous variables are winsorized at the 1% and 99% levels to avoid any effects from extreme values.

[6] The industry classifications are based on the Swedish Standard Industrial Classification, which is based on EU NACE system.

5. Empirical Results

5.1. Descriptive Statistics

In our sample of 4,737 firms, about 81% (3,817) are classified as K2 firms, 13% (629) as voluntary K3 adopters, and 6% (291) as mandatory K3 adopters. Within the small-firms group that have a choice between reporting under K2 or K3, about 86% chose K2; 14% chose K3. We also find that about 26% (965) of K2 firms had already adopted K2 in 2013. To visualize the distribution of size criteria among the firms, we calculate the *distance-to-threshold* for each of the number of employees, sales, and assets for each firm as the natural logarithm of the ratio of the variable to its corresponding threshold (50 employees, SEK 80 million in revenue, and SEK 40 million in assets). Figure 1 shows histograms for each of these distance functions for the three groups. Since the size criterion is based on two out of three thresholds over two years, we notice that there is considerable overlap around the thresholds for the three measures with sales having the least overlap. Further, we note that the distributions for voluntary K3- and K2-firms have similar shapes. In our analysis, we use these *distance-to-threshold* measures to control for any effects of being close to the respective thresholds following Breuer, Hombach, and Müller (2018). The descriptive statistics for the full sample are presented in Table 1.

[Table 1 about here]

[Figure 1 about here]

In Table 2, Panel A, we report the descriptive statistics and mean for the sample of small firms one year prior to making the reporting choice, split by the reporting choice. We note that voluntary K3 adopters are on average bigger firms, have higher intangible assets, higher trade credit, and are more likely to use leasing. Voluntary K3 adopters also have higher turnover and are more likely to have a Big 4 auditor and an external CEO. We also note that that K2 firms are more leveraged, on average, and that voluntary K3 adopters have lower tax to sales ratios

and are less likely to use allocations to tax reserves. In Table 2, Panel B, we report the same the descriptive statistics and mean comparisons for voluntary and mandatory K3 adopters. The mandatory K3 adopters are mechanically larger. Voluntary K3 adopters have higher intangible assets, exhibit lower sales growth and turnover, are more likely to have an external CEO. Relative to the voluntary K3 adopters, mandatory K3 adopters have higher level of disclosures before K3 adoption, but also exhibit higher degree of earnings management, measured as $CORR3_{ft}$, $SD\_D\_ROA_{ft}$, and $REM3_{ft}$.

[Table 2 about here]

In Table 3, we report industry distributions of the voluntary K3 adoption choice. We note that, relative to other industries, Finance & Real Estate, Construction, and Materials firms are noticeably less likely to choose K3. On the other hand, Convenience Goods, followed by IT and Telecom, which were the highest likely to adopt K3. These industry distributions are consistent with descriptive statistics reported in Table 2. Together, the observations from Tables 2 and 3 provide some initial evidence in support of our first hypothesis.

[Table 3 about here]

We next look into voluntary K3 adoption choice distribution within our reporting incentive measures. In Panel A of Table 4, we report the percentage of small firms adopting K3 split by top quartiles for each of the continuous incentive measures, calculated by industry, and the indicators, $INTANG\_IND_{ft}$ and $TAX\_ALLOCATIONS_{ft}$. While on average 14% of small firms adopt K3, firms with intangible assets are much more likely to adopt K3, as 38% of such firms chose K3, as compared to a 12% adoption rate for the rest of their peers. Similar, but not as strong, behaviour is reported for $LEASE\_COUNT_{ft}$. On the other hand, $TAX\_ALLOCATIONS_{ft}$ show opposite behaviour, with 12% adoption rate for firms who use tax allocations versus 16%

for firms that do not. High $PPERATIO_{ft}$ ratio also is associated with lower likelihood of adoption.

As described in Section 2, R&D related activities are expected to come into conflict with tax incentives. Therefore, the higher the tax burden that the firm incurs prior to 2014, the more likely this conflict will be considered by the firm. To illustrate the possible tradeoff between the tax and capital market reporting incentives, in Panel B of Table 4 we present a two-way split of the rate of K3 adoption by $INTANG\_IND_{ft}$ and by quartile of TAX_SALES_{ft}. We observe that for firms with intangibles, K3 adoption is less likely the higher the tax burden, relative to other firms. This behaviour is weaker for firms with no intangibles.

[Table 4 about here]

Taken together, this subsection presents preliminary evidence for the role tax and capital market incentives play in financial reporting choices in private firms. We present multivariate analysis in the next subsection.

5.2. Modeling The Voluntary Choice

To identify the determinants of the voluntary choice of small firms to adopt the K3 standard, we fit the following logit model:

$$\boldsymbol{K3_{ft} = \alpha + \beta' X_{ft-1} + \epsilon_f} \quad \textbf{(1)}$$

where $\boldsymbol{K3_{ft}}$ is equal to 0 if firm $\boldsymbol{f}$ chooses K2, and 1 if it chooses K3. $\boldsymbol{t}$ is equal to the year of adoption, which is 2014 for most of the sample. $\boldsymbol{X_{ft}}$ is the vector of choice incentives, industry indicators, and controls, as discussed in Section 4.2. Standard errors are clustered at the industry level.

Table 5 reports the fitted models. Model (1) and (2) in Table 5 correspond to Equation (1), without and with industry indicators (untabulated for brevity), respectively. We make this choice to investigate the determinants of choice without industry effects, as industry effects

correlate with some of our measures. Models (1) and (2) show positive and statistically significant coefficients for the intangibles ratio ($INTANGRATIO_{ft}$) and the use of leases ($LEASE\_COUNT_{ft}$), as well as a negative and significant coefficient for the tax incentives measure ($TAX\_ALLOCATIONS_{ft}$), as predicted. Leverage (LEV_{ft}) and trade credit ($TRADE_{ft}$) do not load significantly in this model. The $PPERATIO_{ft}$ is insignificant, even when controlling for industry membership. In addition, $SIZE_{ft}$, profitability (ROA_{ft}), $TURNOVER_{ft}$, $BIG4_{ft}$, external CEO ($EXCEO_{ft}$) and, to some extent, sales growth ($SALES\_GR_{ft}$) increase the probability of K3 adoption, which is an expected outcome as larger firms are closer to mandatory K3 adoption threshold, whereas external CEO and BIG4 auditor indicators are likely to capture firm's focus on financial statement quality. Industry indicators (untabulated) are all significant and their inclusion does not affect other factor loadings. In terms of performance, the model has a True Positive rate of 28% without industry indicators and 38% when including industry indicators. Compared to a base rate of 14%, the models show good explanatory power[7]. In Models (3) and (4), we introduce variations to alleviate concerns of extreme values or noisy measures driving the results and thus convert LEV_{ft}, $INTANGRATIO_{ft}$, and $LEASE\_COUNT_{ft}$ into binary variables that take the value of 1 if when the respective continuous variable takes the value of non-zero (LEV_IND_{ft}, $INTANG\_IND_{ft}$, and $LEASE\_IND_{ft}$, respectively). In addition, as some determinants may depend on the firm's profitability state, we interact both ROA_{ft} and $INTANG\_IND_{f}$ with the pre-tax loss indicator, $LOSS_{ft}$. We do so because loss-making firms may be more inclined to adopt K3 as a way of postponing insolvency due to the expense capitalization options that the standard offers. With some loss in predictive performance, the results remain qualitatively consistent and moderate

[7] In untabulated tests, we exclude early adopters of K2 and Finance & Real Estate firms, which from the previous section had a very strong inclination towards adopting K2. When excluding early adopters, the True Positive rate of Model (2) is 41%. When excluding Finance & Real Estate firms, the rate is 44%. When excluding both groups, the performance reaches 49%.

the strong coefficient for the intangibles ratio. We note however that the leverage indicator is, unlike in Models (1) and (2), negative and significant, which is unexpected in light of findings by Bassemir (2018) for German private firms adopting IFRS and Lisowsky and Minnis (2020) for private US firms' choice to produce financial statements. This may be explained by the fact that the Swedish economy is characterised by relation-driven banking, with banks having easier access to information and being less reliant on financial reports. This reasoning may also apply to trade credit, as we see from the different models presented in Table 5.

