

Management reporting on internal control and earnings quality: Insights from a “low cost” internal control regime¹

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¹ All data are publicly available

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ABSTRACT: We perform an in-depth study on the relationship between internal control reporting and earnings quality in a ‘low cost’ internal control regime, the Netherlands. The Dutch regime is less expensive than SOX 404 because it follows the comply-or-explain principle, and requires no mandatory external audit of the system of internal control. Our results show that a statement of company management of an effective system of internal control is associated with less abnormal accruals, while the extent of description of internal control is not. This raises questions on the choice of many countries to require only a description but not a statement on the effectiveness of internal control.

Keywords: *comply-or-explain, internal control, earnings quality, SOX*

Data Availability: All data are publicly available

I. INTRODUCTION

Ever since its enactment in 2002, the Sarbanes-Oxley Act (SOX) has been the subject of intense debate. As a response to this, a recent stream of research has developed on the costs and benefits of SOX (e.g Engel et al. 2007; Leuz 2007; Zhang 2007). Much of the debate concentrates on Section 404¹ of SOX (SOX 404), and in particular on its compliance costs. For example, the SEC is currently poised to give smaller registrants relief from the SOX 404 requirements due to the cost burden on smaller entities. For this debate on the compliance costs of SOX 404 and in worldwide discussions on the costs and benefits of introducing a 'SOX-alike' statement in national corporate governance codes (e.g. in continental Europe, UK, Canada and Japan), it is very relevant to gain insights regarding 'low cost' internal control regimes. SOX 404 opponents argue (among other things) that the implementation costs are far higher than expected, both in cash terms, and even more so when counting the indirect costs (such as managers' reluctance to take risks and the missed opportunities of foregone investments). The most recent FEI (Financial Executive International) study shows that the average compliance cost of SOX 404 was 2.7 million US dollar in 2006 for companies with an average turnover of 6.8 billion US dollar. Much of the blame is put on the requirement for an external audit on internal controls which is criticized for creating unduly high audit fees for companies compliant with SOX. Although opponents admit that SOX may have reduced the risk of fraud, they argue that this benefit is far outweighed by the cost (The Economist 2006a, 2006b).

In this study, we examine the relationship between internal control reporting and earnings quality in a 'low cost' internal control regime, the Netherlands. In particular, we perform an in-depth study of a requirement contained in the Dutch Corporate Governance Code (effective since 2004) to report on the effectiveness of the system of internal control. The Dutch setting is much less expensive than SOX 404 for two reasons. First, the Dutch

corporate governance code is based on the comply-or-explain principle, which means that companies can choose, based on cost/benefit considerations whether to comply with the requirement to report on the quality of the system of internal control or explain why they do not comply. Second, no opinion from an external auditor on the system of internal control is required. The impact on audit fees of the SOX 404 requirement of an external audit opinion on the system of internal control is reflected in the sharp difference between the development of audit fees in the US and the Netherlands over the past five years.

In contrast to the US, which has a rules-based system, continental Europe and many other countries in the world (e.g. Australia, UK) have a more principles-based approach to corporate governance, which is also reflected in the internal control requirements. While most principles-based codes merely recommend management to communicate how they manage internal controls (description approach), the Dutch code is one of the few exceptions requiring management (based on the comply-or-explain principle) to also provide a statement on the quality of the internal control system (management statement). Hence, the Netherlands provides us with an opportunity to examine whether internal control reporting is informative in a lower cost setting, and to compare the value of both types of internal control requirements (description versus management statement). In particular, this study has two main objectives. First, we study whether a statement on the effectiveness of the internal control system is related to earnings quality in the Netherlands. We measure earnings quality as the level of (abnormal) accruals. Previous US literature has shown that companies reporting an effective internal control system following SOX 404 have higher earnings quality than companies reporting internal control deficiencies (Ashbaugh-Skaife et al. 2007c; Bédard 2006; Doyle et al. 2007b). We contribute to this literature by examining this research question in a lower cost institutional setting. Second, we investigate which requirement, description or management statement, provides the most information.

From a theoretical point of view, managers may be deterred from opportunistic disclosure behavior, or cheap talk, due to increased monitoring pressure. Closer monitoring of managers may reduce agency problems and induce truthful reporting. Healy and Palepu (2001) argue that there are potentially two mechanisms for increasing the credibility of voluntary disclosures. First, assurance about the quality of management's disclosures can be provided by third-party intermediaries like an external auditor or a public oversight body. Second, prior voluntary disclosures can be validated through required financial reporting itself. As stated above, in the Dutch setting no external audit opinion is required on company management's statement of an effective system of internal control. However, the presence of a public oversight body², the threat of litigation for untruthful reporting and managers' need to preserve their reputational capital may withhold management from cheap talk on the quality of the system of internal control.

