

Influence of the Sarbanes-Oxley Act on Financial Reporting Quality: An Overview of EU Firms Cross-Listed in the USA

Ujkan Bajra (✉ ujkan.bajra@ierls.net)

University of Prishtina <https://orcid.org/0000-0002-7040-5690>

Rrustem Asllanaj

Universiteti i Prishtines Hasan Prishtina

Original Paper

Keywords: Financial Reporting Quality, Corporate Governance Quality, Discretionary Accruals, Earnings Management, Sarbanes-Oxley Act, Regulatory Policies

Posted Date: February 3rd, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-198068/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License. [Read Full License](#)

Abstract

This paper investigate whether compliance with the Sarbanes–Oxley Act of 2002 (SOX) Sect. 302 (financial reporting) and 404 (internal controls) enhances financial reporting quality (FRQ). This study focuses on EU publicly traded companies that are cross-listed in the US markets. Using a novel approach with respect to operationalization of the SOX, the empirical research integrated into this paper advances the understanding of financial reporting quality for both practitioners and policymakers. The study argues that financial reporting quality increased after SOX entered into force but, notably, we find that FRQ improves with compliance with SOX302 but not with SOX404. Examination of the latter relationship at the subsection level also reveals that compliance with certain SOX requirements is not satisfactory. We find that three out of six subsections of SOX302 are directly associated with financial reporting, while subsections (1), (5) and (6) of SOX302 are not related with FRQ, indicating that the management team, albeit not entirely, provides a reliable financial reporting systems. We also find that compliance with some SOX404's subsections has been relatively low (i.e. subsections (1) and (3) of SOX404)), suggesting that corporations have not established and are not maintaining suitable internal control systems over financial reporting.

Introduction

The financial scandals that occurred in the last decade led to the Sarbanes-Oxley Act (SOX) of 2002 being passed. The Act aimed to reconfigure the corporate governance mosaic and restore investors' confidence in financial markets. Indeed, SOX not only applies to a specific concern (e.g. earnings management, financial reporting quality etc.), but seeks to move corporate governance in specific directions to enhance the reliability and accuracy of financial reporting, the functionality of internal controls, information-security activities, and risk management, in the process creating new responsibilities for the audit committee and external auditing services, among others (Berninger et al., 2018; Drogalas et al., 2020).

The quality of financial reporting may be influenced by managerial manipulations of accounting statements, such as overstating revenues and expenditures or understating other accounting categories using a range of accounting practices (Zhou et al., 2017). Accordingly, two key mechanisms designed to prevent such manipulations and ensure high quality financial reporting are the efficiency of corporate governance and regulatory policies (Bradbury and Mear, 2017; Melis and Carta, 2010; Pereira and Alves, 2017).

The relationship between regulatory policies and corporate governance as a whole has been investigated extensively (Chang et al., 2017). Yet several issues are still controversial and warrant further inquiry. The first issue is the operationalization of SOX compliance. Many studies use individual corporate mechanisms (i.e. audit committee expertise, board size, board independence) to proxy for compliance with SOX provisions (Fischer et al., 2014; Kang and Kim, 2012; Khan et al., 2020; Kinney and Shepardson, 2011), but few studies have operationalized compliance with SOX as a direct measure of compliance with particular sections and provisions. The second underexplored issue is how SOX affects non-US firms cross-listed in the USA, with especially those belonging to European countries yet to be sufficiently addressed. These firms are interesting to study because their cost of compliance with regulatory policies is higher as they are subject not only to SOX, but also to their domestic and/or international legislation. This is not a trivial issue as the costs of regulatory compliance are not marginal (Krishnan et al., 2008; Li, 2014).

From the corporate governance perspective, the most contentious parts of SOX concern financial reporting (section 302) and internal controls (section 404), which continue to attract widespread attention from scholars because they determine the quality of financial reporting and corporate effectiveness as a whole (Ettredge et al. 2018; Fischer et al. 2014). In effect, SOX302 makes senior executives focus on their responsibility to ensure a reliable financial reporting system, while SOX404 adds further emphasis to SOX302 by requiring management to annually assess the internal controls as well as an external audit or opinion on their reliability. Investigating compliance at the cumulative (section) and constituent (subsection) levels, this paper advances our knowledge about changes in corporate governance and financial reporting quality following the passing of SOX. The study findings are thus of interest to both practitioners and policymakers. Another distinctive feature of the study is the idiosyncratic setting examined given that most prior studies in the area focused on US firms. EU firms are a particularly interesting object of inquiry because they face higher costs of compliance with regulatory policies since they are not only subject to SOX but also to the eighth Directive on Statutory Auditing (8thCLD) and the International Financial Reporting Standards (IFRS).

The study makes the following contributions to the literature. First, it shows whether the quality of corporate governance with respect to financial reporting and internal controls has increased since SOX went into effect. This issue is important because regulators are constantly urging firms to eliminate weaknesses in their corporate governance. To confirm this, we run regression analyses which show that not all SOX provisions achieve the same effect in terms of ensuring financial reporting quality. Second, our findings hold implications for policymakers regarding whether they should focus on regulatory provisions used to increase corporate responsibility for financial reporting, on internal controls at the composite level (sections), or on the more detailed component level (subsections). Moreover, this study reveals there is no monotonic association between SOX and FRQ, at least at the level of components. Our third contribution is by highlighting the effects of SOX on cross-listed EU firms, thereby also providing guidance for firms which intend to become listed in the US market in the future.

The next section provides the background for the study and develops our hypotheses. The research design and methodology are outlined in the second section. The third section presents the basic empirical analysis, while the final section discusses the findings and draws conclusions along with some policy implications of our findings.

Literature Review And Hypothesis Development

Literature Review

A review of the literature does not reveal a common concept of corporate governance, particularly because of the political, economic, ethical, environmental, cultural and religious systems that states have put in place over the years (Franks and Mayer 2017; Hylton Meier and Meier 2013; Im and Nam 2019). For example, Jackson (2010), Franks et al. (2009) emphasise that in the Anglo-American system the governance concept is shareholder-oriented and market-based, while the ownership of corporations is scattered. This governance concept shows that half the board or audit committee members are independent. Contrary to this practice, in EU corporate governance, reform is an ongoing process and only in the last decade has the EU successfully pursued a policy for advancing governance practices (e.g. board of directors, audit committees), protecting shareholder rights, increasing the flow of information, establishing CSR indicators and so on (Gamerschlag et al., 2011; Gull et al., 2020; Hopt, 2015; Hylton Meier and Meier, 2013; Maama and Mkhize, 2020). Further, the quality of corporate governance relates to: (1) better functioning of corporate mechanisms and the monitoring and maintenance of the internal controls system for financial reporting; and (2) firms' internal procedures and adaptability in response to regulatory policy. Bajra and Cadez (2018) find the independence of the board of directors, financial experience, size, and the frequency of meetings play an active role in increasing the quality of governance (Cho et al., 2017). Likewise, Jeanjean and Stolowy (2008) document that the effect of corporate mechanisms depends on the implementation of corporate policies.

Anecdotal evidence supports the notion the requirements of Sections 302 and 404 have established a common practice regarding corporate governance for firms that are cross-listed and represented by any of the American Depository Receipts (ADR) programmes. Theoretically, this means that firms have already established good corporate governance management which promotes high-quality financial reporting systems and effective internal control systems (Linck et al., 2009; Veldman and Willmott, 2016). Accordingly, current practices show that credible corporate governance requires the establishment of clear regulatory policies and accurate financial reporting (disclosure) (Hoitash et al., 2009; Kumar et al., 2012; Venturelli et al., 2017). On the other hand, external factors like the global financial crisis of 2008 in the USA and the debt crisis of 2010 in Europe triggered the dilemma of whether the corporate governance mosaic was being maintained and updated with relevant policies. With this rationale, the quality of financial reporting may have been adversely affected by the financial crises, causing the governance mosaic to shrink (Asel et al., 2011; García-Benau et al., 2013).

The primary reason for financial reporting is to keep shareholders and other interested parties regularly and transparently informed. In the interest of comparability and objectivity, regulatory policies set standards on how financial statements or reports should be prepared (Taipaleenmäki and Ikäheimo, 2013). Indeed, the standard methods firms use to report their financial results determine the quality of their financial reporting (Sunder, 2016). In this sense, financial statements are considered well prepared when they present the true and fair financial position and performance of a company in line with the legal framework (Bradley and Chen, 2011).