While we do control for firm size in Equation (1), one potential concern is that firms that are close to the large-firm size thresholds, and therefore expect to be classified as a large firm in the near future, will avoid the expected switching costs and adopt K3 sooner. This possibility is likely since the histograms depicted in Figure 1 show that some small firms are close to or are already above one threshold in one of the size dimensions. Following Breuer et al. (2017), we control for this potential driver with RDD-style controls by including a set of indicators for each of the regulatory size thresholds the firm exceeds in the two years prior to standard adoption, as well as the log of the distance to the thresholds, measured as the ratio of the size variable to the regulatory threshold value, and interact them together. Specifications (5) and (6) in Table 5 include these size thresholds. We note that introducing the size thresholds slightly increases the prediction success and absorbs the remaining significance of ROA_{ft}, but does not change the loadings on the rest of the covariates.

[Table 5 about here]

The insights gained from our multivariate analysis confirm our first hypothesis that K3 adoption is positively associated with capital market incentives, while K2 adoption is positively associated with tax-related incentives.

5.3. Effects on The Tax Outcomes

The previous subsection shows that capital market incentives are positively associated with the voluntarily adoption of K3. As discussed in Section 3, this adoption choice carries embedded tradeoffs, which are especially likely to be observed in firms with the strongest capital market incentives. For instance, Table 4 reports that about 38% of firms with intangibles chose K3, as opposed to 12% for firms with no intangibles. Therefore, we investigate whether and how such tradeoffs materialize in the post adoption period. To do so, we employ a difference-in-differences design with a strict fixed effects structure and compare the impact of the adoption on the tax burden for the voluntary K3 adopters using as benchmark, first, the K2 firms, and second, the mandatory K3 firms. Such approach is similar to the sandwich approach adopted by Kausar, Shroff, and White (2016) in an audit regulation setting. The comparison of voluntary K3 adoption to the K2 adoption allows us to infer the divergence in outcomes occurring due to the adoption of the standards with different reporting focus; whereas the comparison of voluntary and mandatory K3 adopters allows us to gain insight in the incentives effects on the changes in corporate outcomes. To observe the tradeoffs for firms with the highest capital market incentives, we additionally use triple interactions to investigate this expected heterogeneity in the effects. In our tax outcome analysis, we restrict the sample to profitable firms. We estimate the following model:

$$\boldsymbol{OUTCOME_{ft} = \beta_0 + \beta_1 VOL\_K3_f * POST_t + \beta_2 VOL\_K3_f * POST_t * INCENTIVE_f + \boldsymbol{\gamma}' \boldsymbol{X_{ft}} + \beta_f FE_f + \beta_{gt} FE_{gt} + \epsilon_{ft}} \quad (2)$$

where the outcome variable is TAX_SALES_{ft} in this subsection, and is restricted to profit making firms, $\boldsymbol{INCENTIVE_i}$ is an indicator equal to 1 if the firm has high capital market incentive, which we proxy by time invariant $INTANG\_IND_f$ and $LEASE\_IND_f$ measured as of 2013 (pre-

adoption). $\boldsymbol{POST_t}$ is an indicator equal to 1 after 2014 (2013 for early K2 adopters). The fixed effects correspond to firm and industry-year fixed effects, respectively. $\boldsymbol{X_{ft}}$ is a vector of the remaining interactions and controls that may be correlated with outcome variable ($SIZE_{ft}$, $TURNOVER_{ft}$, $LIQUIDITY_{ft}$, $SALES\_GR_{ft}$, $BIG4_{ft}$, and $EXCEO_{ft}$). However, as even these covariates may be affected by the treatment and thus introduce bias in the model, we perform our analysis both with and without these controls (Angrist and Pischke, 2009; McMullin and Schonberger, 2022). We use a window of three years before and three after the regulatory change (2011-2016) and cluster the errors at the firm level.

To address concerns of imbalance in the sample driving our results, we conduct our analysis using entropy balancing to achieve covariate balance pre-treatment (Hainmueller, 2012). We choose entropy balancing to avoid losing observations as, by design of size criteria, Figure 1 indicates limited overlap in support between small and large firms. Since the K2 vs. voluntary K3 subsample is large, we successfully balance the sample on the first three moments. On the other hand, the small overlap between the voluntary and mandatory K3 groups makes it hard to balance the covariates fully. Therefore, we only balance on the first moment for this subsample (balancing results not tabulated for brevity).

Figure 2 plots time trends for the average value of TAX_SALES_{ft} in absolute values (Panel A) and relative to 2013 values (Panel B), for each of the three groups. We note that K2 firms incur higher tax burdens on average. The plots do not show strong patterns in the tax burden. If anything, the Panel B suggests that the regulation had a harmonization effect on tax trends, especially for the voluntary and mandatory K3 adopters. This is also consistent with the regulators' goal or reducing the discretionary variation in firms' reporting choices that was highly prevalent under the old Swedish GAAP.

[Figure 2 about here]

5.3.1. Results for Voluntary K3 Adopters vs. K2 Adopters

Table 6, Panel A, presents results for the difference-in-differences analysis for the sample of small firms. Columns (1) and (2) represent the difference-in-differences model without triple interactions, without and with controls, respectively. The coefficient on $VOL\_K3_f \times POST_t$ corresponds to $\boldsymbol{\beta_1}$ in Equation (2) and shows no significant effect of adoptions on the outcome variable, on average. However, when we split the sample in columns (3) and (4) by use of intangibles in the preadoption year ($INTANG\_IND_f$), we observe some negative effect on tax outcomes for firms that have adopted K3 but that we do not identify as having clear capital market incentives (negative and significant coefficient for $VOL\_K3_f \times POST_t$). This suggests about a 13% tax burden reduction in tax to sales ratio for a K3 adopter with a sample mean tax burden relative to a K2 adopter. On the other hand, the coefficient on $VOL\_K3_f \times POST_t \times INTANG\_IND_f$, is positive and significant, indicating that firms that have reported intangible assets in the pre-adoption year and have chosen to adopt K3 saw their tax to sales ratios increase relative to their peers that chose to adopt K2. We find consistent but weaker results for use of leases in columns (5) and (6). That these results are weaker, however, is not surprising since even though lease accounting is linked to tax outcomes, the tax effect of lease reporting depends on the maturity of the leases (see Section 2). In columns (7) and (8) we combine both triple interactions to compare high incentives firms with those with low incentives on both measures. The differences remain consistent. These findings provide support for the tax-accounting tradeoff hypothesis, showing that firms with strong capital market orientation may accept higher tax burden as a cost of their reporting choices. We thus formally reject our Hypothesis 2.

5.3.1. Results for Voluntary K3 vs. Mandatory K3 Adopters

Table 6, Panel B, presents the results of estimating model (2) on the alternative sample that consists of voluntary and mandatory adopters. As all firms adopt the same reporting standard

in this sample, we do not expect to observe strong heterogeneity in the outcomes unless the incentives of the voluntary K3 adopters yield more pronounced reporting changes for these firms. The estimation results show a positive and significant effect of the voluntary K3 adoption in the presence of intangible assets pre-adoption (columns (3) and (7) in Panel B of Table 6). We do not observe significant effects for the voluntary K3 adopters with leases. Overall, these results point to a similar conclusion as before, i.e., that firms with strong capital market incentives may be willing to accept a higher tax burden as a cost of their reporting choices.

[Table 6 about here]

5.4. Informational Consequences for External Users

The tax outcome analysis reported above suggests the presence of a tax cost of K3 adoption for some, but not all, voluntary K3 adopters. In this section, we investigate the other side of this tradeoff, i.e., the reporting changes associated with the reporting standard choice. We expect that, if voluntary K3 adopters chose this reporting standard because this standard better serves capital market information needs, then we may observe divergence in the reporting outcomes between the voluntary K3 adopters and the K2 adopters. Further, should voluntary K3 adoption choice be driven by these firms' capital market-oriented incentives, we may observe more pronounced changes in these firms' reporting outcomes relative to the mandatory K3 adopters. This line of reasoning is consistent with Christensen et al. (2015), who find that only voluntary IFRS adopters experience improvements in earnings quality, as well as with Daske et al. (2013), who find that only non-label adopters decrease their cost of capital.

