

The Severity of Internal Controls Deficiencies: Types and Internal Auditor Detection Process

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1. INTRODUCTION

This study addresses the topic of Internal Controls Deficiencies and focuses on Italy, where a law with the same objectives and origins as the United States of America (USA) Sarbanes-Oxley Act (SOX) has been implemented. The Italian setting presents however a different capital market and auditor legislation. Italy is interesting because it allows us to analyze the usefulness of the regulations implemented as a result of financial scandals in a civil law country where the market is driven by banks and financial institutions, with weak legal enforcement, weak investor protection and a low litigation risk, and the Italian “light SOX” makes fewer requirements overall for external auditors.

The study tests two research questions: 1) a positive relationship between Internal Controls Deficiencies (ICD) severity and type of ICD; 2) a negative relationship between ICD severity and internal auditors detection process. The paper follows on from the work of Bedard and Graham (2011). We investigate two causes of the severity classification: types of ICD types classified by the Committee of Sponsoring Organizations of the Treadway Commission report (COSO 2006) framework and literature; internal auditors detection process following Public Company Accounting Oversight Board (PCAOB) Auditing Standard 5. ICD types are accounts-specific, entity and information technology level controls. The internal auditors detection process is the process of planning and scoping or testing and monitoring influenced by the internal auditors characteristics. For internal auditors we refer to Internal Control over Financial Reporting (ICFR) auditors, identified as responsible by the Italian law. We predict systematic differences in severity classifications across types of ICD and a lower probability of more severe ICD in companies with higher overall quality of internal control (Bedard and Graham, 2011). The regression model uses also control variables, classified as firm and external auditor characteristics.

We use proprietary data on detected ICD, classified by severity as Deficiencies, Significant Deficiencies (SD) and Material Weaknesses (MW). Managers of a sample of Italian listed companies provided the data. The data is private and thus more precise and comprehensive than public data, which allows us to give a contribution developing findings from previous literature. The data permits us to study different types of account-specific ICD: 1. purchases, revenues and inventory, exclusively for the manufacturing and service industries; 2. loans, services, collect credits and insurance, exclusively for the finance industry; 3. liabilities, human resources, fixed assets and intangibles, taxes, treasury, period end and accounting policies, account reconciliation, subsidiary specific, entity or information technology for all industries. We make a new

contribution to the literature by investigating typical ICD related to finance industry. Furthermore, the private data gives indication on how ICD are detected by internal auditor detection process. The absence of data has not previously allowed research to address this topic. Our data provides information about the following: quantitative and qualitative indicators of firms, financial statement values and accounts in scoping, the type of qualitative indicators, the consideration of groups and the use of a top-down approach to analyze scoping quality. It gives information about the frequency of tests for account-specific, entity and information technology controls in terms of period and reports addressed, the type of tests (design or operation effectiveness/ based on decentralized documentation, observations or re-performing) and the consolidation of the results. We also use data on segregation of duties, education and experience of ICFR auditors, which is innovative.

We investigate this issue in a sample of 13410 ICD. ICD in entity level and information technology are very frequent. Among account-specific controls, the very widespread ICD in all industries are those in period-end/accounting policies, human resources, fixed assets and intangibles. In the manufacturing and service industries, industry specific ICD, which are very frequent, occur in purchases, inventory and revenues. In the bank and insurance industries, ICD are also frequent in account reconciliation and subsidiary specific. The most severe ICD in the manufacturing and service industries are purchases, revenues and treasury ICD; and in the finance industry they are period-end/accounting policies, loans, treasury and subsidiary specific ICD, followed by services and account reconciliation ICD.

The internal auditor detection process shows the situation about planning and scoping, testing and monitoring and ICFR auditors. The weakest part of scoping is the procedure to identify the financial statement values. Scoping quality can be improved with the use of a higher number of qualitative indicators, a control hierarchy based on financial reporting, and a perspective of the firm as a part of a group. Managers have improved the internal auditor detection process from the start-up period (2007-2009) to the operating period (2010-2012). Internal auditors perform the complete set of control tests (at account-specific, entity and information technology level) on average every year. The greatest difference between periods is the reports addressed by the tests and the type of tests for account-specific controls. In the start-up period, tests focus more on the annual financial report and are mainly decentralized inspections of documentation. In the operating period they focus on intermediate relationships and consist mainly of observations. Few companies perform tests on the operation effectiveness of entity level and information technology controls and few companies consolidate the results of all the tests.

The level of segregation of duties among department shows that responsibility, test execution and remediation are usually assigned to two different departments out of three, and in most of the sample, the ICFR auditors hold a post graduate qualification in Accounting and Business Administration. The ICFR auditors have on average between four and six years of experience mainly in the administrative area.

In order to answer our research questions, we used a robust model with high Pseudo R^2 and significance level of many variables. For the research question 1, we found higher ICD severity associated with ICD type for revenues, but in general, the more likely ICD, the less severe they are. For the research question 2, results

confirm a lower probability of more severe ICD in companies with higher overall quality of internal control, consistent with Bedard and Graham (2011). These results have several implications: several qualitative indicators and the top-down approach should be used in scoping and planning; the optimum frequency of testing would be to test all account-specific, entity and information technology controls every semester; re-performing or observation should be used instead of simple inspection of documentation; operation effectiveness of information technology and entity level controls should be tested. We note that the consolidation of results is negatively associated with the probability of SD and MW detection. A further implication is that the use of only quantitative indicators is less discretionary and for this reason may be preferred, but the joint use of both qualitative and quantitative indicators increases the probability of detecting more severe ICD.