We base our study on all Dutch listed firms (excluding financial institutions) in the period 2004-2005. We have carefully read the internal control chapter in the annual reports and coded whether company management provides a statement of an effective system of internal control and the extent of description of the internal control system. To this end, we develop an internal control reporting score (ICRS) to capture variation in the extent of description of internal control between companies.

The results of our study show that in a lower cost internal control regime company management's unaudited statement on the quality of its internal control system is informative about the level of earnings management. In particular, we find that Dutch listed companies stating that its internal control system is adequate and effective are associated with a lower level of abnormal accruals. However, we also ascertain that the percentage of companies with a statement of an effective system of internal control is much higher in the US (80%-85% in

the period 2002-2005, Bédard 2006; Doyle et al. 2007b) compared to the Netherlands (28% in 2005). Finally, our results show that, in contrast to a management statement, a more extensive description of the internal control system is not associated with lower levels of earnings management.

Our findings may be useful in the current debate on the costs and benefits of internal control reporting in the US (see for example Solomon and Peecher 2004; Bédard 2006). In particular, this study provides evidence that managers responsibly report on the effectiveness of internal control in a setting which is considerably less costly than compliance with SOX 404. Indeed, in both the US and the Dutch system, a statement of an effective system of internal control provides an indication of the reliability of financial reporting. However, the average level of investments of companies in the system of internal control seems much higher in the US compared to the Netherlands. This may partially be due to US regulation, in particular the combination of the Foreign Corrupt Practices Act (1977) and SOX 404, requiring companies to have an effective system of internal control, while no such requirement exists in the Netherlands. This finding raises a number of relevant questions for future research like whether from an economic point of view regulators should intervene in the level of investment of companies in internal control or whether companies should be left the discretion to weigh the costs and benefits of investing in internal control. Finally, our findings may be useful for regulators in other countries considering whether or not to include in their corporate governance code the requirement of an explicit statement on the quality of internal controls. More specifically, our results raise questions on the choice that many countries in the world have made to include in their corporate governance code only a requirement to describe the system of internal control, but do not require a statement on the effectiveness of the system of internal control.

The remainder of this paper is organized as follows. In the next section, we describe the corporate governance regulations with respect to internal control in the Netherlands compared with some other countries in the world and the US. Moreover, we give an overview of the insights from prior research studying the determinants and benefits of internal control reporting. In Section 3, we develop our research questions and hypotheses. Our sample and research design are described in Section 4. The results of our study are presented in Section 5 and the sensitivity analyses in Section 6. Finally, we conclude with a discussion in Section 7.

II. CORPORATE GOVERNANCE REGULATION WITH RESPECT TO INTERNAL CONTROL

Different corporate governance regimes

During the past years, a central theme of worldwide business reforms was improvement of corporate governance. In the US this was triggered by a number of high-profile corporate scandals, resulting in a loss of investor confidence in the stock market. In response to this, US government passed the Sarbanes-Oxley Act in 2002. The need for more transparency and accountability and the need to increase investor confidence was also felt outside the US. For example, in the EU Action Plan (2003) the European Commission recommends member states to develop best corporate governance practices. In response to this call many countries in the EU have recently developed new corporate governance codes (for example, Code “Tabaksblat” in the Netherlands (2004); Code “Lippens” in Belgium (2005); “Cromme” Code in Germany (2003); and “Le gouvernement d’entreprise des sociétés cotées” in France (2003)).

The biggest difference between the corporate governance approach in the US and most other countries in the world (e.g. Australia, UK, continental Europe) is the fact that in

the US the system is largely prescriptive and rules-based, while most other codes are very much founded upon principles and in particular follow the ‘comply-or-explain’ principle. The comply-or-explain principle means that companies are allowed to deviate from their national code if they report why they do so. In contrast, US listed companies risk serious penalties from the Securities and Exchange Commission (SEC) if they do not comply with the prescriptions of SOX (Mallin 2004).