One obvious issue is that prior to 2014, all firms had a high degree of flexibility in their reporting choices; thus, firms may have had reporting policies that were optimized to their reporting needs. If that is the case, then firms with capital market orientation may already have reported in a way similar to K3 prior to the regulation change, and the transition to K3 would

not be associated with any significant reporting changes. Thus, in addition to multiple measures for accounting properties, we also investigate firm-level disclosures, which we capture as the number of notes in the annual reports, and real earnings management, which we measure using the Kothari et al. (2018) approach. In the disclosure analysis, we utilize the differences in reporting requirements between small and large firms as outlined by SAAA. That is, larger firms must provide additional information on their cash flows, whereas this is not mandatory for smaller firms. If voluntary K3 adopters chose this reporting standard due to capital market incentives, we expect that, together with other changes required by K3, they would also be likely to voluntarily adopt the cash flow disclosures.[8] Thus, their disclosure levels would increase, in a voluntary nature, at least similarly or even more than the disclosures of the larger firms subject to mandatory K3 adoption. We also expect that if voluntary K3 adopters make this reporting due to their capital market incentives, then their real earnings management should also decline relative to their peers that do not have such incentives.

In the following subsections, we investigate each of these outcomes using the same difference-in-differences design used for the tax outcome in the previous section, using an entropy balanced sample, and without restricting the analysis to profitable firms.

5.4.1. Changes in Accounting Properties

We start with investigating changes in accounting properties. To capture these changes, we use ROA_{ft}, $SD3\_D\_ROA_{ft}$, which measures the standard deviation of ROA_{ft} and $CORR3_{ft}$, which measures the correlation between cashflow and total accruals.

In Table 7, we report the results of estimating model (2) on the return on assets (ROA_{ft}). We find no significant effect of K3 adoption on ROA_{ft} for voluntary K3 firms, as benchmarked against K2 firms (Panel A). In Panel B, however, when benchmarking against mandatory

[8] Virtually no voluntary K3 adopters have cash flow disclosures pre-regulation change.

adopters, we note a decrease in reported return on assets for low capital market incentive firms (negative and significant coefficient for $VOL\_K3_f \times POST_t$ for many specifications). While surprising, this finding is consistent with some evidence on tax burden reductions for these firm that we also report in Table 6. On the other hand, we observe strong positive effects for voluntary K3 adopters with intangible assets ($K3_f \times POST_t \times INTANG\_IND_f$), which is consistent with such firms' incentive to report under K3 because of R&D expense capitalization option.

[Table 7 about here]

Table 8 reports the results for $SD3\_D\_ROA_{ft}$ and indicates that high capital market oriented voluntary K3 adopters with leases exhibit a relative increase in earnings volatility, (Panel B). This increase in volatility is interpreted as an increase in reporting quality. The results for $CORR3_{ft}$ are reported in Table 9. In Panel A, we do not observe any significant differences between voluntary K3 adopters and K2 adopters. When benchmarking against mandatory adopters in Panel B, we see a strong indication of a reduction in the correlation between cashflows and accruals for voluntary firms, and this effect appears to be driven by voluntary K3 adopters with leases. Overall, in light of findings by Hellman et al. (2022) who show that groups mandatorily adopting K3 witness increasing correlations between cashflow and accruals, the evidence herein suggests that at least on average, the voluntary adoption of K3 may not have improved reporting quality to the same extent as mandatory K3 adoption.

[Table 8 about here]

[Table 9 about here]

5.4.1. Disclosures

In Table 10, we report the results of investigating changes in disclosures. As discussed above, voluntary K3 adopters are exempt from cash flow disclosures. However, if their

adoption is driven by capital market incentives, then we expect voluntary K3 adopters to increase their disclosure at least as much as, or even more than, mandatory K3 adopters. In Table 10, we proxy for disclosure quality with the natural logarithm of number of notes in the financial statement statements and investigate it as the outcome variable (LN_NOTES_{ft}). Panel A in Table 10 reports that voluntary K3 adopters increase the number of notes to statements, compared to K2 firms. However, when compared to mandatory K3 adopters (Panel B), we find that this increase in the amount of disclosure did not materialize for low incentive firms (negative and significant coefficient for $VOL\_K3_f \times POST_t$ across the specification) and can only be observed for voluntary K3 adopters with high intangible assets.

[Table 10 about here]

5.4.2. Real Earnings Management

If firms adopt K3 due to their capital market orientation, we expect them to exhibit less real earnings management, relative to both K2 adopters and mandatory K3 adopters. In Table 11, we investigate real earnings management (REM_{ft}) as the outcome variable. A decrease in REM_{ft} means a reduction in real earnings management. We only observe a significant reduction in real earnings management for voluntary K3 adopters with intangible assets, as compared to mandatory adopters (Panel B). Together with the disclosure analysis, this finding further corroborates the proposition that that firms with capital market incentives to adopt K3 may exhibit improved reporting outcomes; but that most firms that we classify as voluntary K3 adopters do not have such focus and do not exhibit improvements in their reporting.

[Table 11 about here]

6. Discussion of Results and Conclusions

In this study, we investigate the role of tax-accounting tradeoffs for firms facing a financial reporting standard choice. We use a regulatory change in Sweden that gave a choice for small firms to choose between a tax-oriented K2 and a more complex, capital-market oriented K3 reporting standard, whereas larger firms had to adopt K3 in a mandatory way. We show that firms with capital market reporting incentives were more likely to choose K3; that the degree of the tax burden may modify this decision; but also, that there are many firms that chose K3 even though they do not have any clearly expressed capital market reporting incentives.

To understand these results better, we investigate the divergences in tax outcomes and financial reporting outcomes between firms that chose a tax-oriented K2, firms that voluntarily adopted K3, and firms that adopted K3 in a mandatory fashion. This analysis shows that some firms with intangible assets, the presence of which we interpret as capital-market orientation, indeed accept higher tax burden as a cost of desired reporting strategies; and that their reporting outcomes improve relative to their peers. However, a large proportion of voluntary K3 adopters (our lower-bound estimate is 40% of all voluntary K3 adopters) do not exhibit any relative improvements relative to their K2- or K3-reporting peers; in fact, our evidence hints that these firms may technically report under K3, but their actual reporting practices are relatively more focused on tax outcomes.

An important feature of our setting is that all firms included in our sample were subject to a reporting change. As such, all our inferences about the effects of adopting a new standard are of a relative nature. It is possible that all firms, upon adopting a new standard, experienced significant changes in their tax and reporting outcomes. However, we expect that among the K2 adopters, significant reporting changes related to the standard change are unlikely, because this standard aims to align financial and tax accounting, a practice that many of these firms have likely already followed. If that is the case, our results could be interpreted as evidence that for most independent (and typically smaller) legal entities, the change in reporting

standard, or the observed voluntary choice of a higher-quality financial reporting standard, should not be automatically interpreted as evidence of increasing financial reporting quality.

It is possible that while the change in the regulatory environment may not significantly affect the reporting outcomes for most independent legal entities, such firms may still benefit from the reduction of information asymmetries in the capital markets as the heterogeneity in reporting practices is reduced. It is also important to note that in a Swedish setting, there is limited enforcement of the quality of the financial statements (though the submission of the financial statements is closely monitored by the regulatory bodies, with nearly 100 % of all legal entities submitting their financial statements every year). Such limited enforcement is likely to increase the probability of label adopters that may choose a more complex K3 standard because the costs of noncompliance are low. Under stricter enforcement, the observable effects of new standards may also be more pronounced. We welcome future insights into these questions.

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APPENDIX 1: Overview of K2, K3, and tax rules

Panel A: Areas with tax-accounting links

Topic	GAAP before 2014	K2	K3	Expected choice
R&D	As K3, but more flexible as the policy choice is made on a transaction-by-transaction basis.	Expense model	Policy choice between expense model and capitalization model.	K3 firms can choose to capitalize which may benefit users but will affect tax and involves a cost of preparation.
Revenue – fixed-price contracts in certain industries	CC (POC accepted)	CC (POC accepted)	POC (CC accepted)	POC gives earlier profit (and thus earlier tax) recognition than CC, but no difference in options between K3- and K2-firms.
Leasing	No capitalization	No capitalization	Capitalization of financial leases or no capitalization	K3 firms can choose to capitalize which may benefit users but will affect tax (depreciation and interest instead of leasing fee) and involves a cost of preparation.
Interest costs	Expense or capitalize	Expense	Expense or capitalize	K3 firms can choose to capitalize which may benefit users but will affect tax and involves a cost of preparation.