Consistent with Ashbaugh-Skaife et al., 2007; Doyle et al., 2007; Ge and McVay, 2005; Raghunandan and Dasaratha, 2006; Hoitash et al., 2008; Hogan and Wilkins, 2008; Krishnan et al., 2008, we find that the following types of company have less severe ICD: bigger companies (size and market capitalization), companies with good performance (return on equity), less complex and risky companies (merge and acquisition, restructuring, litigation), established listed companies and companies with a long tradition (listing and firm age), companies audited by one of the Big4 and companies with lower audit/non audit fees.

2. BACKGROUND

The empirical setting of the study is the Italian stock market. This market is less developed than the USA market. The Italian market is more driven by banks and financial institutions than by investors and listed companies are only about 200. Italy is a civil law country and is characterized as having weak legal enforcement and weak investor protection (Choi and Wong, 2007). Italy also has low litigation risk based on the index in Wingate (1997). The litigation risk score is 6.22 for Italy, while Anglo-Saxon countries report scores above 10, with a maximum score of 15 for the USA. Italy's score is similar to other non-Anglo-Saxon European countries like France, Germany, Netherlands, Norway, and Switzerland (Cameran et al., 2013).

Statutory Audit was adopted in Italy for all listed companies in 1975 by Presidential Decree D.P.R. 136/1975, and was later extended to unlisted companies in some regulated industries such as banks and insurance. The Italian market is considered to be thin, with auditors competing for a relatively small number of statutory audits (Gietzmann and Sen, 2002). Audit is subject to mandatory audit firm and partner rotation. Internal Audit is a relatively new discipline in Italy, and there is no legal requirement for Italian companies to establish Internal Audit units. Financial service providers are the only exception to this (Arena and Azzone 2009; Cortesi et al. 2009; Mariani et al. 2010), but in 2005 Law Number 262 introduced compulsory assessment of ICFR in 2005 (Law 262/2005).

As SOX was enacted in the USA as a response to financial scandals like Enron and Worldcom, Law 262/2005 was enacted in Italy after financial scandals like Parmalat and Cirio. Much previous research has investigated the USA, but this study addresses a different context for legislation having the same aim as

SOX. Law 262/2005 requires CFO to attest ICFR effectiveness. The Italian law has a clear objective, but the implementation procedure is not defined. Due to the absence of compulsory framework, Italian listed companies mainly test ICFR following Committee of Sponsoring Organizations of the Treadway Commission report (COSO 2006), Control Objectives for Information and related Technology (COBIT, 2007; COBIT for SOX, 2006) (Azzali and Mazza, 2012).

The USA and Italian laws have the same objectives of seeking to protect shareholders from financial scandals and fraudulent practices. There are, however, many differences in aspects such as effective date, phase-in period, authority, field of application, object of control, the main sections related to ICFR, responsibilities, frameworks for ICFR and external auditing principles used for listed companies and severity of ICD (Table 1). Law 262 was passed in 2005 but came into force only in the second half of 2007, nearly five years after the USA law. Second, in the USA the PCAOB was set up, whereas in Italy there is no separate authority setting guidelines or supervising auditors, and there was no facilitation or phase-in period either. Furthermore, in the USA, supervision is extended to the overall internal control system while in Italy only ICFR is supervised. As Security Exchange Commission in USA, the “COMmissione Nazionale per le Società e la Borsa” (CONSOB) in Italy oversees the financial markets. For example, CONSOB provide indications about the reporting to comply with Law 262/2005, proposing a report type (CONSOB report). The main section of Law 262/2005 covering ICFR is Art. 154 – bis. The disclosure and the assessment provided for by Sections 404 and 302 of the SOX are wider and the compliance is more costly than Art. 154 – bis; Italian Law 262 is in fact known as “Light SOX”. But the biggest difference between the two laws lies in the responsibilities and role of external auditors. In Italy, external auditors are not required to certify the reliability of the Internal Control System of the company; they have no direct responsibility for the design and effectiveness of ICFR. Another important difference concerns the frameworks for ICFR. Companies are required to state which frameworks they use. In Italy on the other hand, no frameworks exist and companies have the choice to state or not which international or own-developed frameworks they use. Italy follows National Auditing Standards laid down by the “Consiglio Nazionale Dottori commercialisti ed Esperti Contabili” based on International Standard of Auditing (ISA). Disclosure of ICD is higher in USA. In Italy, CONSOB reports include a section that could show ICD, but in early applications of Law 262, no ICD have been disclosed to the market because CONSOB doesn’t mandatory require them. For the purposes of this study, we request internal data on ICD, classified as Deficiencies, Significant Deficiencies and Material Weaknesses, output of the ICFR testing. Auditing Standard No. 5 issued by PCAOB (paragraph 63), shows that ICD severity classification depends on “whether there is a reasonable possibility that the company’s control will fail to prevent or detect a misstatement of an account balance or disclosure; and the magnitude of the potential misstatement resulting from the deficiency”. Prior research implies that the component tasks of classifying the severity of ICD through judging the likelihood and the materiality of misstatement are unstructured, complex, and difficult (Messier et al. 2005; Allen et al. 2006). Sources of difficulty can be, for example, inconsistency in definitions and interpretation of the materiality (Bedard and Graham 2011).