In contrast, the discretionary component identifies management choices which often interchangeably denote earnings management, financial reporting quality, income smoothing, accounting disclosures, earnings quality etc. In contrast to the sound conceptual definition of management choices, no direct methods exist to empirically measure these accounting categories (Givoly et al., 2010). A commonly used proxy is discretionary accruals (Badertscher et al., 2012), which signal the degree to which management influences financial reporting as per their disclosures (Caskey and Laux, 2017; Jorgensen and Kirshenheiter, 2012). As noted by Iatridis and Kadorinis (Iatridis and Kadorinis, 2009), fewer accounting disclosures are followed by the occurrence of accrual earnings (low quality financial reporting), which is linked to firms' tendency to exceed financial analysts' forecasts and to report a loss or low profitability and high debt levels (high leverage measures). Further, firms that tend to make more accounting disclosures are less likely to provide low financial reporting quality, respectively earnings management. In fact, earnings management proxied by discretionary accruals is driven by the personal interests of the management team (Ayers et al., 2006; Degeorge et al., 1999). This is particularly apparent when their compensation depends on the firm's targets or objectives (sales growth, market share growth, etc.). Although the evidence shows that many accounting techniques are used to report financial statements (Iatridis and Kadorinis, 2009), financial records (earnings or expenditures) are typically manipulated using alternative accounting methods with respect to earnings quality.

The first method is to increase earnings in the current period on the income statement by artificially inflating revenues or by decreasing expenses in the current period (Trompeter et al., 2013). This accounting approach makes a company's financial condition look better than it is in order to meet financial analysts' forecasts in their own interest. The second method for manipulating financial statements is to decrease current earnings by deflating revenues or by inflating expenses in that period (Jo and Kim, 2007; Lo, 2008). In sum, a direct method for calculating earnings management or financial reporting quality has not been used in the literature so far, although many proxies are employed, such as a residual of the difference between total discretionary components and nondiscretionary components (Givoly et al., 2010).

Hypothesis development

Alternative regulatory policies impose certain requirements, restrictions and guidelines on corporations, with the aim of maintaining the integrity of their financial reporting and internal controls. Although it is difficult to conclude whether SOX alone is responsible for increasing the quality of financial reporting, the endorsement of alternative regulatory policies has increased FRQ (Fischer et al., 2014). Using this rationale, Lobo and Zhou (2010) show that, in the post-SOX period, firms appear to be more conservative as they also demonstrate higher quality financial reporting. They also claim this is consistent with SOX provision-related benefits from better financial reporting and improved internal control systems. In contrast to US companies, EU firms lack a comprehensive governance concept since they do not have a singular governance concept and generally have a concentrated ownership structure (e.g., in Germany and France) (Dai and Helfrich 2016; Franks and Mayer 2017). Specifically, the agency problem, independent boards or audit committees, information flow disclosures (internal control deficiency [ICD]), and ownership structure-voting rights are some issues still needing to be addressed by EU firms (Böcking et al., 2015; Gong et al., 2013; Veldman et al., 2016). Therefore, this reveals the incomplete framework of the EU corporate mosaic (Coen and Richardson, 2009), and these cross-cutting aspects are easily identifiable because the implementation of SOX provisions significantly affects the quality of corporate governance in EU firms.

EU corporations are of course not required to adhere to SOX, but SOX still influences all those that operate overseas and are listed in the US market, regardless of their origin (Litvak, 2007). In addition, EU firms cross-listed in the US must meet other legal requirements, such as the 8th CLD and the International Financial Reporting Standards (IAS/IFRS). Evidence shows that IFRS and similar adoption standards improve firm performance and enhance disclosure quality.

In order to consider whether compliance with SOX sections/provisions improves financial reporting quality, Section 302 (SOX302, with six subsections) and Section 404 (SOX404, with three subsections) are examined. Apart from looking at FRQ's relationship with the pre- and post-SOX period, we examined whether the quality of reporting was affected by the global financial crisis (US) and the debt crisis in Europe.

The current literature does not provide much evidence on whether alternative regulatory policies can either substitute for or complement each other, although SOX is more likely to be stringent and in some cases act in both roles, as a substitute for and complement to other alternative regulatory policies. For example, while SOX explicitly tasks CEOs to strengthen shareholder confidence in financial statements, IFRS and 8th CLD do not require such specific involvement by CEOs or for CFOs and often only serve as a guide, without imposing legal obligations/sanctions. Conflicting opinions are expressed about the application of SOX and European companies' commitment to meeting its requirements. As noted by Stanberry (2010), only 43% of EUCs believe the legislation's benefits outweigh its costs (Litvak, 2008). Another argument in support is provided by Li (2014), who examines the short- and long-term impact of SOX on cross-listed foreign private issuers, suggesting the costs of SOX compliance significantly exceed its benefits in both respects. As a result, some question whether SOX provisions should be amended to better reflect actual business operations (i.e., due to the cost of implementing it and doubts concerning whether it protects shareholders' interests) (Coates and Srinivasan, 2014; Doidge et al., 2010).

Another distinct view is that SOX does not distinguish between firms' size and financial position. Therefore, measurement of its effect is challenging. For example, although the literature uses the auditing fee as a proxy for Section 404, this approach is not accurate when SOX provisions have been implemented (e.g., whether an external auditor attests to the internal control system). Hence, our study expands on previous studies, most of which take an indirect and one-dimensional approach (e.g., Fischer et al. 2014; Lobo and Zhou 2010), by capturing the direct effects of Sections 302 and 404 of SOX without using a proxy measure.

The principles set out in Sections 302 and 404 of SOX have been designed to promote the quality of corporate governance, indicating they do not allow discrepancies between participants in governance as the tasks and commitment of each are subject to verification and attestation by third-party external auditors.

SOX302 requires the senior management (CEOs and CFOs) of reporting companies to certify financial and other information in their reports. Further, it requires that any deficiencies and material weaknesses in internal controls over financial reporting and any agency problems (i.e., conflicts of interest) be disclosed to the auditors and the audit committee. With this rationale, we therefore hypothesize that compliance with SOX302 affects the quality of financial reporting of EU firms cross-listed in US markets.

Hypothesis 1: Compliance with SOX302 improves the quality of financial reporting of EU firms cross-listed in US markets.

In addition, we assume that corporate efforts to establish good governance practices preceded SOX. Hence, SOX404 reinforces SOX302 by requiring management to assess and report on the effectiveness of internal controls over financial reporting. Apart from direct control, SOX provides indirect control over financial reporting systems, which is not covered by its counterpart (i.e., the 8th CLD). While senior management remains accountable for fulfilling corporate responsibilities, SOX404 requires inter alia that an independent opinion by external auditors (attestation) confirms the management's assertions regarding the reliability of the internal control systems over financial reporting. Such actions also provide indirect protection of shareholder rights. Despite the general belief that SOX404 has helped improve financial reporting,

some scholars disagree. For example, Singer and You (2011) claim that SOX404 helped protect investors and restored their confidence in the stock market by improving the accuracy and reliability of corporate disclosure, whereas Li (2014) suggests the costs of SOX compliance significantly exceed its benefits. Regardless of the cost of compliance, SOX establishes additional standards that make the internal control environment and financial reporting more credible and comparable with those in the European Union. While SOX404 indirectly improves the protection of investors' rights, on other hand it is expected that compliance with SOX404 further enhances the quality of financial reporting and we therefore hypothesize that:

Hypothesis 2: Compliance with SOX404 improves the quality of financial reporting of EU firms cross-listed in US markets.

Taking a time dynamic perspective, we expect that SOX requirements have led to an improvement in corporate governance and the avoidance of earnings management (Bajra and Čadež 2018; Ettredge et al. 2006; Goh and Li 2013). Indeed, corporations have been observed establishing adequate and reliable internal controls systems over financial reporting and, in this regard, we expect the quality of financial reporting to increase over time, while the promulgation of SOX (2002) adds a further positive impact by advancing the whole corporate governance configuration and not simply the quality of financial reporting. Consequently, since greater compliance with the SOX provisions supposedly increases the quality of corporate governance, we therefore posit our third hypothesis:

Hypothesis 3: The quality of financial reporting is higher in the post-SOX period than in the pre-SOX period.

In addition to our main hypothesis, we complement this study by examining the effect of the financial and debt crisis in 2008 and 2010 on corporate governance (Reguera-Alvarado et al., 2019; Rivera et al., 2017; Trombetta and Imperatore, 2014). In particular, the financial crisis forced many firms into bankruptcy or caused them to delist from the main financial markets (e.g. NASDAQ and NYSE), and a contingent of them have taken appropriate measures imposed by regulators (Daugherty and Georgieva, 2011; Martinez and Serve, 2017). Moreover, a significant drop also occurred in initial public offerings (IPOs), leading current issuers to seek delisting from these capital markets to find alternatives for funding (Gao et al., 2013; Rose and Solomon, 2016). Therefore, our last hypothesis is that both the global financial and the debt crises had a negative effect on the quality of financial reporting.

Hypothesis 4: The global financial and the debt crises are negatively associated with financial reporting quality.