Panel B: areas with explicit tax rule:

Topic	Tax rule	GAAP before 2014	K2	K3	Expected choice
Revenue – time-charge contracts in certain industries	When invoiced (or when earned)	When invoiced (or when earned)	When invoiced (or when earned)	When earned	K3 firms have more accurate revenue reporting but incur a cost for adjusting the tax return.
Buildings – depreciation	Fixed percentages (normally shorter than useful life); no residual value	Useful life	Useful life or applying the tax rule	Useful life	K3 firms have more accurate depreciation reporting but incur a cost for adjusting the tax return.
Real estate (fixed assets) – revaluation	No tax consequences	Permitted	Not permitted	Permitted	K3 firms can recognize value increases in real estate through revaluation.
Real estate (fixed assets) – impairment	Impairment not allowed	Required but crude subjective judgment	Required but crude subjective judgment	Required and with sophisticated subjective judgment	K3 firms have more accurate impairment reporting.
PPE subsequent expenditure	Maintain/Enhance	Maintain/Enhance	Maintain/Enhance	Components approach	K3 firms have more accurate subsequent cost reporting but incur a cost for adjusting the tax return.
Machinery and	Accelerated depreciation	Useful life	Useful life or 5 years	Useful life	K3-reporting will be more complex than K2 as K3 will

equipment, depreciation	with short useful lives				have a mix of untaxed reserves and deferred tax items. K2 may utilize the 5-year default to influence reported operating profits.

APPENDIX 2: Variable descriptions

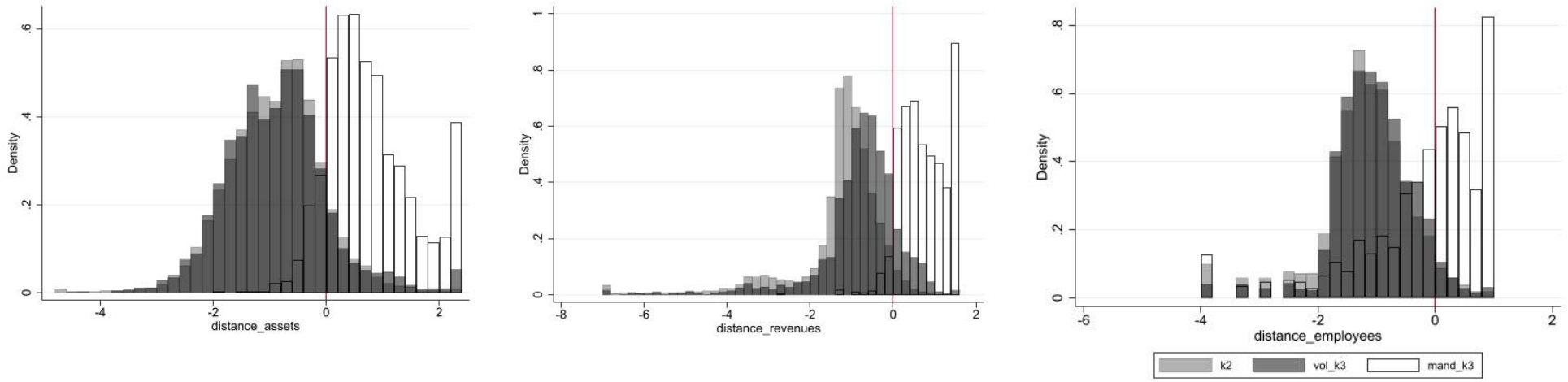
Continuous Variables	**Description**
AGE_{ft}	The natural logarithm of firm tenure in years since incorporation, winsorized at the 1% and 99% levels.
$ASSETS_{ft}$	Total assets, in SEK million, winsorized at the 1% and 99% levels.
$CORR3_{ft}$	3-year rolling correlation between total accruals and cash flows, winsorized at the 1% and 99% levels.
$EMPLOYEES_{ft}$	Number of employees, winsorized at 1% and 99% levels.
$INTANGRATIO_{ft}$	Intangible assets divided by total assets, winsorized at 1% and 99% levels, winsorized at the 1% and 99% levels.
$LEASE\_COUNT_{ft}$	Mentions of leases in the firm's annual report, winsorized at the 1% and 99% levels.
LEV_{ft}	Short- and long-term liabilities to credit institutions divided by total assets, winsorized at 1% and 99% levels.
$LIQUIDITY_{ft}$	Cash held divided by total assets, winsorized at the 1% and 99% levels.
LN_NOTES_{ft}	The natural logarithm of the number of notes in the financial statements, winsorized at the 1% and 99% levels.
$PPERATIO_{ft}$	Fixed assets divided by total assets, winsorized at the 1% and 99% levels.
$REM3_{ft}$	3-year rolling correlation between the managed and unmanaged components of ROA_{ft} based on abnormal discretionary accruals, as in Khurana, Moser, and Raman (2018), winsorized at the 1% and 99% levels.
ROA_{ft}	Profit after financial income, before allocations to tax reserves, divided by total assets, winsorized at the 1% and 99% levels.
$SALES\_GR_{ft}$	The growth in Sales for the year, winsorized at the 1% and 99% levels.
$SALES_{ft}$	Sales, in SEK million, winsorized at the 1% and 99% levels.
$SD3\_D\_ROA_{ft}$	3-year rolling standard deviation of changes in the return on assets, winsorized at the 1% and 99% levels.
$SIZE_{ft}$	The natural logarithm of total assets, winsorized at the 1% and 99% levels.
TAX_SALES_{ft}	Tax recognized divided by Sales for the year, winsorized at the 1% and 99% levels.
$TRADE_{ft}$	Payables divided by average total assets, winsorized at the 1% and 99% levels.
$TURNOVER_{ft}$	Sales divided by average total assets, winsorized at the 1% and 99% levels.
Indicator Variables	
$BIG4_{ft}$	equals 1 if the auditor is a Big 4 auditor, 0 otherwise
$EXCEO_{ft}$	equals 1 if the firm has an external CEO, defined as a CEO that is not a board member, 0 otherwise
$INTANG\_IND_{ft}$	equals 1 if $INTANGRATIO_{ft}$ is greater than 0, and 0 otherwise
$K2_f$	equals 1 if the firm is a K2 adopter, 0 otherwise

$LEASE\_IND_{ft}$	equals 1 if $LEASE\_COUNT_{ft}$ is greater than 0, and 0 otherwise
LEV_IND_{ft}	equals 1 if LEV_{ft} is greater than 0, and 0 otherwise
$LOSS3_{ft}$	equals 1 if the firm had negative pre-tax profit in any of the 3 most recent years, 0 otherwise
$LOSS_{ft}$	equals 1 if the firm has negative pre-tax profit in the current year, 0 otherwise
$MAND\_K3_{f}$	equals 1 if the firm is a mandatory K3 adopter, 0 otherwise
$POST_{ft}$	equals 1 after 2014 (2013 for early adopters), 0 otherwise
$TAX\_ALLOCATIONS_{ft}$	equals 1 if the firm uses allocations to tax reserves, 0 otherwise
VOL_K3_{f}	equals 1 if the firm is a voluntary K3 adopter, 0 otherwise

FIGURES

Figure 1. Distributions of the *distance-to-threshold* for revenues, assets, and number of employees

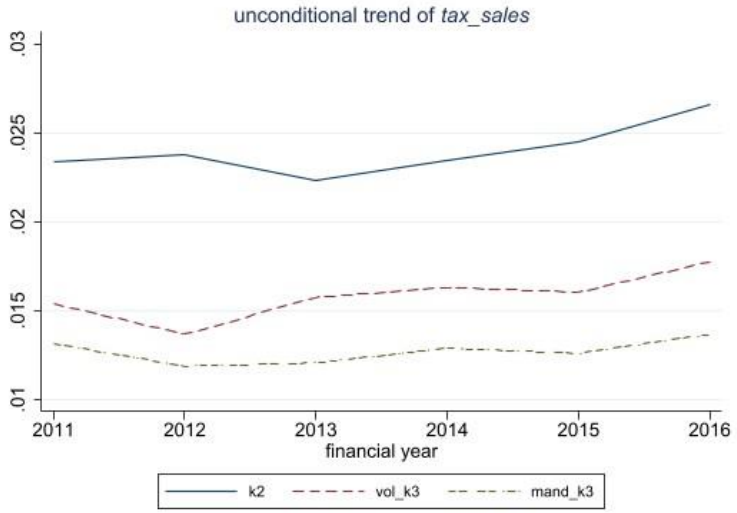
Panel A: Size distribution **Panel B: Distance distribution** **Panel C: Employees distribution**



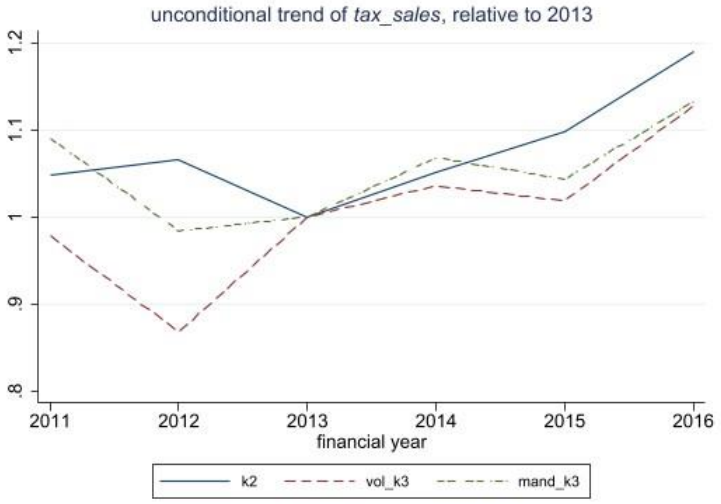
Notes: These figures present the distributions of the *distance-to-threshold* for revenues, assets, and number of employees for the three subgroups as of the year prior to adopting a K2 or K3 as a new reporting standard. The measures are winsorized at the 1% and 99% levels for visualization.