Because Italy has no frameworks for severity classification, we based our research on the PCAOB definition as a benchmark.

3. LITERATURE AND RESEARCH QUESTIONS

Prior research uses publicly available annual report data to distinguish characteristics of companies disclosing MW under Section 404 or under Section 302 (Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Hoitash et al. 2009). However, it does not address the full extent of detected control flaws, how those problems are detected, or how auditors determine which problems are disclosed.

Because studies using publicly available data cannot directly examine the method of detection, research with access to this type of data is important. Evidence on severity classification from behavioral experiments highlights the judgmental nature of these decisions. Earley et al. (2008) find that clients' preliminary severity classifications influence auditor classifications, which is especially problematic when clients are in favor of low severity. Also, Wolfe et al. 2009 show that management persuasion tactics can affect auditors' classification of information technology controls (Bedard and Graham, 2011). Because it uses private data, our research is able to shed new light on the problem.

3.1. ICD TYPES

We consider first whether severity classifications vary according to the nature of the ICD. Literature and professional standards on Section 404, such as PCAOB Auditing Standard No. 5 paragraph 28-33, require specific consideration of accounts and assertions. While past studies find little difference in control risk assessments across accounts/assertions (Elder and Allen, 2003), current standards suggest that there may be systematic differences in severity classifications across types of ICD, such as account-specific ICD (Bedard and Graham, 2011). PCAOB notes that the auditor should consider the nature of the affected financial statement accounts in assessing the likelihood of misstatements that may result from an inoperative control. PCAOB Auditing Standard No. 5, paragraph 22-24 focuses on entity-level controls with pervasive effects, including information technology controls over the financial reporting close process, and COSO categories of Control Environment, Risk Assessment, Information and Communication, Monitoring. While some studies address the importance of Control Environment in control risk assessments e.g., Cohen and Hanno 2000; Cohen et al. 2002, the only research that has directly examined how entity-level status affects auditors' severity classification in the Section 404 context is Bedard and Graham (2011). We investigate the same concept in a different context, Italy, and we make a contribution to the literature by including ICD in financial institutions. ICD are classified for financial statement accounts/cycle, based on the COSO (2006) small business framework and guidance by some participating firms and literature (Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Ge and McVay, 2005; Bedard and Graham, 2011).

Ge and McVay (2005) found that MW tend to be related to deficient revenues-recognition policies, lack of segregation of duties, deficiencies in the period-end reporting process and accounting policies, and inappropriate account reconciliation. The most common account-specific MW occurs in current accrual accounts, such as the accounts receivable and inventory accounts. Other frequent MW occur in complex accounts, such as derivative and income tax accounts. The contribution of Doyle et al. (2007) is to find that the determinants vary based on the type of control problems (serious entity-wide or account-specific), and on the specific reason for the material weakness, consistent with each firm facing their own unique set of internal control challenges. Ashbaugh-Skaife et al. (2007) underline the difference in the existence of a MW and in detecting (finding and reporting) it. In this study, we thus investigate different types of ICD as our independent variables of interest.

We expect a positive relation between ICD severity and ICT types consistent with Bedard and Graham (2011).

RQ1= Is ICD severity positively related to type of ICD?

3.2 INTERNAL AUDITOR DETECTION PROCESS

We expect lower *probability of discovering more severe ICD* in companies with higher overall quality of internal control, as Bedard and Graham (2011). They use INTERNAL CONTROL RELIANCE, in other words an indicator variable that is one where public auditor current-year reliance on internal controls is “strong” or “maximum,” and 0 otherwise. We measure internal control reliance using private data on the internal control over financial reporting on the procedures of planning and scoping – testing and monitoring and ICFR auditors characteristics.

3.2.1. PLANNING AND SCOPING

Planning and scoping is evaluated following PCAOB Auditing Standard No. 5, paragraph 21-41. It is of high quality if it uses both quantitative and qualitative indicators for firms, financial statement values and accounts selection. We also investigate the kinds of qualitative indicators for firms and accounts selections, the view of a firm as a part of a group, the control hierarchy based on top-down approach. We expect that a high quality of planning and scoping decreases the presence of more severe ICD.

3.2.2. TESTING AND MONITORING

For testing and monitoring, we follow PCAOB Auditing Standard No. 5, paragraph 42-61. Anecdotal evidence from audit partners in Bedard and Graham (2011) noted concern that delay in completing internal controls could affect the quality of the audit. We thus expect that the speed of the testing process (FREQUENCY) is negatively associated with the detection probability of SD and MW. We define the account-specific control test frequency as annual or semi-annual. We define the entity-information technology level control test frequency as multi annual given that the entire control system at these levels is similar in the near years, and a company can also opt to test it in a cycle longer than the fiscal year.

Regarding frequency, account-specific controls are addressed to all the documents with financial data. We thus develop an ordinary measure of quality assigning a higher level of quality when they are addressed to more documents.