Sample And Methodology

Sample description

Since SOX went into effect, all firms listed on US markets (regardless of their origin), including EU firms, which have highly penetrated these markets, are subject to its provisions. Therefore, we sample all EU firms cross-listed in the US, proxied by ADRs for a period of 14 years (2000-2013). From the initial population (around 130), we excluded all firms without at least six years of consecutive data for the variables of interest. This procedure reduced the sample to 118 EU cross-listed firms, in part due to the declining number of EU firms operating in US markets over time, as noted in reports published by the SEC or others that are accessible (e.g., NASDAQ, NYSE, AMEX, or OTC market), listing all non-US firms on US markets.

Although SOX is mandatory for every firm listed on US markets, the sample data are homogeneous and treated as a single EU market, not as a single country. Figure 1 shows that UK-based firms dominate our sample with 36% (or 42 firms), followed by France with 17% (20 firms), and Germany with 14% (17 firms), while the remaining 33% (39 firms) originate in other EU countries. Unlike the financial records (provided by Amadeus and Bloomberg), the data that relate to SOX302 and SOX404 and their components were collected manually from thousands of annual financial reports and corporate governance reports (EDGAR's annual proxy statement). The sample period is from 2000 to 2013, sufficient to cover the period before and after implementation of SOX, allowing a meaningful investigation of its impact on financial reporting quality and corporate governance as a whole.

Measurement of dependent variables

As shown in prior studies, great attention has been given to whether discretionary components are a good proxy for defining the quality of financial reporting. Although financial reporting quality cannot be measured directly, in this study we employ several alternative estimation procedures used extensively in earlier research (Enomoto et al., 2015; Keung and Shih, 2014), which achieve an almost identical level of discretionary accruals. In particular, we use the Modified Jones model (M-Jones model), widely supported as the most powerful model for capturing the discretionary component (Givoly et al., 2010)[1]. Accordingly, by using industry-year cross-sectional data for several EU firms, we calculate financial reporting quality via the discretionary accruals. Thus, the calculation of discrete components is conducted using a two-stage procedure.

In the first stage, we estimate total accruals (TA) as the change in current assets (Δca) minus the change in current liabilities (Δcl), minus the change in cash flow (Δcc), plus the change in interest-bearing liabilities ($\Delta ipaid$), and minus depreciation and amortization (da) for firm i in year t .

In the second stage, the discretionary accruals (DA) component (in absolute value) is estimated as the difference between total accruals and nondiscretionary accruals as follows:

$$DA_{it} = (TA_{it}/Tas_{i,t-1}) - \alpha_1 (1/Tas_{i,t-1}) + \alpha_2 (\Delta Rev_{it} - \Delta Rec_{it}) / Toas_{i,t-1} + \alpha_3 PPE_{it} / Tas_{i,t-1} + \varepsilon_{it} \quad (1)$$

where DA is discretionary accrual components (FRQ), TA is total accruals for firm i in year t , $Tas_{i,t-1}$ is total assets for firm i in year $t-1$, ΔRev_{it} is the change in revenue for firm i between years t and $t-1$; ΔRec_{it} is changes in accounts receivable for firm i between years t and $t-1$; and PPE_{it} is gross property, plant and equipment for firm i in year t . In our case, the difference between the dependent variable FRQ (y_i) and the estimated systemic influence of independent variables on FRQ (predicted value \hat{y}_i) represent the **residual** (e_i), where $e_i = (y_i - \hat{y}_i)$ or ($e_i = FRQ_{it} + u_{ij}$). e_i is the model deviation

Measurement of independent variables

We used a novel method to collect data on the SOX provisions, and the dataset captures all firm activities related to SOX302 and SOX404, including external audit reports, corporate governance reports, and financial statements for firm i in year t . This implies the disclosures made by the management team or by the corporation toward fulfilling the SOX legal requirements are all obtained. The disclosure and opinion provided by external auditors on the financial statements serves as a benchmark for whether firms comply with the SOX requirements and have established good corporate governance.

With this methodology, *Corporate Responsibility for Financial Reports* (SOX302) for firm i in year t was measured in terms of compliance with its six subsections (Bajra and Čadež, 2020). On this basis, a composite score was constructed such that SOX302 represents a summary score for the six subsections, with values falling within a theoretical range of 0 to 6. A value of 6 denotes high compliance with SOX302 and greater disclosures by senior management, whereas a value of 0 indicates low (or no) compliance with SOX302. In the first stage, with respect to subsection 1, *SOX302(1)*, a value of 1 is assigned if the signing officers reviewed the report, and 0 otherwise. With respect to subsection 2, *SOX302(2)*, a value of 1 is assigned if the management team disclosed that the report does not contain any materially untrue statements, and 0 otherwise. In addition, a value of 1 is assigned to *SOX302(3)* if the audit of financial statements confirms the assertions of the signing officers that financial statements and related information fairly present the financial condition and the results in all material respects, and 0 otherwise. With respect to subsection 4, *SOX302(4)*, a value of 1 is assigned if the signing officers are responsible for internal controls and evaluated these internal controls, and 0 otherwise. Concerning subsection 5, *SOX302(5)*, a value of 1 was assigned if a list of deficiencies in the internal controls and information on any fraud was disclosed by the management team, and 0 otherwise. Finally, with respect to subsection 6, *SOX302(6)*, we control for whether the management team disclosed any significant changes in internal controls or related factors and how often their internal control procedures were revised. If such changes seem to be made within a year or in the past two years, as required by *SOX302(6)*, a value of 1 was assigned, and 0 otherwise.

As per the above method, we assessed *Management Assessment of Internal Controls* (SOX404) for firm i in year t along three dimensions. Hence, a composite score was constructed, with SOX404 representing the summary score of the three subsections, with values falling within a theoretical range of 0 to 3. A value of 3 denotes effective implementation of SOX404 (full compliance), whereas a value of 0 indicates ineffective implementation of SOX404 (no compliance). Regarding subsection *SOX404(1)*, a value of 1 was assigned if the management team had established and maintained an adequate internal control structure and procedures for financial reporting (i.e., accounting policies, board remuneration policy, policy on auditing and non-auditing fees), and 0 otherwise. With respect to subsection *SOX404(2)*, if an assessment of the effectiveness of the internal control structure and procedures of the issuer for financial reporting was issued, a value of 1 was assigned, and 0 otherwise. In relation to subsection *SOX404(3)*, a value of 1 was assigned if an attestation (by external auditors) concerning the internal control was provided, and 0 otherwise.

$SOXd$ is a proxy for corporate responsibilities for financial reporting and internal control systems before (P1) and after (P2) the introduction of SOX, assuming that firms' efforts to provide qualitative financial reporting and effective internal control were visible much earlier than SOX itself. In addition, the US and EU crises are measured as a dummy variable, representing the period before and after the US financial crisis (2008) and the European sovereign debt crisis (2010), respectively.

Research model

This study tests the effects of SOX302 and SOX404 on the quality of financial reporting using the following integrated model:

$$FRQ_{it} = b_0 + b_1 SOX302_{it} + b_2 SOX404_{it} + b_3 SOXd_{it} + b_4 USCrisis2008_{it} + b_5 EUCrisis2010_{it} +$$

$$+b_6ROA_{it}+b_7SIZE_{it}+b_8GEAR_{it}+b_9IAS/IFRS_{it}+b_{10}AC_{it}+e_{it} +\varepsilon_{it} \quad (2)$$

Where:

FRQ_{it} = financial reporting quality for firm i in year t ,

$SOX302_{it}$ = compliance with Section 302 for firm i in year t ,

$SOX404_{it}$ = compliance with Section 404 for firm i in year t ,

$SOXd_{it}$ = a dummy variable indicating whether the observed period is before or after the implementation of SOX (before and after 2003);

$USCrisis\ 2008_{it}$ = a dummy variable indicating whether the observed period is before or after the peak of the US crisis (2008);

$EUCrisis\ 2010_{it}$ = a dummy variable indicating whether the observed period is before or after the European sovereign debt crisis (2010);

ROA_{it} = return on assets for firm i in year t , which is measured by dividing a firm's net income by its total assets;

$SIZE_{it}$ = natural log of total assets for firm i in year t ,

$GEAR_{it}$ = ratio of total debt to total assets for firm i in year t ,

$IAS/IFRS_{it}$ = a dummy variable denoting the firm's financial statements were prepared using IFRS for firm i in year t ,

AC_{it} = a dummy variable denoting the presence (nonexistence) of an audit committee for firm i in year t ,

e_{it} = control for years fixed effects (dummies year)

ε_{it} = error term.

Several control variables identified in prior research as important determinants of the nondiscretionary component are used as control variables (Bajra and Cadez, 2018; Capkun et al., 2016). The control variables are expected to be negatively associated with the discretionary accruals, thus positively influencing FRQ . The only exception here is the $GEAR$ variable, which is expected to be negatively related to FRQ .

Next, ROA capture information about management's inefficiency in using the firm's assets to generate earnings.