Figure 2: Tax burden development over time

Panel A: Trend in tax burden



Panel A: Trends in tax burden, relative to 2013



Notes: These figures present the time trends in the average value of TAX_SALES_{ft} in absolute values (Panel A) and relative to 2013 (Panel B), for the firms that are classified as K2 adopters, voluntary K3 adopters, and mandatory K3 adopters.

TABLES

Table 1. Descriptive statistics

Variable	N	Mean	SD	p10	p50	p90
ASSETS	27705	36.4651	252.4991	5.8360	18.1410	56.0700
SALES	27705	43.0519	51.1490	4.7470	29.1650	82.9720
EMPLOYEES	26527	20.2494	20.5676	0.0000	15.0000	42.0000
AGE	27705	13.6437	5.1222	5.4182	14.9980	18.9980
INTANGRATIO	27705	0.0045	0.0242	0.0000	0.0000	0.0000
LEV	27705	0.1529	0.2183	0.0000	0.0059	0.5114
LEASE_COUNT	27705	1.6574	3.2678	0.0000	0.0000	8.0000
LIQUIDITY	27705	0.2190	0.2215	0.0016	0.1493	0.5616
PPERATIO	27705	0.2893	0.3060	0.0008	0.1665	0.7942
ROA	27688	0.0984	0.1451	-0.0253	0.0720	0.2741
SALES_GR	26759	0.1005	0.4419	-0.1672	0.0369	0.3599
SIZE	27705	16.7044	0.9529	15.5796	16.7137	17.8421
TAX_SALES	27305	0.0196	0.0468	0.0000	0.0074	0.0406
TRADE	27081	0.0325	0.0329	0.0003	0.0236	0.0757
TURNOVER	27120	2.5357	2.1270	0.1381	2.0675	5.5616
CORR3	25055	0.0209	0.7437	-0.9651	0.0348	0.9772
LN_NOTES	27161	2.2306	0.5507	1.6094	2.3026	2.8332
REM3	23018	0.7665	0.4716	0.1070	0.9822	0.9999
SD3_D_ROA	24961	0.0776	0.1005	0.0083	0.0460	0.1743
TAX_ALLOCATIONS	27705	0.4769	0.4995	0	0	1
BIG4	27341	0.3805	0.4855	0	0	1
EXCEO	27705	0.0631	0.2431	0	0	0
INTANG_IND	27705	0.0876	0.2828	0	0	0
LEASE_IND	27705	0.2744	0.4462	0	0	1
LEV_IND	27705	0.5091	0.4999	0	1	1
LOSS	27705	0.1619	0.3684	0	0	1
LOSS3	27705	0.3202	0.4665	0	0	1

Notes: This table presents the descriptive statistics for the full sample for the period 2011-2016. Variable are defined in Appendix 2. All continuous variables are winsorized at the 1% and 99% levels.

Table 2. Descriptive statistics and mean comparisons by reporting standard

Panel A: K2 vs. Voluntary K3						
	(1)		(2)		(3)	
	K2		*VOL_K3*		(1) - (2)	
	mean	sd	mean	sd	diff	t
ASSETS	22.3440	26.4050	25.5890	37.7520	-3.245*	(-2.043)
SALES	29.4190	21.4350	48.4420	38.9700	-19.023***	(-11.767)
EMPLOYEES	17.0040	15.3510	19.6450	16.1790	-2.641***	(-3.727)
AGE	12.8060	4.9420	12.8950	4.9030	-0.089	(-0.416)
INTANGRATIO	0.0020	0.0170	0.0180	0.0470	-0.015***	(-7.854)
LEV	0.1630	0.2240	0.1280	0.1980	0.034***	(3.862)
LEASE_COUNT	1.4300	2.6560	3.8160	3.7380	-2.386***	(-15.152)
LIQUIDITY	0.2130	0.2230	0.2340	0.2080	-0.020*	(-2.228)
PPERATIO	0.3000	0.3130	0.2720	0.2780	0.028*	(2.235)
ROA	0.0950	0.1410	0.1010	0.1350	-0.006	(-0.973)
SALES_GR	0.1400	0.5330	0.1070	0.4560	0.033	(1.568)
SIZE	16.5600	0.8380	16.6120	0.8800	-0.052	(-1.370)
TAX_SALES	0.0200	0.0480	0.0130	0.0390	0.006***	(3.618)
TRADE	0.0320	0.0340	0.0400	0.0310	-0.008***	(-5.550)
TURNOVER	2.3770	1.9560	3.6470	2.7440	-1.270***	(-10.838)
CORR3	0.0140	0.7450	0.0530	0.7360	-0.039	(-1.160)
LN_NOTES	2.2620	0.4710	2.5600	0.4960	-0.298***	(-13.766)
REM3	0.6250	0.5840	0.9570	0.1710	-0.332***	(-23.485)
SD3_D_ROA	0.0750	0.0980	0.0750	0.0810	0.000	(0.071)
TAX_ALLOCATIONS	0.5050	0.5000	0.4230	0.4940	0.082***	(3.773)
BIG4	0.3410	0.4740	0.5720	0.4950	-0.231***	(-10.716)
EXCEO	0.0370	0.1880	0.1260	0.3320	-0.089***	(-6.472)
INTANG_IND	0.0640	0.2450	0.2300	0.4210	-0.165***	(-9.451)
LEASE_IND	0.3070	0.4610	0.6070	0.4890	-0.300***	(-14.146)
LEV_IND	0.5290	0.4990	0.4520	0.4980	0.077***	(3.519)
LOSS	0.1660	0.3720	0.1790	0.3830	-0.012	(-0.742)
LOSS3	0.3260	0.4690	0.3390	0.4740	-0.014	(-0.664)

Panel B: Mandatory vs. Voluntary K3						
	(1)		(2)		(3)	
	MAND_K3		*VOL_K3*		(1) - (2)	
	mean	sd	mean	sd	diff	t
ASSETS	198.7000	934.1990	45.8720	140.8300	152.828**	-2.778
SALES	185.7400	88.6150	41.8630	39.6340	143.877***	-26.632
EMPLOYEES	55.2010	38.6150	17.7130	16.3630	37.488***	-15.885
AGE	14.9480	3.4160	11.9200	5.3360	3.028***	-10.71
INTANGRATIO	0.0050	0.0230	0.0160	0.0460	-0.011***	(-5.295)
LEV	0.1150	0.1870	0.1210	0.1990	-0.006	(-0.442)
LEASE_COUNT	3.8740	3.9550	3.3560	3.7380	0.518	-1.925
LIQUIDITY	0.2170	0.2210	0.2320	0.2280	-0.016	(-1.014)
PPERATIO	0.2400	0.2520	0.2480	0.2840	-0.007	(-0.400)
ROA	0.0980	0.1210	0.0880	0.1400	0.011	-1.216
SALES_GR	0.0370	0.2210	0.1070	0.4550	-0.070**	(-3.081)
SIZE	18.2640	0.7390	16.7810	1.0440	1.482***	-25.407
TAX_SALES	0.0110	0.0120	0.0130	0.0390	-0.002	(-1.405)
TRADE	0.0380	0.0340	0.0360	0.0320	0.002	-0.814
TURNOVER	2.6820	1.9240	3.2430	2.8330	-0.561***	(-3.565)
CORR3	-0.1060	0.7160	0.0560	0.7360	-0.162**	(-3.085)
LN_NOTES	2.6950	0.4870	2.5030	0.5180	0.192***	-5.533
REM3	0.9880	0.0540	0.9620	0.1580	0.026**	-2.964
SD3_D_ROA	0.0430	0.0510	0.0860	0.1040	-0.043***	(-8.137)
TAX_ALLOCATIONS	0.4590	0.4990	0.3720	0.4840	0.087*	-2.536
BIG4	0.6170	0.4870	0.6090	0.4880	0.008	-0.246
EXCEO	0.2240	0.4180	0.1340	0.3410	0.091**	-3.302
INTANG_IND	0.1330	0.3400	0.2070	0.4050	-0.074**	(-2.983)
LEASE_IND	0.6190	0.4860	0.5300	0.4990	0.089**	-2.637
LEV_IND	0.4220	0.4950	0.4100	0.4920	0.012	-0.355
LOSS	0.1220	0.3280	0.2040	0.4030	-0.082***	(-3.360)
LOSS3	0.2450	0.4310	0.3590	0.4800	-0.114***	(-3.692)