Bedard and Graham (2011) consider the auditor's source of evidence. Specifically, they expect higher severity classifications associated with detection of ICD through substantive tests. We use different types of tests on design and operation effectiveness of account-specific, entity and information technology controls. We investigate the most common tests on operation effectiveness for account-specific control. The tests can be: self-assessment, decentralized inspection of documentation, observation and re-performing. For entity level and information technology controls, most companies evaluate only the design of controls, and we define as internal control quality the presence of tests also on operation effectiveness. Results consolidation is a further indicator of higher quality of procedures. We predict that the high quality of testing and monitoring decreases the presence of more severe ICD.

3.2.3. ICFR AUDITORS

Following Bedard and Graham (2011), greater expertise and independence is related to ICD severity. We measure expertise and independence using the idea that managers with higher qualifications, more years of experience and prior jobs in control have more knowledge of internal controls and that managers carrying out higher segregation of duties are more independent. We expect that *the probability of more severe ICD* decreases with education, expertise and segregation of duties of the parties performing the work (internal auditor detection process quality).

RQ2= Is ICD severity negatively related to internal auditor detection process?

3.3 CONTROL VARIABLES: FIRM AND EXTERNAL AUDITOR CHARACTERISTICS

We derive our predictions for company-level control variables from prior research (Ashbaugh-Skaife et al. 2007; Doyle et al. 2007; Ge and McVay, 2005).

We expect a negative sign on SIZE and MARKET CAPITALIZATION, given that prior research shows that smaller companies have more serious internal control problems. We expect that bad performance will be associated with more severe ICD, generating a positive sign on LOSS and a negative sign on return on equity (ROE). We also expect that company complexity and riskiness will be positively associated with ICD severity, including M&A, SEGMENTS, FOREIGN, and RESTRUCTURING for complexity and LITIGATION for riskiness. More severe ICD should be found among new public companies, so we expect a negative relation with LISTING AGE. We expect that companies with longer tradition and experience have lower serious internal control problems, generating a negative sign on FIRM AGE.

Characteristics of the Italian context are the widespread perception of a lack of independence by outside directors and weak legal protection for small investors (Volpin 2002; Di Pietra et al. 2008). In this context,

agency conflicts between large insider and minority outsider shareholders are mitigated by internal control mechanisms, such as the board of directors and its internal committees (Allegrini and Greco 2013). The characteristics of corporate governance that can influence the disclosure of MW, SD or CD are audit committee and board of director size, number of meetings of audit committee and board of directors, accounting and supervisory experience of members, independence of members (Krishnan and Visvanathan (2007), Hoitash et al. (2009), Hermanson et al. (2009), Shu et al. (2011), Goh (2009). Therefore we include a GOVERNANCE SCORE covering these variables to control for its association with the severity of the ICD and we expect a negative sign following Doyle et al. (2007).

Because the work of the external auditor is closely related to internal control quality, we also control for external audit characteristics. One strand of literature found higher audit fees in the presence of internal control problems (Raghunandan and Dasaratha 2006; Hoitash et al. 2008; Hogan and Wilkins 2008). Krishnan et al. (2008) examine both total costs and auditor attestation costs associated with SOX 404: all the costs are higher for ICFR MW firms. Furthermore, Hoitash et al. (2008) find that audit pricing for companies with internal control problems varies by problem severity or by nature of the problem. Therefore, we expect a positive association between severity of ICD and AUDIT FEES, as well as NON AUDIT FEES. Ashbaugh-Skaife et al. 2007; Ge and McVay, 2005) find a positive association with the disclosure of MW and BIG4. We expect a positive relation between the ICD severity and BIG4, as well as FRIM AND PARTNER ROTATION.

These models also control for fiscal YEAR.

4. MODEL

First, we perform univariate tests for differences between two periods: the start-up period that includes years 2007-2008-2009; and the operating period that includes years 2010-2011-2012. We use group mean comparison t-tests for the ordered variables and Pearson X^2 tests (with d.f. =1) for the dummy variables. For the t-test, we first perform the sd-test (standard deviation test) and then use the t-test with unequal variance if the group mean comparison sd-test is significant. Secondly, we perform the following multivariate logistic regression with severity, a dummy variable as the dependent variable.

$$SEVERITY = \beta_0 + \sum_{n=1}^{16} \beta_n ICD\ TYPES + \sum_{n=17}^{21} \beta_n INTERNAL\ AUDITOR\ DETECTION\ PROCESS + \sum_{n=22}^{38} \beta_n CONTROL\ VARIABLES + year\ fixed\ effect$$

We use a logistic regression model to test expectations regarding factors associated with severity classification of ICD. The dependent variable is *SD/MW*; 1 MW or SD, 0 Deficiency, investigates factors associated with ICD meeting the criterion for a “more than remote” likelihood of failing to detect or prevent a misstatement i.e., at least SD classification, implying that the ICD must be reported at least to management

and the audit committee. A dummy to control for the year effect is added and the regressions are split for the two industries: manufacturing and service companies; banks and insurance.

5. SAMPLE AND DATA COLLECTION PROCEDURES

We obtained data under confidentiality agreements from several large firms listed on the Milan Stock Exchange,. Contact personnel from participating firms helped develop a spreadsheet to be completed by engagement teams, containing both company-level and control-level information.