A firm's size plays an important role in the occurrence of discretionary accruals. Whereas Myers et al. (Myers et al., 2007) note that large firms often manage their earnings to meet analysts' expectations, Siregar and Utama (Siregar and Utama, 2008) find evidence inconsistent with this study with respect to $SIZE$.

Further, we include $GEAR$ as a control variable, which is often used as an indicative instrument for the discretionary component. Accordingly, firms with high debt are also likely to have a high degree of earnings management.

We include the $IAS/IFRS$ variable in the model to control for whether the quality of financial reporting has increased since these rules entry went into effect [e.g. 69]. Setting additional rules on dealing with balance-sheet items increases the possibility of avoidance from nonqualitative reporting, and therefore we expect a positive link between IFRS and FRQ .

Next, we employ the AC variable, indicating that the firms have established an audit committee function. We expect that the presence of AC as a monitoring body increases accounting quality, and hence a positive relationship with FRQ is expected (Chen and Huang, 2013).

[1] In the second stage, an extension of Model 1 is also employed by introducing the adjusted return on assets (ROA), as suggested by Kothari, Leone and Wasley (Kothari et al., 2005). However, due to the consistency and similarity of the results we report the results for the Modified Jones model only (Dechow et al., 1995)

Empirical Results

Empirically, this study cannot test the effects of SOX before it goes into effect but, to overcome possible misunderstanding, within realistic parameters we can test for financial reporting quality during the pre- and post-SOX periods. As noted above, the firms, especially those listed on

the NYSE and NASDAQ, increased their efforts to create a credible system of financial reporting and internal control, but not necessarily after SOX had been passed.

Descriptive Statistics

Table 1 presents the descriptive statistics. The average sample firms have a mean *FRQ* value of 0.026 (in absolute value), with a maximum value of 0.305. The *SOX302* score for the overall period is 3.93, or 65.55% of the maximum hypothetical score (6), while the *SOX404* score for the overall period is 1.57, or 52.4% of the maximum hypothetical score (3). Of the nine SOX components (subsections) sampled, firms scored highest for the *SOX302(3)* component (86.1%) over the 14-year period, indicating that in 86.1% of firm-year observations, *SOX302(3)* was properly implemented. At the same time, the sampled firms scored lowest for the *SOX404(3)* subsection (27.1%) over the 14-year period. This can be interpreted as indicating that in 27.1% of firm-year observations, the *SOX404(3)* variable met the criteria established in this study.

Table 1: Summary Statistics

VARIABLE	N	Mean	Min	Max
FRQ	1650	0.03	0	0.31
SOX303	1651	3.93	0	6
SOX302(1)	1651	0.76	0	1
SOX302(2)	1651	0.86	0	1
SOX302(3)	1651	0.86	0	1
SOX302(4)	1651	0.75	0	1
SOX302(5)	1651	0.38	0	1
SOX302(6)	1651	0.33	0	1
SOX404	1651	1.57	0	3
SOX404(1)	1651	0.69	0	1
SOX404(2)	1651	0.61	0	1
SOX404(3)	1651	0.27	0	1
SOXd	1651	0.71	0	1
US2008crisis	1651	0.36	0	1
EU2010crisis	1651	0.21	0	1
ROA	1586	0.03	-1.94	0.96
SIZE	1586	15.76	6.60	21.05
GEAR	1629	0.35	0	2.33
IFRS	1651	0.47	0	1
AC	1651	0.72	0	1

As shown in Figure 2, we divided the overall period examined into two sub-periods (before – P1 and after – P2 SOX) and calculated the mean values for each sub-period. Figure 2 shows that senior management's responsibilities for ensuring a reliable financial reporting system as defined later in *SOX302* increased significantly across the periods, from period 1 (39%) to period 2 (76%, beginning in 2003, when it became mandatory), while management responsibilities with respect to assessing the internal controls and an external audit or opinion on their reliability as subsequently defined in *SOX404* increased from period 1 (17%) to period 2 (67%, beginning in 2003, when they became mandatory). Similar developments over time can be observed for most subsections of both variables. A notable exception is the *SOX404(3)* variable, for which the mean value is relatively low throughout the period (around 27.1%).

In addition to descriptive statistics, Table 2 reports Pearson's correlations. Most of the correlations are statistically significant. The highest correlation is 0.703 between *SOX302* and *SOX404*. Since high correlations between explanatory variables suggest multicollinearity, a collinearity diagnostic analysis was conducted. The highest recorded variance inflation factor (VIF) was 2.42 for *SOX404*. However, we assume that multicollinearity is not a serious threat to the validity of the estimated parameters because VIF does not exceed 10 and, in our case, is around 1.82 (Alin, 2010).

We also considered the probability distributions, which are shown through variance (spread of data from the mean), skewness (asymmetry of the distribution) and kurtosis (tailedness). As regards variance, distributions with a coefficient of variation above 1 are considered to be high variance whereas those below 1 are considered to be low variance. As a rule of thumb, the value of skewness is ± 2 , in contrast, the value of kurtosis is 3 at a maximum. In our case, skewness has the highest value for *SOX302(3)* (-2.09), but we ignored it as a problem for further treatment. As far as kurtosis is concerned, higher values appear for *SOX302(2)* (5.10) and *SOX302(3)* (5.37), although this does not represent a problem for data analysis (Bai and Ng, 2005).

Table 2: Pearson's Correlation Matrix between *FRQ*, Test Variables, and Control Variables

* Significant at $p < 0.05$.

	FRQ	SOX302	SOX404	SOXd	US2008	EU2010	ROA	SIZE	GEAR	IFRS	AC	VIF	1/VIF	
FRQ	1													
	0.218*													
SOX302		1										2.21	0.452	
SOX404	0.168*	0.704*	1									2.42	0.413	
	0.105*													
SOXd		0.569*	0.603*	1								2.21	0.452	
	0.072*													
US2008crisis		0.412*	0.477*	0.471*	1							2.33	0.430	
EU2010crisis	0.054*	0.294*	0.341*	0.330*	0.700	1						1.94	0.515	
ROA	0.320*	0.089*	0.081*	0.038*	-0.002	-0.009	1					1.6	0.624	
SIZE	0.354*	0.151*	0.209*	0.029*	0.069*	0.064*	0.403*	1				1.48	0.675	
GEAR	-0.009	0.108*	0.094*	0.063*	0.029*	0.022*	0.038*	-0.079*	1			1.03	0.972	
										0.060*				
IAS/IFRS	0.061*	0.401*	0.404*	0.597*	0.380*	0.272*	0.067*	0.202*		1		1.64	0.611	
											0.017*			
AC	0.215*	0.556*	0.531*	0.418*	0.335*	0.242*	0.141*	0.286*			0.330*	1	1.56	0.641

Hypothesis testing and results

In this study, we employed several regressions procedures to test both the integrated model with composite items and the segregated model with components (subsections). In addition to the integrated model, we test regression analyses for four more models at a segregated level for each test variable separately and two additional models mainly related to a robustness check. The model testing used the fixed regression estimator.

Hence, in line with our hypothesis, in the first regression procedures, we examine the association between the five test variables and *FRQ*. As seen in Table 3, Model (1) shows that in the presence of four test variables, only two out of four are significantly related to *FRQ*. Accordingly, Table 3 shows that compliance with *SOX302* is significantly and positively associated with *FRQ* ($p < 0.05$), suggesting that the higher a firm's compliance with *SOX302*, the higher the level of its *FRQ* will be. Countering our results, Table 3 also shows that a firm's compliance with the requirements of *SOX404* is not associated with its *FRQ* as expected. Further, Table 3 shows that *SOXd* is positively associated with *FRQ*, indicating that SOX has an influence by way of strengthening financial reporting and internal control systems in corporations. Contrary to *SOXd*, with respect to financial crises, none of them, such as the US crisis of 2008 or the EU debt crisis of 2010, are related with *FRQ*. The signs of the estimated coefficients for the control variables are largely consistent with our expectations. The magnitude of *FRQ* is related to *ROA*, *SIZE* and *AC*, while a negative association is found with *IFRS*. The only is *GEAR* variables, which are not associated with *FRQ*, as expected. As for the fixed effects concern, Table 3 also reports year fixed effects.