Besides the fundamental difference in approach between a rules-based versus a principles-based corporate governance system, there also exists variation within principles-based corporate governance codes across countries. This is due to the fact that national corporate governance practices are very much influenced by country-specific characteristics, like ownership concentration, legal framework and board system. As a result some codes can be considered to be more stringent and/or require more information. One controversial theme on which there appears to be much variation among corporate governance guidelines is internal control reporting.

Internal control reporting in the US

The US Foreign Corrupt Practices Act (FCPA) (1977, amended in 1988) was designed to deal with two problems: bribery and poor internal controls, of which bribery is partially a result (Radebaugh and Gray, 1993). With respect to internal control, the FCPA requires companies to devise and maintain a system of internal accounting controls³. Following the high-profile scandals in the US, it appeared that the system of internal control in some companies was not as effective as it should be following the FCPA. Furthermore, it appeared difficult to control for the SEC. To further improve the quality of internal control of companies, SOX 404 requires a substantive documentation and evaluation of the system of internal control. In particular, annual reports filed with the SEC must now contain an

‘internal control report’ in which management states that it is responsible for establishing and maintaining an adequate internal control structure and procedures for financial reporting, and management has to assess the effectiveness of those controls. Moreover, an external audit of the system of internal control is required.

Since its enactment, SOX 404 has been subject to severe criticism. Many opponents argue that the implementation costs largely exceed the benefits. By any measure, the cost of implementing reporting on internal control by management and auditors have been high, and considered to be a multiple of what was projected (Jonas et al. 2007). For example, the FEI studies show that the average compliance cost of SOX 404 was 2.7 million US dollar in 2006 for companies with an average turnover of 6.8 billion US dollar (The Economist 2006a, 2006b). The external audit on internal controls is largely blamed for creating unduly high audit fees for companies complying with SOX. For example, the surveys of Foley and Lardner show that external audit fees in the US appear to have increased 271 percent between fiscal years 2001 and 2006 (Foley and Lardner 2007). In particular, the audit fees of S&P 500 firms have increased on average 155 percent from 3.3 million US dollar in fiscal year 2001 to 8.4 million US dollar in fiscal year 2005. The pressure on smaller listed firms seems even higher: the audit fees of S&P mid cap and S&P small cap increased 245 percent and 292 percent, respectively. The excessive costs of SOX 404 are the main reason why reform is demanded. The Public Companies Accounting Oversight Board (PCAOB) and the SEC are currently taking joint steps to make SOX 404 more efficient and cost effective. An example of this is the replacing of the controversial internal-control auditing standard with Auditing Standard N^o5⁴. Despite the newly adopted rules, opponents keep arguing that the imposed burdens are too high, especially for small firms (The Economist 2006a, 2006b).

Alternative low-cost regimes

The principles-based approach to corporate governance in many countries around the world resulted in less strict requirements on internal control compared to the US. Some corporate governance codes (e.g. Belgian Code Lippens) do not include any prescription on internal control reporting. Others (e.g. UK Combined Code; French Code) require management to communicate to shareholders and other stakeholders how they manage risks and internal controls in their annual report. In some codes (for example in the UK and Ireland) this description needs to be accompanied by an acknowledgement by the board that it has carried out a review of the effectiveness of the internal control and risk management system, without the requirement to report on the outcome of this review. Interestingly, in the development process of the UK Cadbury Report (1992), one of the predecessors of the Combined Code, the requirement that directors should report on internal control effectiveness was replaced into a suggestion that they may wish to do so due to intense lobbying by finance directors (Page and Spira 2007). Overall, in many countries around the world it is sufficient that management merely describes and/or reviews the company's internal control and risk management system without giving an explicit statement on the quality of these systems. Auditors are also not required in these countries to give an opinion on the quality of the system of internal control. The absence of any requirement on a management statement and/or an auditor opinion on internal control makes these regimes of very 'low cost', compared to the current requirements in the US.

One of the few exceptions to this general non-US approach with respect to internal control requirements is the code Tabaksblat in the Netherlands. This code can be considered to be a quite stringent code because it requires besides (1) a description also (2) a management statement on the adequacy and effectiveness of the internal control and risk

management system⁵. This is reflected in the following extract from best practice II.1.4 of the Dutch corporate governance code (2003):

II.1.4 The management board shall declare in the annual report that the internal risk management and control systems are adequate and effective and shall provide clear substantiation of this. In the annual report, the management board shall report on the operation of the internal risk management and control system during the year under review. In doing so, it shall describe any significant changes that have been made and any major improvements that are planned, and shall confirm that they have been discussed with the audit committee and the supervisory board.