The sample comprises 13410 specific ICD detected by ICFR auditors for 24 companies in 6 years (144 firm-year observations, “n” in Table 2). In comparison with the study by Bedard and Graham (2011), we use a lower numbers of companies (24 versus 44), a longer period of time (6 versus 2 years) resulting in a higher number of ICD (13410 versus 3990 ICD).

The number of ICD detected could be related to the composition of the sample. Our sample mainly includes big Italian listed companies that have invested a lot of human and finance resources in compliance with Law 262/2005, although it does not make as many requirements as the USA SOX. At the beginning, in 2007, the companies modified their internal organization, some requesting help from consulting firms at high non-audit fees. They attempted to reorganize internal control systems, especially internal control over financial reporting, and to implement advanced evaluation procedures . From 2007 to 2009, big changes took place in the internal structure of many companies in for example assignment of responsibilities and the organization chart.

Because external auditors do not have to disclose the assessment of internal control over financial reporting in Italy, it is not possible to break the sample down into effective and ineffective controls. However, analysis of audit opinion reveals that all the companies in our sample appear to be clean.

6. DESCRIPTIVE STATISTICS

6.1 ICD TYPES

At the level of individual control, of the 13410 ICD, 114 or 0.85 percent of detected ICD are MW, with a mean of 1 MW per company per year; 1484 or about 11 percent of detected ICD are only SD, with a mean of 10 SD per company per year; and 11802 or about 88 percent of detected ICD are only CD, with a mean of 82 CD per company per year. See mean in Table 2.

The higher number of ICD per year showed by our sample in comparison with Bedard and Graham (2011), (13410 over 6 years in our sample versus 3990 over 2 years in the USA sample) could be a signal of lower quality of internal control system in Italy than in the USA.

On the other hand, the mean of MW in our sample (1) is lower than the mean in literature using USA samples (2.01). This can be because, as Bedard and Graham (2011) find, it can be underestimated due to the detection of fewer or severe ICD by clients than by auditors. Therefore, many control flaws likely to affect financial reporting could not be found in a client-driven process such as the process investigated here.

Table 4 shows the percentage composition of detected ICD by severity category.

Among account-specific controls, the most widespread ICD are ACC_PERIOD-END/ACCOUNTING POLICIES ICD, in both manufacturing and service firms (16%) and in banks and insurance (13%). But even if this type of ICD is the most widespread, its severity is lower in manufacturing and service firms (0% of MW) and higher in banks and insurance (50% of MW). So the most pervasive problems in manufacturing and service companies are in the following areas: period-end reporting process (closing process), the application of new accounting principles or existing accounting principles to new transactions, the absence or ineffectiveness of rule compliance, record keeping and compliance assistance for reports, the authorization, recognition, capture, and review of transactions, facts, circumstances, and events that could have a material impact on the company's financial reporting process, the design of policies and execution of processes related to accounting for transactions, the establishment of standards for review of journal entries and related file documentation, the accounting and financial reporting infrastructure for collecting, analyzing, and consolidating information to prepare the consolidated financial statements, the procedures for appropriately assessing and applying disclosures and requirements and the application of accounting policies.

In the manufacturing and service industry, the most frequent ICD are ACC_PURCHASES (13%), ACC_INVENTORY (10%) and ACC_REVENUESS, ACC_HUMAN RESOURCES, ACC_FIXEDASSETS AND INTANGIBLES (8%). Confirmation of Bedard and Graham's (2011) findings is found in the following areas: the hierarchy of greater presence of ICD in account-specific controls in the revenues to cash cycle, the design and review of revenues-recognition policies, contracting practices, the detection of side letters and the process of investigating customer assertions regarding terms not specified in the agreements, compensation, payroll and benefits, human resource duties, fixed assets (existence, amortization) and intangibles (existence and capitalization, impairment test) where ICD are more widespread than ICD in account-specific controls in taxes, commitments and contingencies and in treasury and investments. The most severe ICD are ACC_PURCHASES (56% of MW and 22% of SD) and ACC_REVENUESS (22% of MW and 22% of SD). We note that although ACC_TREASURY is less frequent; when it is present, it shows severe ICD (5% of MW and 8% of SD and also 25% of SD in finance industry).

In the bank and insurance industry, ICD are frequent in ACC_HUMAN RESOURCES (10%), ACC_ACCOUNT RECONCILIATION (8%) and ACC_FIXEDASSETS AND INTANGIBLES, ACC_SUBSIDIARY SPECIFIC (7%). As in manufacturing and service industries, the frequent problems in