Notes: these tables present the descriptive statistics and mean comparisons between K2 and voluntary K3 firms (Panel A), as of the adoption year, as well as for mandatory vs. voluntary K3 adopters (Panel B) as of 2013. All variables are defined in Appendix 2. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3: Voluntary K3 adoption by industry

	K2 adopters		Voluntary K3 adopters		Total	
	N	%	N	%	N	%
Energy & Environment	72	77.42	21	22.58	85	100
Materials	92	92.93	7	7.07	99	100
Industrial Goods	394	82.6	83	17.4	466	100
Construction	703	95	37	5	725	100
Shopping Goods	581	92.52	47	7.48	615	100
Convenience Goods	331	56.01	260	43.99	581	100
Health & Education	202	91.82	18	8.18	211	100
Finance & Real Estate	476	90.67	49	9.33	490	100
IT & Electronics	80	76.92	24	23.08	103	100
Telecom & Media	20	74.07	7	25.93	27	100
Corporate services	709	91.72	64	8.28	759	100
Other	131	92.91	10	7.09	138	100
Classification missing	26	92.86	2	7.14	27	100
Total	3,817	85.9	629	14.1	4,326	100

Notes: This table presents the industry distributions for K2 and voluntary K3 adopters. Industry classification is based on SERRANO classification.

Table 4: Frequency of voluntary K3 adoption choice by incentives

Panel A: Percentage of voluntary K3 adopters by reporting incentives

Voluntary K3 adoption	*INTANG_ IND*	*LEASE_COUNT_ Q4*	*PPERATIO_ Q4*	*TAX_ ALLOCATIONS*	*LEV_ Q4*	*TRADE_ Q4*
0	12%	13%	15%	16%	14%	14%
1	38%	17%	13%	12%	14%	14%
Total	14%	14%	14%	14%	14%	14%

Panel B: Percentage of voluntary K3 adopters by intangible assets and tax burden

INTANG_IND		Quartile of *TAX_SALES* in 2013				Total
		Q1	Q2	Q3	Q4	
	0	13%	13%	14%	8%	12%
	1	44%	41%	39%	16%	38%
Total		16%	16%	16%	9%	14%

Notes: these tables report the percentage of small firms voluntarily adopting K3 by incentive levels (one way split; Panel A) and by intangible assets and tax burden (two-way split, Panel B). All variables are as defined in Appendix 2.

Table 5. Voluntary K3 adoption choice

VARIABLES	(1) *VOL_K3*	(2) *VOL_K3*	(3) *VOL_K3*	(4) *VOL_K3*	(5) *VOL_K3*	(6) *VOL_K3*
INTANGRATIO	15.6898***	14.4105***				
	(2.8427)	(2.2840)				
INTANG_IND			1.2097***	1.2937***	1.4007***	1.3933***
			(0.1656)	(0.1997)	(0.1756)	(0.1647)
*INTANG_IND*LOSS*			0.6649	0.4277		
			(0.4043)	(0.2920)		
LEASE_COUNT	0.1740***	0.1552***				
	(0.0544)	(0.0571)				
LEASE_IND			1.0126***	0.8950***	1.0241***	0.9282***
			(0.3081)	(0.2940)	(0.3075)	(0.3040)
TAX_ALLOCATIONS	-0.3658**	-0.3766**	-0.3166**	-0.3582**	-0.2862*	-0.2844
	(0.1486)	(0.1700)	(0.1393)	(0.1581)	(0.1706)	(0.1914)
TRADE	-2.7248	-2.6198	-2.7746	-2.2819	-4.7537*	-2.1771
	(1.9728)	(2.3018)	(1.7511)	(1.9412)	(2.7397)	(2.0066)
LEV	-0.4844	-0.2782				
	(0.4614)	(0.4600)				
LEV_IND			-0.3465***	-0.3359**	-0.3492**	-0.3809**
			(0.1304)	(0.1499)	(0.1686)	(0.1648)
PPERATIO	0.4809	0.0635	0.4184	0.0776	0.2757	0.0349
	(0.2952)	(0.2436)	(0.3517)	(0.3044)	(0.5373)	(0.3698)
ROA	0.7011**	0.8267**	0.5818**	0.5927	0.0813	0.3692
	(0.3020)	(0.3519)	(0.2851)	(0.4170)	(0.3891)	(0.3527)
*ROA*LOSS*			-1.2530	-0.6714		
			(1.5739)	(1.8319)		
LOSS			-0.0947	-0.1535		
			(0.2584)	(0.2618)		
SIZE	0.9419***	0.7700***	0.8939***	0.7273***	3.8077**	4.0521***
	(0.1329)	(0.1105)	(0.1205)	(0.0965)	(1.8873)	(1.4349)
AGE	0.0043	-0.0092	0.0027	-0.0095	0.0030	-0.0079
	(0.0141)	(0.0116)	(0.0149)	(0.0133)	(0.0172)	(0.0170)
TURNOVER	0.4763***	0.2850***	0.4631***	0.2630***	0.5250***	0.2839***
	(0.0747)	(0.0527)	(0.0750)	(0.0476)	(0.0483)	(0.0539)
LIQUIDITY	0.1298	-0.1178	-0.0230	-0.3340	-0.0652	-0.4340
	(0.6497)	(0.6067)	(0.5792)	(0.5273)	(0.6122)	(0.5363)
SALES_GR	-0.1749*	-0.1582*	-0.1747*	-0.1612*	-0.2773	-0.2721*
	(0.0909)	(0.0808)	(0.1047)	(0.0887)	(0.2076)	(0.1648)
BIG4	0.6101***	0.6358***	0.7792***	0.7891***	0.7718***	0.7833***
	(0.0995)	(0.1235)	(0.1672)	(0.2005)	(0.1807)	(0.2227)
EXCEO	1.1844***	1.2971***	1.1517***	1.2500***	1.2046***	1.2309***
	(0.1857)	(0.1716)	(0.1920)	(0.1733)	(0.1866)	(0.1680)
LOSS3	0.0697	0.2063	0.0403	0.2255	0.0140	0.1498
	(0.1826)	(0.1894)	(0.2148)	(0.2189)	(0.2107)	(0.2215)
Constant	- 19.7107***	- 16.3348***	- 18.8609***	- 15.5209***	- -70.0761**	- 73.6358***
	(2.4369)	(1.9925)	(2.2508)	(1.7840)	(33.0999)	(25.2443)

Observations	4,163	4,163	4,163	4,163	3,514	3,514
# of voluntary K3 adopters	588	588	588	588	529	529
Industry indicators	No	Yes	No	Yes	No	Yes
Size thresholds	No	No	No	No	Yes	Yes
Sensitivity (TP)	28.06%	38.27%	26.19%	34.86%	29.49%	38.75%
Specificity (TN)	98.01%	97.93%	98.17%	97.75%	97.84%	97.37%
Overall	88.13%	89.50%	88.06%	88.92%	87.60%	88.59%
AUC	0.81	0.83	0.80	0.83	0.82	0.85
Pseudo R2	0.224	0.271	0.212	0.265	0.229	0.286

Notes: This table reports the choice models for the voluntary adoption of K3 for the sample of small firms. Models (1) and (2) are logit models corresponding to Equation (1), without and with industry indicators, respectively. Models (3) and (4) are logit models corresponding to Equation (1), where selected variables are converted to indicators and interacted with a pre-tax loss indicator, without and with industry indicators, respectively. Models (5) and (6) include size threshold indicators (untabulated), without and with industry indicators, respectively. All variables are defined in Appendix 2. Standard errors are clustered at the industry level. *** p<0.01, ** p<0.05, * p<0.1.