Table 3: Regression Analysis Parameters Where Hypotheses Are Tested Using the Integrated Model with Composite Items

Dependent variable: Financial reporting quality (FRQ)	
VARIABLES	Model (1)
<i>SOX302</i>	0.0030** (0.0012)
<i>SOX404</i>	-0.0011 (0.0007)
<i>SOXd</i>	0.0223*** (0.0081)
<i>US2008crisis</i>	0.0028 (0.0067)
<i>EU2010crisis</i>	-0.0001 (0.0035)
<i>ROA</i>	0.0425** (0.0183)
<i>SIZE</i>	0.0039*** (0.0007)
<i>GEAR</i>	-0.0035 (0.0038)
<i>IAS/IFRS</i>	-0.0078*** (0.0026)
<i>AC</i>	0.0025* (0.0014)
<i>Constant</i>	-0.0672*** (0.0128)
<i>Year fixed effects</i>	<i>YES</i>
<i>Observations</i>	<i>1,584</i>
<i>R-squared</i>	<i>0.230</i>

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

To evaluate the direct impact, we tested the integrated model (inclusive model) by including each test variable separately. Model (2) in Table 4 hence shows that compliance with SOX302 is related significantly with FRQ. Also, several control variables are associated significantly with FRQ, but for some this was not expected (i.e. IAS/IFRS). With respect to SOX404, Model (3) in Table 4 shows no significant association with FRQ, while the linkage of the control variables with FRQ is the same as for Model (2). The only difference is that in Model (4) AC is associated with FRQ. Further, Model (4) in Table 4 shows that the post-SOX period has a significant impact on FRQ. This signals that corporations have increased their responsibility to financial reporting and internal control in general. Regarding the control variables, Model (4) in Table 4 shows that ROA, SIZE and AC have a significant positive association with FRQ, while IAS/IFRS has a significant association with FRQ, but not as expected.

Unlike Model (1), where none of the crises interferes with FRQ, for the last testing variable, Model (5) in Table 4 shows that only the US financial crisis is related with the quality of financial reporting, while the EU debt crisis is not related. In addition to financial crises, we control for fixed effects and, because of the homogeneity and the sample's uniqueness, fixed effects do have significant results. As in the previous models, Table 4 shows that some test variables are positively and significantly related to FRQ.

Table 4: Analysis Parameters as Robustness Check by Separately Using Each Test Variable for SOX302 and SOX404, SOXd and Financial/Debt Crises

Dependent variable: Financial reporting quality (FRQ)				
VARIABLES	Model (2)	Model (3)	Model (4)	Model (5)
<i>SOX302</i>	0.0027** (0.0013)			
<i>SOX404</i>		0.0011 (0.00132)		
<i>SOXd</i>			0.0324*** (0.0027)	
<i>US2008crisis</i>				0.0320*** (0.0026)
<i>EU2010crisis</i>				-0.0018 (0.0020)
<i>ROA</i>	0.0425** (0.0183)	0.0427** (0.0187)	0.0427** (0.0187)	0.0427** (0.0187)
<i>SIZE</i>	0.0038*** (0.0007)	0.0038*** (0.0007)	0.0039*** (0.0008)	0.0039*** (0.0007)
<i>GEAR</i>	-0.0037 (0.0038)	-0.0028 (0.0037)	-0.0025 (0.0038)	-0.0025 (0.0038)
<i>IFRS</i>	-0.0076*** (0.0027)	-0.0075*** (0.0025)	-0.0077*** (0.0028)	-0.0077*** (0.0027)
<i>AC</i>	0.0022 (0.0015)	0.0048*** (0.0018)	0.0055** (0.0023)	0.0056** (0.0023)
<i>Constant</i>	-0.0659*** (0.0130)	-0.0628*** (0.0113)	-0.0638*** (0.0123)	-0.0638*** (0.0123)
<i>Year fixed effects</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>	<i>YES</i>
<i>Observations</i>	<i>1,584</i>	<i>1,584</i>	<i>1,584</i>	<i>1,584</i>
<i>R-squared</i>	<i>0.230</i>	<i>0.221</i>	<i>0.220</i>	<i>0.220</i>

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Although our results suggest that compliance with SOX should be even greater to bring a full effect on corporate governance, in summary the results in Tables 3 and 4 show that firms which had a high level of compliance with SOX provisions experienced a significant improvement in their FRQ.

In addition to the first stage regression, we continue by running the model only with the components (segregated model). As seen in Table 5, Model (7), only three of the six *SOX302* components (subsections) are positively associated with *FRQ* at statistically significant levels. The remaining three coefficients, respectively compliance with *SOX302(1)* and *SOX302(5)* and compliance with *SOX302(6)* are not related to *FRQ*. This result is not underestimated with respect to the *SOX404* components (subsections). As per Model (8) in Table 5, of the three *SOX404* provisions *SOX404(2)* is positively associated with *FRQ* at statistically significant levels, while *SOX404(3)* is significantly associated with *FRQ*, but in the opposite direction to what was expected. Contrary to the above, only *SOX404 (1)* is not related to *FRQ*. As for the *SOXd* variable, in both Models (7) and (8) in Table 5, it has a significant link with *FRQ*. We also checked the importance of the US financial crisis (2008) and the European debt crisis (2010). Our regression results in Table 5 (Model 7 and 8) do not show any significant impact of the crises on earlier *FRQ* results; therefore, the quality of the financial reporting of cross-listed EU firms was not affected by these crises. In addition to financial crises, we control for fixed effects and, due to the homogeneity and the sample's uniqueness, fixed effects do not have any significant results.

Another point of difference when comparing the results is the control variables. Although Models (2)–(4) in Table 4 with the composite items support the *AC* variable, identical results are found even in the segregated model with components in which the *AC* variable continues to be associated with *FRQ*. Another important observation is the *IFRS* variables, which appear to be significantly associated with *FRQ*, but again the direction of this coefficient does not change in the segregated model.

Table 5: Regression Analysis Parameters Where the Hypotheses Are Tested Using Components Items (Segregated model with components)

Dependent variable: Financial reporting quality (FRQ)		
VARIABLES	Model (7)	Model (8)
<i>SOX302(1)</i>	0.0011 (0.0017)	
<i>SOX302(2)</i>	0.0146* (0.0086)	
<i>SOX302(3)</i>	0.0235*** (0.0082)	
<i>SOX302(4)</i>	0.0064*** (0.0016)	
<i>SOX302(5)</i>	-0.0003 (0.0010)	
<i>SOX302(6)</i>	0.0005 (0.0015)	
<i>SOX404(1)</i>		-0.0016 (0.0019)
<i>SOX404(2)</i>		0.0076*** (0.0028)
<i>SOX404(3)</i>		-0.0024* (0.0012)
<i>SOXd</i>	0.0216*** (0.0075)	0.0246*** (0.0072)
<i>US2008crisis</i>	0.0034 (0.0067)	0.0029 (0.0067)
<i>EU2010crisis</i>	-0.0004 (0.0035)	-0.0003 (0.0034)
<i>ROA</i>	0.0432** (0.0186)	0.0443** (0.0190)
<i>SIZE</i>	0.0036*** (0.0007)	0.0038*** (0.0007)
<i>GEAR</i>	-0.0028 (0.0038)	-0.0030 (0.0038)
<i>IAS/IFRS</i>	-0.0080*** (0.0028)	-0.0081*** (0.0027)
<i>AC</i>	0.0009* (0.0004)	0.0041** (0.0017)
<i>Constant</i>	-0.0643*** (0.0146)	-0.0624*** (0.0114)
<i>Year fixed effects</i>	YES	YES
<i>Observations</i>	1,584	1,584
<i>R-squared</i>	0.242	0.226

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Conclusion

This study overviews the effect of SOX on the financial reporting quality of EU firms cross-listed on US markets for a relatively long time (2000–2013). Specifically, this study provides insights into whether complying with SOX302 and SOX404 is significantly related to FRQ on both the composite (section) and component (provision) levels. Our findings may be summarized according to the four hypotheses.

First, the results of regressing the composite model (integrated model) support the direct effect hypothesis that compliance with SOX302 enhances the quality of financial reporting. Consequently, the findings suggest that corporate governance responsibilities concerning financial reporting increased after SOX went into effect.

Second, contrary to our expectations, compliance with SOX404 does not enhance financial reporting quality. This finding may be explained by the specific cost of complying with its subsections (Krishnan et al., 2008) and the great impact of its counterpart – probably the EU 8th CLD – or corporate resistance to change in firms' governance approach imposed by alternative regulatory policies (Bajra and Čadež, 2018; Christensen et al., 2015). The evidence indicates that implementation of SOX404 is costly and perhaps even unaffordable, which is in line with our results. For example, Piotroski and Srinivasan (2008) indicate how SOX has reduced the flow of foreign-listed companies across international stock exchanges.^[1] Further, Doidge et al. (2010) reveal the number of foreign firms leaving US markets rose considerably after SOX was passed, while Li (2014) finds the costs of SOX compliance significantly exceed its benefits and reduce the net benefits of cross-listings. In line with this

rationale, imposing a new corporate approach coupled with the costs associated with SOX404 compliance may be the main reasons it has not affected the quality of corporate governance.