the account-specific controls are in compensation, payroll and benefits, human resource organization, fixed assets (existence, amortization) and intangibles (existence and capitalization, impairment test). Specifically for the finance industry, frequent problems in the account-specific controls occur in certain accounting reconciliations and review procedures and in the lack of compliance with established procedures for monitoring and adjusting balances relating to certain accruals and provisions, including restructuring charges. They also occur in the following: timely completion of statutory filings in foreign countries, the application of company policies in business units and segments, the timely and complete revelation of material contracts entered into by subsidiaries of the company, controls which may allow employees to carry out improper company transactions, unauthorized trading or cash payments, the procedure of consolidation (e.g., consolidation area, intergroup transaction, minority interests recognition, business combination). The most severe ICD in this industry, after the ACC_PERIOD-END/ACCOUNTING POLICIES ICD, are the ACC_LOANS ICD (10% of MW and 20% of SD) and the ACC_SUBSIDIARY SPECIFIC (25% of MW), the next most severe are the ACC_SERVICES ICD (5% of MW) and the ACC_ACCOUNT RECONCILIATION ICD (10% of SD). Banks and insurance firms therefore need to be careful in the account-specific controls in the responsibilities in loan operations, loan documentation in accordance with loan policy, recording loan origination fees, loan proceeds and loan loss provision, payment process and recording of payments, calculation of interest, collateral vaults; the timely completion of statutory filings in foreign countries, the application of company policies to business units and segments, timely and complete revelation of material contracts entered into by subsidiaries of the company, controls which may allow employees to carry out improper company transactions, unauthorized trading or cash payments, in the procedure of consolidation (e.g., consolidation area, intergroup transaction, minority interests recognition, business combination); fees and commission income; and in certain accounting reconciliations and review procedures and in lack of compliance with established procedures for monitoring and adjusting balances relating to certain accruals and provisions, including restructuring charges. On the other hand, the ACC_COLLECT CREDITS ICD, problems in the account-specific controls for deposit, are all CD. ACC_INSURANCE ICD, problems in the account-specific controls in the determination of outstanding claims and premiums liabilities, are mainly SD (6% of SD). We note that even if ACC_HUMAN RESOURCES is more frequent, when it is present it is less severe (11% of CD).

ICD in entity level and information technology are very frequent.

6.2 INTERNAL AUDITOR DETECTION PROCESS

Table 2 describes Company-Level Client Control and Detection Process Variables.

6.2.1. PLANNING AND SCOPING

Both quantitative and qualitative indicators are used in the scoping process by 71-73-75 percent of the full sample companies, resulting in a scoping score (as sum of three variables in Table 2) of 2 over 3. The weakest part of scoping is the procedure to identify financial statement values (71%; 63% in the first period and 79% in the next period).

Scoping quality (as sum of four variables in Table 2) is just over the half of the code (3.23 on the scale of 0= low quality to 6= high quality): about 50 percent of the sample use a bigger number of qualitative indicators than the single qualitative indicator based on operative risk and specific risks linked to the financial statement (such as type of contract, warranties, risks, extraordinary events, volatility); 67 percent of the sample perform a control hierarchy based on financial reporting while only 40 percent of the sample view the firms in the scoping as a part of the group rather than a single entity.

Companies in the start-up period of implementation have a lower mean in SCOPING and SCOPING QUALITY than those in the following period (1.96 versus 2.42, $p = 0.01$; and 3 versus 3.46, $p = 0.10$).

6.2.2. TESTING AND MONITORING

Frequency is effective (5.41 on the scale of 0= highly ineffective to 8= highly effective). Client internal auditors perform the entire set of control tests (at account specific, entity and information technology level) on average every year, and more than 50% of the tests are for the intermediate relations (reported every six month). The greatest difference between periods is the type of the report the tests are run for: in the start-up period tests focus on the annual financial report, while in the next period they focus on the intermediate relations (1.67 versus 2.04, $p = 0.007$).

Testing quality is middle effective (2.41 on the scale of 0= highly ineffective to 5= highly effective).

We investigate the most common tests on operation effectiveness for account specific level control and the presence of these tests for entity and information technology level control. The greatest difference between periods is in the type of tests for account specific level controls: in the start-up period the tests are mainly decentralized inspections of documentation, while in the following period they are mainly observations (1.38 versus 1.71, $p = 0.028$). In our sample companies do not make use of self-assessment or centralized inspection of documentation tests because they have low reliability; they should be used only as additional tests. Regarding entity level and information technology controls, only about 30 percent of the sample perform the tests on the operation effectiveness. Finally the results of these tests should ideally be consolidated, but this is done by only 56 percent of the sample (50% in the first period, 63% in the following period).

6.2.3. ICFR AUDITORS

ICFR auditor quality is effective (7.21 on the scale of 1.67= highly ineffective to 10= highly effective). ITC responsibility, test execution and remediation are usually assigned to two different departments out of three (about 67%) and in about 70% of the sample, all ICFR auditors have a postgraduate qualification in Accounting and Business Administration. The ICFR auditors have an average of between four and six years of experience (the number varies with the passage of time) and a good level of previous experience.

6.2.4. CONTROL VARIABLES

Table 3 reports names, definitions and descriptive statistics for company-level control variables.

The mean log of total assets is 15.50 (the mean in euro is €49200 million, the median in euro is €5567 million) and the mean of market capitalization is €5436 million. The bigger size in Italy is due to the inclusion of banks and insurance firms in the sample. For the manufacturing and service industries the mean in euro is €7121 million and the median in euro is €627 million, compared with the mean in dollars of 502.5 million in the USA sample of Bedard and Graham (2011).

The mean ratio of ROE is 10% and 17% of the sample present a loss.