The original intention of best practice II.1.4 was to combine the depth of SOX (by requiring besides a description also a statement on the quality of the internal control system) with the breadth of UK's Turnbull report (by extending the scope to cover strategic, operational and compliance objectives as well as financial reporting objectives). However, the detailed recommendations regarding compliance with best practice II.1.4 published by the monitoring commission of the Dutch corporate governance code in 2005 restricted the scope of the statement to internal controls over financial reporting (Monitoring Commissie Corporate Governance Code 2005). Therefore, in this paper, we focus on management's statement of an effective system of internal control over financial reporting.

The Dutch requirement for a management statement on internal control makes the Code Tabaksblat one of the most stringent codes on internal control among other principles-based codes, in which the description approach is prevailing. However, given the principle of comply-or-explain, management of Dutch companies can choose whether to comply and make such an explicit statement on the effectiveness of the system of internal control in the annual report or explain why they do not comply. Moreover, as opposed to SOX, there is no requirement of an external audit of the internal control system. Therefore, the Dutch regime on internal control reporting is clearly less expensive than SOX 404. Since individual audit fees are not publicly available in the Netherlands and in the absence, to our knowledge, of public studies on audit fees, we use total income growth from auditing as a proxy. The evolution of this figure for Dutch Big 4 auditors (who constitute 90 percent of our sample)

provides no indication of any significant increases in audit fees over the period 2002-2006⁶. Although we acknowledge that income growth from auditing for Dutch Big 4 auditors is a rough measure to use as a benchmark, it does provide some indication on the sharp difference between the development of audit fees in the Netherlands and the US, where audit fees increased with 271 percent over the same period.

Previous literature on the determinants and benefits of internal control reporting

In the US there are many studies investigating internal control weaknesses disclosures under SOX. Some of these studies focus on the determinants of internal control weaknesses disclosures and show that firms that disclose internal control deficiencies tend to be smaller, younger, financially weaker, more complex and growing rapidly. Moreover, these firms are more likely to use a Big 4 audit firm and to dismiss their auditor in the year prior to the disclosure (Doyle et al. 2007a; Ashbaugh-Skaife et al. 2007a; Bryan and Lilien 2005, Bronson et al. 2006; Zhang et al. 2007). Other US studies focus on the relevance of internal control weaknesses disclosures for security markets. In event studies De Franco et al. (2005) and Hammersley et al. (2008) examine the informational value of these disclosures and report that the cumulative abnormal return after the disclosure of internal control deficiencies is significantly negative. Hence, both papers support the idea that investors value internal control news and that they are not aware of these deficiencies prior to the disclosure. Ashbaugh-Skaife et al. (2007b) report that firms with internal control deficiencies have a higher cost of equity capital. Moreover their analysis shows that firms that report a remediation of previously reported internal control deficiencies exhibit a reduction in their cost of equity capital. In sum, these papers provide evidence that strong internal controls are valued by the market.

In contrast to the US, European research on internal control requirements in corporate governance guidelines is rather scarce. Deumes and Knechel (2006) investigate managers' economic incentives for voluntary reporting on internal control in the Netherlands over the period 1997-1999. We are not aware of any other recent European study in this field. This lack of research can be partly due to the principles-based approach to internal control reporting in Europe, which complicates the measurement of compliance with this corporate governance guideline. Compliance with principles is harder to measure in an empirical research setting compared to a more rules-based check-box approach.

III. RESEARCH QUESTIONS AND DEVELOPMENT OF HYPOTHESES

Research questions

Given the current US debate on the compliance costs of SOX 404 and the worldwide discussions on the costs and benefits of introducing a 'SOX-alike' statement in national corporate governance codes (e.g. in continental Europe, UK, Canada and Japan⁷), it is increasingly relevant to gain insights from competing internal control requirements regimes. The common goal of these discussions is to come up with efficient policies that promote good internal controls to provide stakeholders with reasonable assurance regarding the reliability of financial reporting. Given that it is difficult for external stakeholders to directly observe or verify the quality of the internal control system (Kinney 2000), a relevant research question is: How can management responsibly report on the company's system of internal control in ways that serve the public interest? Management reporting on internal control is likely to serve the public interest when management reporting on internal control is related to real economic characteristics (such as earnings quality).