In addition to testing the model on the section (composite) level, as a robustness check we tested the model at the subsection (components) level. Interestingly, of the nine subsections (6 for *SOX302* and 3 for *SOX404*), three do not exhibit a statistically significant relationship with FRQ while two exhibit a statistically significant relationship in the direction opposite to what was expected. This evidence suggests a low level of robustness and raises the question of whether all the SOX subsections are achieving their full effect, while signalling to policymakers that in some cases the (sub) provisions may be discouraging company growth in the name of increasing the quality of corporate governance.

Third, a distinct finding of this study is that shareholders' protection has been enhanced compared to the situation prior to the SOX coming into effect. But this issue remains controversial and requires greater attention in the future because implementation of certain SOX provisions considered key elements for protecting shareholders' rights (e.g. SOX404) was found to be insufficient. The likely reason is it is costly to implement them, making firms hesitant to fully comply. Indeed, our findings suggest that some SOX provisions should be amended and, unless no other choice is provided by policymakers, companies will need to increase their efforts to establish and maintain appropriate internal controls and demonstrate their effectiveness, while avoiding earnings management and ensuring accurate financial reporting.

To complement our regression results, we further divided the overall period under study into two sub-periods (before and after the SOX) and calculated the mean values for each sub-period. Our findings indicate that senior management's responsibility for ensuring a reliable financial reporting system, as defined later in SOX302, increased significantly during the period, while management responsibilities with respect to assessing internal controls and an external audit or opinion on their reliability, as subsequently defined in SOX404, increased, yet not satisfactorily. Hence, it is not surprising that our results agree with those provided by Iliev (Iliev, 2010) which reveal delay with respect to Section SOX404 compliance, especially the provisions dealing with the auditor's attestation requirement (i.e., SOX 404(3)). Further, he claims that SOX compliance has reduced the market value of small firms. This suggests that such a trend is most likely also being followed by EU firms cross-listed in the US markets.

Fourth, our findings show the quality of financial reporting is not linked to the global financial crisis in either the USA or the European context. Moreover, this study does not find significant associations between IFRSs, the presence of the audit committee, and FRQ (Capkun et al., 2016; Hwang et al., 2018; Rainsbury et al., 2009; Zeghal et al., 2012). Only the presence of the audit committee is insufficient to increase the quality of financial reporting, unless it is based on its attributive characteristics (Bajra and Čadež, 2018). The relationship between IFRS and FRQ is also controversial, suggesting that IFRS does not specify strict criteria for a firm's accounting techniques and, as claimed by Capkun et al. (2016), IFRS provides firms with greater flexibility in accounting choices due to the vague criteria that accompany these standards (Verriest et al., 2013). Consequently, our study argues that the improvement in financial reporting quality may be largely attributed to SOX because of the comprehensible criteria for all firms listed in the US market (e.g., signatures of financial statements by CEOs and CFOs, then the responsibility of signing officers for internal controls and evaluating these internal controls are directly required by SOX, but not by its counterparts) and, while SOX seems to complement other alternative policies (i.e. 8th CLD), it is most likely to also serve as a substitute.

From a broader policy perspective, our evidence indicates that implementation of SOX has positively affected the quality of EU firms' financial reporting by pointing to the clear financial reporting responsibility at the management level and responsibility for establishing and maintaining firms' internal controls to maintain an environment with good corporate governance. Therefore, our evidence supports the notion that SOX improves the quality of corporate governance and thereby benefits the reliability of financial reporting, which is of great concern to corporate stakeholders.

This study also makes a methodological contribution to the literature. Earlier studies on the measurement of SOX often relied on an indirect quantitative approach (i.e., the cost of implementation, or a binary dimension), whereas this study employs a qualitative approach by checking one by one at the micro level whether firm i at time t adheres to the SOX requirements. In addition, this study applies a novel approach with respect to the operationalization of SOX. Hence, we believe our methodology and empirical approach are useful to both practitioners and policymakers for further understanding the implications of the SOX and financial reporting quality.

Despite this contribution, like in previous studies this study's findings have some limitations. A particular limitation concerns measurement of the variables. As noted in the study, discretionary accruals are only a proxy for financial reporting quality and no perfect measure of financial reporting quality exists. A similar limitation pertains to measuring compliance with the SOX provisions. SOX consists of many provisions, of which this study considered only two. Although adding more provisions is likely to capture financial reporting quality more exhaustively, it also increases the likelihood of measurement errors.

[1] A supportive example is the share of equity represented by the NYSE, NASDAQ and AMEX, where the shares of equity dropped from 28.8% in 2002 to 23.0% in 2009 (Woo, 2011). Further, a significant drop was also recorded in initial public offerings (IPOs), prompting current issuers to

seek delisting from these capital markets as part of finding new alternatives (Gao et al., 2013; Rose and Solomon, 2016). From the EU perspective, it is noted the number of EU firms represented by the ADR programme has also declined since SOX was enacted. According to statistics provided by the SEC (www.sec.gov/divisions/corpfin/internatl/companies.shtml), the number of EU firms represented by ADR in December 2004 was 270 (excluding Switzerland), while at the end of December 2013 it had dropped by 107, or around 60% less than in 2004.

Declarations

Conflicts of interest: The authors declare no conflicts of interest.

References

- Alin A (2010) Multicollinearity. *Wiley Interdisciplinary Reviews: Computational Statistics* 2(3): 370–374. DOI: 10.1002/wics.84.
- Asel JA, Posch A and Speckbacher G (2011) Squeezing or cuddling? The impact of economic crises on management control and stakeholder management. *Review of Managerial Science* 5(2–3): 213–231. DOI: 10.1007/s11846-010-0051-4.
- Ayers BC, Jiang J and Yeung PE (2006) Discretionary accruals and earning management: An analysis of pseudo earnings targets. *Accounting Review* 81(3): 617–652. DOI: 10.2308/accr.2006.81.3.617.
- Badertscher BA, Collins DW and Lys TZ (2012) Discretionary accounting choices and the predictive ability of accruals with respect to future cash flows. *Journal of Accounting and Economics* 53(1): 330–352. DOI: 10.1016/j.jacceco.2011.11.003.
- Bai J and Ng S (2005) Tests for Skewness, Kurtosis, and Normality for Time Series Data. *Journal of Business & Economic Statistics* 23(1): 49–60. DOI: 10.1198/073500104000000271.
- Bajra U and Cadez S (2018) The Impact of Corporate Governance Quality on Earnings Management: Evidence from European Companies Cross-listed in the US. *Australian Accounting Review* 28(2): 152–166. DOI: 10.1111/auar.12176.
- Bajra U and Čadež S (2018) Audit committees and financial reporting quality: The 8th EU Company Law Directive perspective. *Economic Systems* 42(1): 151–163. DOI: 10.1016/j.ecosys.2017.03.002.
- Bajra U and Čadež S (2020) Alternative regulatory policies, compliance and corporate governance quality. *Baltic Journal of Management* 15(1): 42–60. DOI: 10.1108/BJM-11-2018-0373.
- Berninger M, Klug M and Schiereck D (2018) Delistings due to Increased Corporate Governance Requirements – Empirical Evidence from 13 European Capital Markets. *Schmalenbachs Zeitschrift für Betriebswirtschaftliche Forschung* 70(4): 351–391. DOI: 10.1007/s41471-018-0058-0.
- Böcking H-J, Gros M and Worret D (2015) Enforcement of accounting standards: how effective is the German two-tier system in detecting earnings management? *Review of Managerial Science* 9(3): 431–485. DOI: 10.1007/s11846-014-0159-z.
- Bradbury ME and Mear KM (2017) Interpreting the Impact of IFRS Adoption. *Australian Accounting Review*. DOI: 10.1111/auar.12174.
- Bradley M and Chen D (2011) Corporate governance and the cost of debt: Evidence from director limited liability and indemnification provisions. *Journal of Corporate Finance* 17(1): 83–107. DOI: 10.1016/j.jcorpfin.2010.08.001.
- Callao S, Ferrer C, Jarne JI, et al. (2009) The impact of IFRS on the European Union. *Journal of Applied Accounting Research* 10(1). Emerald Group Publishing Limited: 33–55. DOI: 10.1108/09675420910963388.
- Capkun V, Collins D and Jeanjean T (2016) The effect of IAS/IFRS adoption on earnings management (smoothing): A closer look at competing explanations. *Journal of Accounting and Public Policy* 35(4). Elsevier Inc.: 352–394. DOI: 10.1016/j.jaccpubpol.2016.04.002.
- Caskey J and Laux V (2017) Corporate Governance, Accounting Conservatism, and Manipulation. *Management Science* 63(2): 424–437. DOI: 10.1287/mnsc.2015.2341.
- Chang M, Jackson AB and Wee M (2017) A review of research on regulation changes in the Asia-Pacific region. *Accounting and Finance*. DOI: 10.1111/acfi.12259.
- Chen S-S and Huang C-W (2013) The Sarbanes-Oxley Act, Earnings Management, and Post-Buyback Performance of Open-Market Repurchasing Firms. *Journal of Financial & Quantitative Analysis* 48(6): 1847–1876. DOI: doi:10.1017/S0022109014000040.