Complexity can be seen by the level of diversification, measured through the number of operating segments reported in the financial statement notes, and the level of internationalization, measured through a dummy variable equal to 1 if an Other Comprehensive Income related to foreign transactions is present. On average, sample companies have 4.66 segments, slightly higher than the mean (1.37 MW firms and 1.22 Compustat not MW firms) in the USA sample of Ge and McVay (2005), the mean (3.44 MW firms and 2.75 Compustat not MW firms) in the USA sample of Doyle et al. (2007) and the mean (2.15 ICD firms and 1.95 control sample) in the USA sample of Ashbaugh-Skaife et al. (2007). 24% of the sample has an other comprehensive income related to foreign transactions, a bit lower than the mean (24% MW firms and 16% Compustat not MW firms) in the USA sample of Ge and McVay (2005) and the mean (21% MW firms and 16% Compustat not MW firms) in the USA sample of Doyle et al. (2007).

The companies are on average 55 years old and have been listed for 11 years. The overall percentage of companies that have been public for less than five years is 26 percent (untabulated) similar to the percentage (30.3) of the USA sample in Bedard and Graham (2011).

There is a significant presence of merger or acquisition (77% in our sample versus 42% for ICD firms and 32% for control group in USA sample) and a moderate presence of restructuring (17% in our sample versus 49% for ICD firms and 37% for control group in USA sample) following the definition of variables by Ashbaugh-Skaife et al. (2007).

Over half of the companies are in the manufacturing industry. As noted above, the innovative aspect of this study is to include ICD found by banks and insurance (39%) and to investigate these types of ICD.

17% of the sample is considered to be in a high litigation industry. This is defined using the “gicsgroup” Global Industry Classification codes following the definition of Ashbaugh et al. (2003) who use the SIC – Standard Industrial Classification codes. The gicgroup codes labeling litigation industries are 2520-Consumer Durables and Apparel, 2550-Retailing, 2010-Capital Goods, 3010-Food & Staples Retailing, 4530-Semiconductors & Semiconductor Equipment, 3520-Pharmaceuticals, Biotechnology & Life Sciences, 4510-Software & Services, 4520-Technology Hardware & Equipment. In our sample we have 1854 observations related to the gicsgroup 2010-Capital Goods and 144 observations related to the gicsgroup 4510 Software & Services.

The governance score is a composite measure of factors encompassing seven corporate governance categories: size of board of directors, board of directors meetings, director qualifications, director experience,

director independence, audit committee size, audit committee meetings. The mean is the average of the factor score from a factor analysis.

81% of our Italian sample is audited by one of the Big4, consistent with their market share of the population of the Italian listed companies and similar to the market share in the USA sample of Ge and McVay (2005) (85% MW firms and 84% Compustat not MW firms) . Firm rotation is 8% and partner rotation is 21%; these percentages are the consequence of Italian regulations.

The mean log of audit fees is 6.64 (the mean in euro is €5.5 million) and the mean log of non audit fees is 4.69 (the mean in euro is €14.7 million), showing a higher variability (2.73) than audit fees (1.69).

7. RESULTS

The research uses 13123 observations (Table 5): of the 13401 observations of our sample, 267 were deleted because the companies with ICD on ACC_COLLECT CREDIT=1 predict failure perfectly (they are never SD or MW). A further 11 observations were deleted because the companies with AUDIT FIRM ROTATION=1 predict failure perfectly (they have never SD or MW).

The manufacturing and service industries present 5229 observations: of the 5235 observations of our sample, six were deleted because the companies with AUDIT FIRM ROTATION=1 predict failure perfectly. The variable ACC_LIABILITIES was dropped because of collinearity. The variables ACC_LOANS, ACC_SERVICES, ACC_COLLECT CREDITS and ACC_INSURANCE are not included because they refer to the finance industry.

The finance industry presents 7618 observations: of the 8166 observations of our sample, the variables that predict failure perfectly, ACC_LIABILITIES (267), ACC_COLLECT CREDITS (267), PARTNER ROTATION (9), FIRM ROTATION (5) were deleted. The variables ACC_PURCHASES, ACC_REVENUES, ACC_INVENTORY are not included because they refer to the manufacturing and service industries, and the variable LITIGATION was deleted because all banks and insurance firms are considered to have the same level of litigation risk.

The results show a good model with a Pseudo R2 from 36% to 46% in all the logistic regressions. Most of the independent variables are significant at less than 1% and the year fixed effect has been included.

The interpretation of ICD TYPES (RQ1) refers to the different industries. For the manufacturing and services industries the results show the positive expected sign for the regression coefficient of the variable ACC_REVENUES. ICD on revenues confirms our hypothesis: we find a higher probability of discovering a more severe ICD. On the other hand, the coefficients of ACC_INVENTORY, ENTITY OR INFORMATION TECHNOLOGY have a negative sign. For the finance industry, all variables concerning ICD TYPES have a negative sign. This means that most of the ICD is more likely that they are less severe. Our results for Italy on the classification of severity are very significant and show that ICD appear to be below the level of materiality or to have a lower likelihood of material misstatements.

However, as in the findings of Bedard and Graham (2011), clients detect fewer ICD than auditors, and are less likely to detect severe and pervasive ICD. So many control flaws most likely to affect financial reporting appear to be less severe in a client-driven process such as the one investigated here.