Table 6: Tax burden changes around the change of the reporting standard

Panel A: Voluntary K3 vs. K2

	(1) TAX_SALES_{ft}	(2) TAX_SALES_{ft}	(3) TAX_SALES_{ft}	(4) TAX_SALES_{ft}	(5) TAX_SALES_{ft}	(6) TAX_SALES_{ft}	(7) TAX_SALES_{ft}	(8) TAX_SALES_{ft}
VOL_K3×POST	-0.00113	-0.00116	-0.00246*	-0.00196	-0.00240	-0.00194	-0.00360	-0.00271
	(-0.886)	(-0.967)	(-1.698)	(-1.436)	(-0.919)	(-0.794)	(-1.364)	(-1.106)
VOL_K3×POST×INTANG_IND			0.00650**	0.00395			0.00640**	0.00396
			(2.069)	(1.340)			(2.022)	(1.329)
VOL_K3×POST×LEASE_IND					0.00204	0.00127	0.00187	0.00122
					(0.701)	(0.464)	(0.646)	(0.447)
Observations	20,402	19,903	20,402	19,903	20,402	19,903	20,402	19,903
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.648	0.665	0.648	0.665	0.648	0.665	0.648	0.666

Panel B: Voluntary vs. Mandatory K3

	(1) TAX_SALES_{ft}	(2) TAX_SALES_{ft}	(3) TAX_SALES_{ft}	(4) TAX_SALES_{ft}	(5) TAX_SALES_{ft}	(6) TAX_SALES_{ft}	(7) TAX_SALES_{ft}	(8) TAX_SALES_{ft}
VOL_K3×POST$_t$	-0.00044	-0.00061	-0.00163	-0.00119	-0.00289	-0.00146	-0.00401	-0.00200
	(-0.305)	(-0.429)	(-1.067)	(-0.812)	(-1.056)	(-0.562)	(-1.440)	(-0.768)
VOL_K3×POST×INTANG_IND			0.00628**	0.00271			0.00625**	0.00273
			(2.143)	(0.942)			(2.121)	(0.943)
VOL_K3×POST×LEASE_IND					0.00415	0.00142	0.00403	0.00134
					(1.445)	(0.536)	(1.409)	(0.502)
Observations	4,383	4,310	4,383	4,310	4,383	4,310	4,383	4,310
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.619	0.607	0.619	0.607	0.619	0.607	0.620	0.607

Notes: These tables report the results for difference-in-differences analysis for the period (2011-2016). The outcome variable is TAX_SALES_{ft}. Panel A compares K2 firms to voluntary K3 firms using an entropy balanced sample. Panel B compares voluntary K3 firms to mandatory K3 firms using an entropy balanced sample. Odd columns present regressions without controls. Even columns present regressions with controls. Standard errors are clustered at the firm level. Variables are defined in Appendix 2. *** p<0.01, ** p<0.05, * p<0.1.

Table 7: ROA changes around the change of the reporting standard

Panel A: Voluntary K3 vs. K2								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}
VOL_K3×POST	-0.00157	-0.00173	-0.00050	0.00050	0.00538	0.00626	0.00641	0.00808
	(-0.226)	(-0.281)	(-0.077)	(0.093)	(0.700)	(0.881)	(0.776)	(1.017)
VOL_K3×POST×INTANG_IND			-0.00460	-0.01027			-0.00345	-0.00916
			(-0.206)	(-0.472)			(-0.155)	(-0.423)
VOL_K3×POST×LEASE_IND					-0.01148	-0.01308	-0.01180	-0.01279
					(-0.855)	(-1.065)	(-0.923)	(-1.104)
Observations	24,649	23,841	24,649	23,841	24,649	23,841	24,649	23,841
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.553	0.625	0.554	0.625	0.554	0.625	0.554	0.625

Panel B: Voluntary vs. Mandatory K3								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}	ROA_{ft}
VOL_K3×POST	-0.01548*	-0.01929**	-0.01970*	-0.02206**	-0.01697	-0.01756	-0.02182	-0.02092
	(-1.715)	(-2.233)	(-1.950)	(-2.302)	(-1.022)	(-1.195)	(-1.247)	(-1.331)
VOL_K3×POST×INTANG_IND			0.02919*	0.01884			0.02965*	0.01925
			(1.767)	(1.021)			(1.783)	(1.015)
VOL_K3×POST×LEASE_IND					0.00228	-0.00324	0.00320	-0.00236
					(0.114)	(-0.187)	(0.159)	(-0.136)
Observations	5,630	5,106	5,630	5,106	5,630	5,106	5,630	5,106
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.603	0.676	0.603	0.677	0.603	0.676	0.603	0.677

Notes: These tables report the results for difference-in-differences analysis for the period (2011-2016). The outcome variable is ROA_{ft}. Panel A compares K2 firms to voluntary K3 firms using an entropy balanced sample. Panel B compares voluntary K3 firms to mandatory K3 firms using an entropy balanced sample. Odd columns present regressions without controls. Even columns present regressions with controls. Standard errors are clustered at the firm level. Variables are defined in Appendix 2. *** p<0.01, ** p<0.05, * p<0.1.

Table 8: Change-in-ROA volatility changes around the change of the reporting standard

Panel A: Voluntary K3 vs. K2

	(1) $SD3\_D\_ROA_{ft}$	(2) $SD3\_D\_ROA_{ft}$	(3) $SD3\_D\_ROA_{ft}$	(4) $SD3\_D\_ROA_{ft}$	(5) $SD3\_D\_ROA_{ft}$	(6) $SD3\_D\_ROA_{ft}$	(7) $SD3\_D\_ROA_{ft}$	(8) $SD3\_D\_ROA_{ft}$
VOL_K3×POST	0.00038	0.00180	0.00299	0.00434	0.00125	0.00382	0.00380	0.00624
	(0.084)	(0.406)	(0.661)	(0.981)	(0.179)	(0.562)	(0.551)	(0.925)
VOL_K3×POST×INTANG_IND			-0.01247	-0.01234			-0.01228	-0.01221
			(-0.876)	(-0.932)			(-0.862)	(-0.919)
VOL_K3×POST×LEASE_IND					-0.00145	-0.00331	-0.00142	-0.00313
					(-0.156)	(-0.366)	(-0.152)	(-0.345)
Observations	22,663	22,253	22,663	22,253	22,663	22,253	22,663	22,253
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.567	0.598	0.567	0.598	0.567	0.598	0.567	0.598

Panel B: Voluntary vs. Mandatory K3

	(1) $SD3\_D\_ROA_{ft}$	(2) $SD3\_D\_ROA_{ft}$	(3) $SD3\_D\_ROA_{ft}$	(4) $SD3\_D\_ROA_{ft}$	(5) $SD3\_D\_ROA_{ft}$	(6) $SD3\_D\_ROA_{ft}$	(7) $SD3\_D\_ROA_{ft}$	(8) $SD3\_D\_ROA_{ft}$
VOL_K3×POST	-0.00385	-0.00210	-0.00400	-0.00215	-0.01968	-0.01618	-0.02070	-0.01718
	(-0.539)	(-0.318)	(-0.512)	(-0.294)	(-1.607)	(-1.477)	(-1.621)	(-1.493)
VOL_K3×POST×INTANG_IND			0.00476	0.00342			0.00726	0.00662
			(0.240)	(0.201)			(0.391)	(0.411)
VOL_K3×POST×LEASE_IND					0.02677*	0.02324*	0.02764*	0.02404*
					(1.826)	(1.741)	(1.885)	(1.800)
Observations	5,197	4,814	5,197	4,814	5,197	4,814	5,197	4,814
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.634	0.590	0.635	0.591	0.636	0.594	0.637	0.595

Notes: These tables report the results for difference-in-differences analysis for the period (2011-2016). The outcome variable is $SD3\_D\_ROA_{ft}$. Panel A compares K2 firms to voluntary K3 firms using an entropy balanced sample. Panel B compares voluntary K3 firms to mandatory K3 firms using an entropy balanced sample. Odd columns present regressions without controls. Even columns present regressions with controls. Standard errors are clustered at the firm level. Variables are defined in Appendix 2. *** p<0.01, ** p<0.05, * p<0.1.