- Cho CH, Jung JH, Kwak B, et al. (2017) Professors on the Board: Do They Contribute to Society Outside the Classroom? *Journal of Business Ethics*. DOI: 10.1007/s10551-015-2718-x.
- Christensen HB, Lee E, Walker M, et al. (2015) Incentives or standards: What determines accounting quality changes around IFRS adoption? *European Accounting Review* 24(1): 31–61. DOI: 10.2139/ssrn.1013054.
- Coates JC and Srinivasan S (2014) SOX after Ten Years: A Multidisciplinary Review. *Accounting Horizons* 28(3): 627–671. DOI: 10.2308/acch-50759.
- Coen D and Richardson J (2009) *Lobbying the European Union: Institutions, Actors, and Issues* (JR David Coened.). OUP Oxford: OUP Oxford.
- Dai S and Helfrich C (2016) *The Structure of Corporate Ownership and Control. Comparative Corporate Governance and Financial Regulation*. Paper 9. Available at: http://scholarship.law.upenn.edu/fisch_2016/9.
- Daugherty M and Georgieva D (2011) Foreign cultures, Sarbanes-Oxley Act and cross-delisting. *Journal of Multinational Financial Management* 21(4): 208–223. DOI: 10.1016/j.mulfin.2011.07.001.
- Dechow PM, Sloan RG and Sweeney AP (1995) Detecting Earnings Management. *The Accounting Review* 70(2): 193–225. DOI: 10.2307/248303.
- Degeorge F, Patel J and Zeckhauser R (1999) Earnings Management to Exceed Thresholds. *The Journal of Business* 72(1): 1–33. DOI: 10.1086/209601.
- Doidge C, Karolyi GA and Stulz RM (2010) Why do foreign firms leave U.S. equity markets? *Journal of Finance* 65(4): 1507–1553. DOI: 10.1111/j.1540-6261.2010.01577.x.
- Drogalas G, Nerantzidis M, Samaras M, et al. (2020) Audit committee and factors that affect its characteristics: the case of Greece. *International Journal of Disclosure and Governance* 17(4): 181–194. DOI: 10.1057/s41310-020-00081-2.
- Enomoto M, Kimura F and Yamaguchi T (2015) Accrual-based and real earnings management: An international comparison for investor protection. *Journal of Contemporary Accounting & Economics* 11(3): 183–198. DOI: 10.1016/j.jcae.2015.07.001.
- Ettredge M, Sherwood MG and Sun L (2018) Effects of SOX 404(b) implementation on audit fees by SEC filer size category. *Journal of Accounting and Public Policy*. DOI: 10.1016/j.jaccpubpol.2018.01.004.
- Ettredge ML, Li C and Sun L (2006) The impact of SOX Section 404 internal control quality assessment on audit delay in the SOX era. *Auditing* 25(2): 1–23. DOI: 10.2308/aud.2006.25.2.1.
- Fischer B, Gral B and Othmar L (2014) Evaluating SOX Section 404 – Costs , Benefits and Earnings Management. *ACRN Journal of Finance and Risk Perspectives* 3(1): 43–55.
- Franks J, Mayer C and Rossi S (2009) Ownership: Evolution and Regulation. *Review of Financial Studies* 22(10): 4009–4056. DOI: 10.1093/rfs/hhn108.
- Franks JR and Mayer C (2017) Evolution of Ownership and Control Around the World: The Changing Face of Capitalism. *SSRN Electronic Journal*. DOI: 10.2139/ssrn.2954589.
- Gamerschlag R, Möller K and Verbeeten F (2011) Determinants of voluntary CSR disclosure: empirical evidence from Germany. *Review of Managerial Science* 5(2–3): 233–262. DOI: 10.1007/s11846-010-0052-3.
- Gao X, Ritter JR and Zhu Z (2013) Where Have All the IPOs Gone? *Journal of Financial and Quantitative Analysis* 48(06): 1663–1692. DOI: 10.1017/S0022109014000015.
- García-Benau MA, Sierra-Garcia L and Zorio A (2013) Financial crisis impact on sustainability reporting. *Management Decision*. DOI: 10.1108/MD-03-2013-0102.
- Givoly D, Hayn CK and Katz SP (2010) Does public ownership of equity improve earnings quality? *Accounting Review* 85(1): 195–225. DOI: doi:10.2308/accr.2010.85.1.195.
- Goh BW and Li D (2013) The disciplining effect of the internal control provisions of the Sarbanes-Oxley Act on the governance structures of firms. *International Journal of Accounting* 48(2): 248–278. DOI: 10.1016/j.intacc.2013.04.004.

- Gong G, Ke B and Yu Y (2013) Home country investor protection, ownership structure and cross-listed firms' compliance with SOX-mandated internal control deficiency disclosures. *Contemporary Accounting Research* 30(4): 1490–1523. DOI: 10.1111/1911-3846.12000.
- Gull AA, Abid A, Latief R, et al. (2020) Women on board and auditors' assessment of the risk of material misstatement. *Eurasian Business Review*. DOI: 10.1007/s40821-020-00173-7.
- Hoitash U, Hoitash R and Bedard JC (2009) Corporate governance and internal control over financial reporting: A comparison of regulatory regimes. *Accounting Review* 84(3): 839–867. DOI: 10.2308/accr.2009.84.3.839.
- Hopt KJ (2015) Corporate Governance in Europe: A Critical Review of the European Commission's Initiatives on Corporate Law and Corporate Governance. *SSRN Electronic Journal* 12(1): 139–213. DOI: 10.2139/ssrn.2644156.
- Hwang IT, Hur KS and Kang SM (2018) Does the IFRS effect continue? An international comparison. *Sustainability (Switzerland)*. DOI: 10.3390/su10124818.
- Hylton Meier H and Meier NC (2013) Corporate governance: An examination of U.S. and European models. *Corporate Board: Role, Duties and Composition* 9(2): 6–11. DOI: 10.22495/cbv9i2art1.
- Iatridis G and Kadorinis G (2009) Earnings management and firm financial motives: A financial investigation of UK listed firms. *International Review of Financial Analysis* 18(4): 164–173. DOI: 10.1016/j.irfa.2009.06.001.
- Iliev P (2010) The Effect of SOX Section 404: Costs, Earnings Quality, and Stock Prices. *The Journal of Finance* 65(3): 1163–1196. DOI: 10.1111/j.1540-6261.2010.01564.x.
- Im C and Nam G (2019) Does ethical behavior of management influence financial reporting quality? *Sustainability (Switzerland)*. DOI: 10.3390/su11205765.
- Jackson G (2010) *Understanding Corporate Governance in the United States. Arbeitspapier 223. No. 11223.* Setzkasten GmbH, Düsseldorf. Available at: <http://boeckler.de/5137.htm?produkt=HBS-004875&chunk=3&jahr=>.
- Jeanjean T and Stolowy H (2008) Do accounting standards matter? An exploratory analysis of earnings management before and after IFRS adoption. *Journal of Accounting and Public Policy* 27(6): 480–494. DOI: 10.1016/j.jaccpubpol.2008.09.008.
- Jo H and Kim Y (2007) Disclosure frequency and earnings management. *Journal of Financial Economics* 84(2): 561–590. DOI: 10.1016/j.jfineco.2006.03.007.
- Jorgensen BN and Kirshenheiter MT (2012) Interactive Discretionary Disclosures*. *Contemporary Accounting Research* 29(2): 382–397. DOI: 10.1111/j.1911-3846.2011.01070.x.
- Kang S-A and Kim Y-S (2012) Effect of Corporate Governance On Real Activity-Based Earnings Management: Evidence from Korea / Įmonių Valdymo Poveikis, Pagrįstas Darbo Užmokesčio Valdymu: Korėjos Pavyzdys. *Journal of Business Economics and Management* 13(1): 29–52. DOI: 10.3846/16111699.2011.620164.
- Keung E and Shih MSH (2014) Measuring discretionary accruals: Are ROA-matched models better than the original Jones-type models? *Review of Accounting Studies* 19(2): 736–768. DOI: 10.1007/s11142-013-9262-7.
- Khan H ur R, Khidmat W Bin and Awan S (2020) Board diversity, financial flexibility and corporate innovation: evidence from China. *Eurasian Business Review*. DOI: 10.1007/s40821-020-00171-9.
- Kinney WR and Shepardson ML (2011) Do Control Effectiveness Disclosures Require SOX 404(b) Internal Control Audits? A Natural Experiment with Small U.S. Public Companies. *Journal of Accounting Research* 49(2): 413–448. DOI: 10.1111/j.1475-679X.2011.00400.x.
- Kothari SP, Leone AJ and Wasley CE (2005) Performance matched discretionary accrual measures. *Journal of Accounting and Economics* 39(1): 163–197. DOI: 10.1016/j.jacceco.2004.11.002.
- Krishnan J, Rama D and Yinghong Z (2008) Costs to comply with SOX section 404. *Auditing* 27(1): 169–186. DOI: 10.2308/aud.2008.27.1.169.
- Kumar P, Langberg N and Sivaramakrishnan K (2012) Voluntary Disclosures, Corporate Control, and Investment. *Journal of Accounting Research* 50(4): 1041–1076. DOI: 10.1111/j.1475-679X.2012.00454.x.