Previous US research provided evidence of a cross-sectional relation between the effectiveness statement made by management (as required by SOX) and the quality of the

companies' earnings. An early study by McMullen et al. (1996) provides evidence of a negative association between voluntary management reports on internal controls in audited financial statements and financial reporting problems. The studies of Ashbaugh-Skaife et al. (2007a), Ashbaugh-Skaife et al. (2007c) and Doyle et al. (2007b) report lower earnings quality for firms disclosing internal control weaknesses (under SOX) in the period before they were disclosed. Similarly, a study of Bédard (2006) provides support for a negative association between internal control deficiencies reported under SOX and earnings quality, as measured by unexpected accruals.

The purpose of this paper is to investigate the association between internal control reporting and earnings quality in a 'low cost' internal control regime. As explained in Section 2, the corporate governance requirements with respect to internal control in the Netherlands are less costly than SOX 404. To reiterate, the Dutch requirements are to (1) describe the system of internal control (description) as well as to (2) provide a statement of an effective system of internal control (statement) in a comply-or-explain regime, without the requirement of an external auditor to give an opinion on the system of internal control. From prior research (Buijink et al., 1998), we know that the Dutch market dynamics are similar to the US and UK. For these reasons, the Netherlands provides us with an opportunity to examine whether both types of internal control requirements (description and statement) are informative in a low-cost regime⁸.

Development of hypotheses

COSO (1992) defines internal control as follows:

'Internal Control is broadly defined as a process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in the following categories:

- Effectiveness and efficiency of operations;
- **Reliability of financial reporting;** and
- Compliance with applicable laws and regulation.'

By definition, a good internal control system is supposed to be associated with a higher quality of financial reporting compared to a weak internal control system. Intuitively we can explain this proposition by the fact that managers of firms with weak internal controls are less able to reliably determine accrual amounts, which reflect the underlying economic condition of the firm. Moreover these managers may be more able to override the controls and manage earnings in order to meet financial reporting objectives. Regardless of whether the resulting misstatements are intentional or unintentional, the quality of earnings is likely to be lower when firms have weak internal controls⁹. If internal control reporting is reliable (in a sense that it truthfully reflects the effectiveness of the internal control system), we should find an association between management disclosures on internal control and earnings quality.

As explained in Section 2 prior research indicates that financial statement users view internal control reporting as informative and value this information in their pricing decisions (Hermanson 2000). Given the benefits of reporting an effective internal control system, company management may be eager to make such a statement, either truthfully or untruthfully. From a theoretical point of view, managers may withhold from opportunistic disclosure behaviour because of increased monitoring pressure, which may reduce agency problems and induce truthful reporting. Healy and Palepu (2001) argue that there are potentially two mechanisms for increasing the credibility of voluntary disclosures. The first mechanism is that assurance about the quality of management's disclosures can be provided by third-party intermediaries like an external auditor or a public oversight body. The second mechanism is that prior voluntary disclosures can be validated through required financial reporting itself. If we apply this to our case, this would mean for example that the revelation in the financial press of earnings management in a particular company also indicates that a previously made management statement of an effective internal control system was untruthful. Following Healy and Palepu (2001) a condition for this mechanism to be effective

in making disclosures credible is that there are adequate penalties for managers (for example imposed by legal system and board monitoring), if it turns out that disclosures knowingly made by managers subsequently prove to be false. As mentioned, in the Netherlands no external audit opinion is required on company management's statement of an effective system of internal control. However, the presence of a public oversight body¹⁰, the threat of litigation for untruthful reporting and managers' need to preserve their reputational capital may deter management from cheap talk on the quality of the system of internal control.

In practice, the Dutch monitoring commission¹¹ indicated in their first report (2005) on compliance with the corporate governance code that the requirement with respect to the management statement on the quality of the internal control system is one of the requirements of the code that companies are the least compliant with. From their roundtable discussion with supervisory board members from Dutch listed companies, it appeared that the statement has been the subject of multiple board discussions in listed companies and that company management is reluctant to make such explicit statements because of the potential risk for personal litigation^{12, 13}. Moreover, there exists much variation in the extent of description of internal control, which can be driven by differences in management's control consciousness. Given the attention company management seems to give to this issue and the choice they have to either comply or to explain non-compliance with the requirement in the code we hypothesize that:

H1: Companies reporting that their system of internal control is adequate and effective are associated with higher earnings quality.

Similarly we expect that¹⁴:

H2: Companies providing more disclosure on the system of internal control are associated with higher earnings quality.