Most of the variables regarding INTERNAL AUDITOR DETECTION PROCESS (RQ2) are significant and have a negative sign as expected. These variables explain the model in the manufacturing and service industries more clearly and have a higher level of significance. In this industry, results confirm the lower probability of discovering a more severe ICD in companies with higher overall quality of internal control, a finding which is consistent with Bedard and Graham (2011).

- A high level of SCOPING QUALITY decreases the presence of more severe ICD. Scoping quality (Table 2) is considered in terms of firm and accounts qualitative indicators, the consideration of a firm as a part of a group, the controls hierarchy based on a top-down approach. Results suggest that companies would be well-advised to use several qualitative indicators, to consider the relationship with the holding company and to use a top-down approach.
- Consistent with Bedard and Graham (2011), we find that the speed of the testing process (FREQUENCY) is negatively associated with the detection probability of SD and MW. Frequency (Table 2) is evaluated with three indicators: accounting test frequency, entity and information technology test frequency and the type of financial reporting. Our results show that the best test frequency would be to cover all account-specific controls, entity and information technology control every semester.
- The high level of TESTING QUALITY decreases the presence of more severe ICD. Testing quality (Table 2) is measured with the accounting test type, the entity and IT operation effectiveness test and results consolidation. Our results show that the presence of re-performing or observation rather than only document inspections, the operation effectiveness tests on IT and entity level controls, the consolidation of results are all negatively associated with the detection probability of SD and MW.
- The only result conflicting with the expected sign is for SCOPING. The use of quantitative and qualitative indicators for firms, financial statement values and accounts selection has a sign opposite from the prediction. This result suggests that using only quantitative indicators is less discretionary and for this reason may be a preferred approach; the use of both qualitative and quantitative indicators however increases the probability of discovering more severe ICD.

Consistent with Ashbaugh-Skaife et al., 2007; Doyle et al., 2007; Ge and McVay, 2005; Raghunandan and Dasaratha, 2006; Hoitash et al., 2008; Hogan and Wilkins, 2008; Krishnan et al., (2008), the control

variables for which the coefficient has the expected sign are SIZE, MARKET CAP, ROE, FIRM AGE, LISTING AGE, M&A, RESTRUCTURING, LITIGATION, BIG4, AUDIT FEES, NON AUDIT FEES. Our results confirm that bigger companies (size and market capitalization), companies with good performance (ROE), less complex and risky companies (M&A, restructuring, litigation), old listed companies and companies with a long tradition (listing and firm age), companies audited by one of the Big4, companies with lower audit/non audit fees all present less severe ICD. The opposite sign of corporate governance could be related to three factors: 1) the size and number of meetings of the audit committee and board of directors, which may not be sufficient to ensure efficiency of internal controls over financial reporting; 2) independence could be only formal, but directors could be not substantially independent; 3) an insufficient level of education and experience. The opposite sign of the coefficient for segment could be related to an insufficient level of controls on all the segments of the company.

CONCLUSION

Following Bedard & Graham (2011), the paper contributes to literature on ICFR by examining the relationship between the severity of ICD and their type and detection process in a country where a “light SOX” does not assure that information about ICD is publicly available and where external auditors are not involved in ICFR assessment and reporting. Bedard & Graham (2011) conclude that in the USA, SOX does not lead to effective disclosure. The problem is more severe in Italy, where the implementation of the CONSOB report has not led to disclosure at all. Our results are based on a relevant private database on ICD supplied by listed companies, where ICD are detected by internal auditors or other internal controls. An important characteristic of the research is the consideration of different industries (manufacturing and finance). The results show that the following ICD types have the highest percentages: entity and information technology, accounting period-end/accounting policies, treasury, human resources, fixed assets and intangibles. In the manufacturing and services industries, purchases, revenues and inventory present the largest percentage of ICD while in finance industry, loans are the area with highest incidence of ICD.

The research measures internal auditor detection process with multiple variables classified as planning and scoping, testing and monitoring, ICFR auditor and control variables. Variables were measured for a start-up period (2007 – 2009) and an operating period (2010 -2012). All the indicators improved over the period. The biggest improvement is related to “Account tests for financial reporting”, followed by “Account test type”: these results are consistent with Bedard & Graham (2011) who emphasize the important role of auditor control tests.

In line with previous research (Bedard & Graham, 2011), results confirm that revenues are one of the most critical areas for ICFR because more severe ICD are likely to be identified here. This strong positive relation is not confirmed for other relevant account types, either in the manufacturing and services or in the finance industry. This could be due to client detection of ICD, a factor which is usually under estimated.

The most important result is the significant negative relation between internal auditor detection process and ICD severity. When the quality of internal auditing activity is high, the results show a reduction in ICD severity.

Our findings may be of use to auditors, companies and researchers to improve the quality of ICFR, especially in a country where external auditors are not involved in their assessment and assurance. The improvement of internal auditing and the related detection process appear to be a way of reducing the severity of ICD.

The findings may be limited in their generalizability by several features of its design. First, it is difficult to directly compare the proportions of MW identified in our sample with public disclosures, as individual control flaws may be aggregated in these reports. Second, we cannot rule out the possibility that non-random selection might have influenced our results.

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