- Li X (2014) The Sarbanes-Oxley Act and cross-listed foreign private issuers. *Journal of Accounting and Economics* 58(1): 21–40. DOI: 10.1016/j.jacceco.2014.05.001.
- Linck JS, Netter JM and Yang T (2009) The Effects and Unintended Consequences of the Sarbanes-Oxley Act on the Supply and Demand for Directors. *Review of Financial Studies* 22(8): 3287–3328. DOI: 10.1093/rfs/hhn084.
- Litvak K (2007) The effect of the Sarbanes-Oxley act on non-US companies cross-listed in the US. *Journal of Corporate Finance* 13(2–3): 195–228. DOI: 10.1016/j.jcorpfin.2007.03.002.
- Litvak K (2008) The long-term effect of the Sarbanes-Oxley Act on cross-listing premia. *European Financial Management* 14(5): 875–920. DOI: 10.1111/j.1468-036X.2008.00442.x.
- Lo K (2008) Earnings management and earnings quality. *Journal of Accounting and Economics* 45(2–3): 350–357. DOI: 10.1016/j.jacceco.2007.08.002.
- Lobo GJ. and Zhou J (2010) Changes in Discretionary Financial Reporting Behavior Following the Sarbanes-Oxley Act. *Journal of Accounting, Auditing & Finance* 25(1): 1–26. DOI: 10.1177/0148558X1002500101.
- Maama H and Mkhize M (2020) Integrated reporting practice in a developing country—Ghana: legitimacy or stakeholder oriented? *International Journal of Disclosure and Governance*. DOI: 10.1057/s41310-020-00092-z.
- Martinez I and Serve S (2017) Reasons for Delisting and Consequences: A Literature Review and Research Agenda. *Journal of Economic Surveys* 31(3): 733–770. DOI: 10.1111/joes.12170.
- Melis A and Carta S (2010) Does accounting regulation enhance corporate governance? Evidence from the disclosure of share-based remuneration. *Journal of Management & Governance* 14(4): 435–446. DOI: 10.1007/s10997-009-9107-8.
- Myers JN, Myers L a. and Skinner DJ (2007) Earnings Momentum and Earnings Management. *Journal of Accounting, Auditing & Finance* 22(2): 249–284. DOI: 10.1177/0148558X0702200211.
- Pereira A and Alves M do CG (2017) Earnings management and European Regulation 1606/2002: Evidence from non-financial Portuguese companies listed in Euronext. *Revista de Contabilidade* 20(2): 107–117. DOI: 10.1016/j.rcsar.2017.05.002.
- Piotroski JD and Srinivasan S (2008) Regulation and bonding: The sarbanes-oxley act and the flow of international listings. *Journal of Accounting Research* 46(2): 383–425. DOI: 10.1111/j.1475-679X.2008.00279.x.
- Rainsbury EA, Bradbury M and Cahan SF (2009) The impact of audit committee quality on financial reporting quality and audit fees. *Journal of Contemporary Accounting and Economics* 5(1): 20–33. DOI: 10.1016/j.jcae.2009.03.002.
- Reguera-Alvarado N, Fuentes P de and Laffarga J (2019) Do auditors mitigate earnings management during economic crisis? *Revista de Contabilidad* 22(1): 6–20. DOI: 10.6018/rcsar.22.1.354271.
- Rivera JM, Muñoz MJ and Moneva JM (2017) Revisiting the Relationship Between Corporate Stakeholder Commitment and Social and Financial Performance. *Sustainable Development*. DOI: 10.1002/sd.1664.
- Rose P and Solomon SD (2016) Where Have All the IPOs Gone: The Hard Life of the Small IPO. *Harvard Business Law Review* 6: 84–128.
- Singer Z and You H (2011) The effect of section 404 of the sarbanes-oxley act on earnings quality. *Journal of Accounting, Auditing and Finance* 26(3): 556–589. DOI: 10.1177/0148558X11401554.
- Siregar SV and Utama S (2008) Type of earnings management and the effect of ownership structure, firm size, and corporate-governance practices: Evidence from Indonesia. *International Journal of Accounting* 43(1): 1–27. DOI: 10.1016/j.intacc.2008.01.001.
- Stanberry K (2010) U.S. Sarbanes Oxley Act: Has It Positively Impacted Corporate Accountability on a Global Level. *Global Review of Accounting and Finance* 1(1): 179–188.
- Sunder S (2016) Better financial reporting: Meanings and means. *Journal of Accounting and Public Policy* 35(3): 211–223. DOI: 10.1016/j.jaccpubpol.2016.03.002.
- Taipaleenmäki J and Ikäheimo S (2013) On the convergence of management accounting and financial accounting - the role of information technology in accounting change. *International Journal of Accounting Information Systems* 14(4): 321–348. DOI:

10.1016/j.accinf.2013.09.003.

Trombetta M and Imperatore C (2014) The dynamic of financial crises and its non-monotonic effects on earnings quality. *Journal of Accounting and Public Policy* 33(3): 205–232. DOI: 10.1016/j.jaccpubpol.2014.02.002.

Trompeter GM, Carpenter TD, Desai N, et al. (2013) A synthesis of fraud-related research. *Auditing* 32(SUPPL.1): 287–321. DOI: 10.2308/ajpt-50360.

Veldman J and Willmott H (2016) The cultural grammar of governance: The UK Code of Corporate Governance, reflexivity, and the limits of 'soft' regulation. *Human Relations* 69(3): 581–603. DOI: 10.1177/0018726715593160.

Veldman J, Gregor F and Morrow P (2016) *Corporate Governance for a changing world: Final report of a global roundtable series*. Brussels and London:Frank Bold and Cass Business School, 2016.

Venturelli A, Caputo F, Cosma S, et al. (2017) Directive 2014/95/EU: Are Italian Companies Already Compliant? *Sustainability* 9(8): 1385. DOI: 10.3390/su9081385.

Verriest A, Gaeremynck A and Thornton DB (2013) The Impact of Corporate Governance on IFRS Adoption Choices. *European Accounting Review* 22(1): 39–77. DOI: 10.1080/09638180.2011.644699.

Woo CHN (2011) United States Securities Regulation and Foreign Private Issuers: Lessons from the Sarbanes-Oxley Act. *American Business Law Journal* 48(1). Blackwell Publishing Inc: 119–176. DOI: 10.1111/j.1744-1714.2010.01113.x.

Zeghal D, Chtourou SM and Fourati YM (2012) The Effect of Mandatory Adoption of IFRS on Earnings Quality: Evidence from the European Union. *Journal of International Accounting Research* 11(2): 120206093942007. DOI: 10.2308/jiar-10221.

Zhou T, Xie J and Li X (2017) Financial Reporting Quality and Idiosyncratic Return Volatility: Evidence from China. *Emerging Markets Finance and Trade* 53(4): 835–847. DOI: 10.1080/1540496X.2016.1142200.

Figures

Figure 1 is not included with this version of the manuscript

Figure 1

(Figure 1 placeholder)

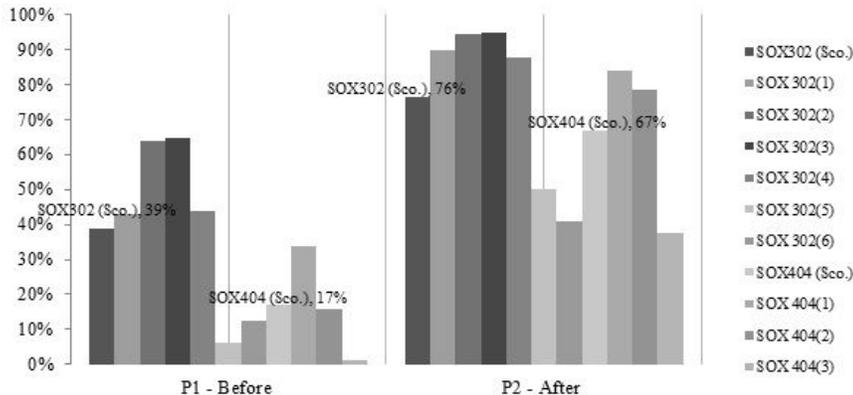


Figure 2

Level of Senior Management Responsibilities and Corporate Responsibilities as Defined later in SOX302 and SOX404 (Composite Items and Components)