Table 9: Changes in correlations between accruals and cash flows around the change of the reporting standard

Panel A: Voluntary K3 vs. K2

	(1) $CORR3_{ft}$	(2) $CORR3_{ft}$	(3) $CORR3_{ft}$	(4) $CORR3_{ft}$	(5) $CORR3_{ft}$	(6) $CORR3_{ft}$	(7) $CORR3_{ft}$	(8) $CORR3_{ft}$
VOL_K3×POST	-0.04601	-0.04800	-0.01194	-0.01522	-0.01087	-0.01791	0.01530	0.00815
	(-1.107)	(-1.150)	(-0.278)	(-0.353)	(-0.194)	(-0.318)	(0.266)	(0.142)
VOL_K3×POST×INTANG_IND			-0.16140	-0.15575			-0.16325	-0.15816
			(-1.358)	(-1.344)			(-1.381)	(-1.372)
VOL_K3×POST×LEASE_IND					-0.05784	-0.04940	-0.04440	-0.03769
					(-0.698)	(-0.593)	(-0.549)	(-0.464)
Observations	22,709	22,520	22,709	22,520	22,709	22,520	22,709	22,520
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.314	0.315	0.315	0.316	0.314	0.316	0.315	0.316

Panel B: Voluntary vs. Mandatory K3

	(1) $CORR3_{ft}$	(2) $CORR3_{ft}$	(3) $CORR3_{ft}$	(4) $CORR3_{ft}$	(5) $CORR3_{ft}$	(6) $CORR3_{ft}$	(7) $CORR3_{ft}$	(8) $CORR3_{ft}$
VOL_K3×POST	-0.19518**	-0.20441**	-0.23039**	-0.24172**	-0.02469	-0.04466	-0.06247	-0.08560
	(-2.208)	(-2.371)	(-2.388)	(-2.563)	(-0.220)	(-0.408)	(-0.583)	(-0.818)
VOL_K3×POST×INTANG_IND			0.21966	0.23216			0.20281	0.21574
			(1.056)	(1.125)			(1.006)	(1.076)
VOL_K3×POST×LEASE_IND					-0.28800*	-0.26843	-0.27934*	-0.25817
					(-1.661)	(-1.589)	(-1.650)	(-1.567)
Observations	4,866	4,856	4,866	4,856	4,866	4,856	4,866	4,856
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.315	0.316	0.316	0.317	0.317	0.318	0.318	0.319

Notes: These tables report the results for difference-in-differences analysis for the period (2011-2016). The outcome variable is $CORR3_{ft}$. Panel A compares K2 firms to voluntary K3 firms using an entropy balanced sample. Panel B compares voluntary K3 firms to mandatory K3 firms using an entropy balanced sample. Odd columns present regressions without controls. Even columns present regressions with controls. Standard errors are clustered at the firm level. Variables are defined in Appendix 2. *** p<0.01, ** p<0.05, * p<0.1.

Table 10: Changes in financial statement disclosures around the change of the reporting standard

Panel A: Voluntary K3 vs. K2

	(1) LN_NOTES_{ft}	(2) LN_NOTES_{ft}	(3) LN_NOTES_{ft}	(4) LN_NOTES_{ft}	(5) LN_NOTES_{ft}	(6) LN_NOTES_{ft}	(7) LN_NOTES_{ft}	(8) LN_NOTES_{ft}
VOL_K3×POST	0.35290***	0.34428***	0.32187***	0.31673***	0.29423***	0.28380***	0.27286***	0.26461***
	(12.309)	(11.877)	(12.827)	(12.589)	(9.615)	(9.287)	(7.881)	(7.618)
VOL_K3×POST×INTANG_IND			0.14165	0.12690			0.12878	0.11429
			(1.634)	(1.453)			(1.595)	(1.404)
VOL_K3×POST×LEASE_IND					0.09569*	0.09764*	0.08448*	0.08852*
					(1.785)	(1.826)	(1.760)	(1.839)
Observations	24,186	23,389	24,186	23,389	24,186	23,389	24,186	23,389
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.671	0.679	0.672	0.681	0.676	0.685	0.677	0.686

Panel B: Voluntary vs. Mandatory K3

	(1) LN_NOTES_{ft}	(2) LN_NOTES_{ft}	(3) LN_NOTES_{ft}	(4) LN_NOTES_{ft}	(5) LN_NOTES_{ft}	(6) LN_NOTES_{ft}	(7) LN_NOTES_{ft}	(8) LN_NOTES_{ft}
VOL_K3×POST	-0.06398*	-0.08138**	-0.08236**	-0.10060***	-0.02302	-0.04564	-0.04432	-0.06815
	(-1.859)	(-2.333)	(-2.167)	(-2.588)	(-0.427)	(-0.853)	(-0.812)	(-1.248)
VOL_K3×POST×INTANG_IND			0.11103*	0.11763*			0.11949*	0.12181*
			(1.707)	(1.954)			(1.735)	(1.914)
VOL_K3×POST×LEASE_IND					-0.07953	-0.06442	-0.07735	-0.06018
					(-1.250)	(-1.010)	(-1.228)	(-0.953)
Observations	5,566	5,046	5,566	5,046	5,566	5,046	5,566	5,046
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.727	0.724	0.728	0.725	0.730	0.726	0.731	0.727

Notes: These tables report the results for difference-in-differences analysis for the period (2011-2016). The outcome variable is LN_NOTES_{ft}. Panel A compares K2 firms to voluntary K3 firms using an entropy balanced sample. Panel B compares voluntary K3 firms to mandatory K3 firms using an entropy balanced sample. Odd columns present regressions without controls. Even columns present regressions with controls. Standard errors are clustered at the firm level. Variables are defined in Appendix 2. *** p<0.01, ** p<0.05, * p<0.1.

Table 11: Changes in real earnings management around the change of the reporting standard

Panel A: Voluntary K3 vs. K2

	(1) REM_{ft}	(2) REM_{ft}	(3) REM_{ft}	(4) REM_{ft}	(5) REM_{ft}	(6) REM_{ft}	(7) REM_{ft}	(8) REM_{ft}
VOL_K3×POST	0.01910	0.01831	0.01627	0.01779	-0.02402	-0.02082	-0.02668	-0.02095
	(0.809)	(0.781)	(0.626)	(0.683)	(-0.784)	(-0.672)	(-0.806)	(-0.628)
VOL_K3×POST×INTANG_IND			-0.00358	-0.01609			-0.00215	-0.01391
			(-0.056)	(-0.256)			(-0.032)	(-0.217)
VOL_K3×POST×LEASE_IND					0.08196	0.07431	0.08122	0.07282
					(1.632)	(1.467)	(1.624)	(1.443)
Observations	20,860	20,471	20,860	20,471	20,860	20,471	20,860	20,471
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.194	0.199	0.194	0.200	0.195	0.200	0.196	0.201

Panel B: Voluntary vs. Mandatory K3

	(1) REM_{ft}	(2) REM_{ft}	(3) REM_{ft}	(4) REM_{ft}	(5) REM_{ft}	(6) REM_{ft}	(7) REM_{ft}	(8) REM_{ft}
VOL_K3×POST	-0.06640	-0.03637	-0.02756	0.01029	-0.05208	0.00851	-0.01458	0.05445
	(-1.434)	(-0.861)	(-0.693)	(0.302)	(-0.799)	(0.157)	(-0.224)	(1.140)
VOL_K3×POST×INTANG_IND			-0.23527	-0.25924*			-0.23790	-0.26139*
			(-1.538)	(-1.866)			(-1.562)	(-1.899)
VOL_K3×POST×LEASE_IND					-0.02112	-0.07687	-0.01526	-0.07312
					(-0.237)	(-1.037)	(-0.185)	(-1.069)
Observations	3,523	3,153	3,523	3,153	3,523	3,153	3,523	3,153
Controls	No	Yes	No	Yes	No	Yes	No	Yes
Adj. R2	0.241	0.266	0.252	0.279	0.241	0.267	0.252	0.280

Notes: These tables report the results for difference-in-differences analysis for the period (2011-2016). The outcome variable is REM_{ft}. Panel A compares K2 firms to voluntary K3 firms using an entropy balanced sample. Panel B compares voluntary K3 firms to mandatory K3 firms using an entropy balanced sample. Odd columns present regressions without controls. Even columns present regressions with controls. Standard errors are clustered at the firm level. Variables are defined in Appendix 2. *** p<0.01, ** p<0.05, * p<0.1.