IV. RESEARCH DESIGN

Sample

The Dutch corporate governance code became effective in 2004. Our sample consists of all Dutch firms listed on the Amsterdam Stock Exchange during the period 2004-2005. Consistent with previous research on earnings quality, we exclude financial institutions and insurance companies (SIC 60-67) because of their specific accounting requirements complicating comparisons with industrial and commercial companies. This gives 262 firm-year observations. Further, we exclude firms for which data is not available for some variables, firms that are cross-listed in the US¹⁵ and extreme observations¹⁶. This gives a final sample of 188 firm-year observations. We retrieved financial data from the Dutch database 'REACH'¹⁷ and hand-collected the IFRS-based data for 2004¹⁸. Data on the internal control requirements was hand-collected and manually coded from the annual reports of the companies.

Dependent variables

To examine the relation between internal control reporting and the quality of earnings, we use accrual-based measures to capture earnings management. Being aware that there is no best method to capture accrual manipulation and to avoid regression estimation problems to detect earnings management that occur outside the US due to smaller sample sizes (e.g. Meuwissen et al., 2007), we opt to examine industry-adjusted abnormal working capital accruals to measure earnings management. In the sensitivity analyses described in Section 6, we test the robustness of our results with alternative accruals measures. DeFond and Jiambalvo (1994) and Teoh et al. (1998) argue that non-working capital accruals are less susceptible to manipulation than working capital accruals. Like DeFond and Park (2001), we define working capital accruals as the change in non-cash working capital (WC). Abnormal

working capital accruals (AWCA) are calculated as realised working capital minus ‘expected’ working capital, where expected working capital is assumed to be a fixed proportion of sales (Dechow et al. 1998; DeFond and Park 2001). Formally, our proxy for abnormal accruals is:

$$AWCA_t = WC_t - [(WC_{t-1} / S_{t-1}) * S_t] \quad (1)$$

where:

$AWCA_t$ = abnormal working capital accruals in year t;

WC_t = non-cash working capital in year t, where non-cash working capital is computed as (current assets – cash and short-term investments) – (current liabilities – short-term debt);

S_t = sales in year t

Subsequently, abnormal working capital accruals are scaled by lagged total assets. The scaling controls for differences in firm size. Based on previous literature, we compute an industry-adjusted version of our accruals measure. Therefore, we divide the sample into industry groups. We compute the industry-adjusted abnormal working capital accruals measure by taking the unadjusted abnormal working capital accruals for firm i and subtracting the average unadjusted abnormal working capital accruals for firm i’s industry group. Since we want to capture negative as well as positive earnings manipulations, we take the absolute value of both measures. Warfield et al. (1995) show that the absolute value is a good proxy to capture the combined effect of income-increasing and income-decreasing earnings management.

Empirical model

Variables of interest

The independent variables of interest of this study are (1) whether company management gives a statement on the quality of the internal control system and (2) the extent of management description of the internal control system. The data for these variables was hand-collected from the annual reports of the companies.

The first variable is measured as a dummy, which takes the value of one if company management provides a statement of an effective system of internal control¹⁹.

The extent of description of internal control is measured with an internal control reporting score (ICRS). The construction of ICRS is similar to the construction of corporate governance disclosure indices used in prior literature (Hail 2002; Bushee 2004). In particular, we use the following four steps to construct ICRS. First, we identify the items to be included in the score, and categorize them in the following four groups:

- 1) Responsibility for the internal control system;
- 2) Audit structures: this category includes the existence of an audit committee and/or an internal audit function;
- 3) Codes or manuals: this category includes company codes or practice manuals relating to the improvement of internal control (e.g. code of conduct, internal control manual,...);
- 4) Internal control procedures: in this category all possible internal control procedures are coded (e.g. letters of representation, whistleblower's policy, authority limits, segregation of duties,...).

For a more detailed overview of each component of our index, we refer to Appendix 1. The second step in the composition of our score is to examine the annual reports of our sample firms to identify which items are disclosed. Each item described as part of the internal

control system of the company is given a value of one. The third step consists in calculating an unweighted score for each company by summing the individual score for each item. Consequently, ICRS captures the extent of management description of the internal control system in the annual report. Finally, we assess the statistical reliability of ICRS. This is important since self-constructed indices depend to an extent on the subjective assessment of the researcher applying the technique²⁰. Consistent with prior literature, we use Cronbach's alpha to test the reliability of ICRS. Cronbach's alpha for our sample is 0.834 which largely exceeds the generally expected lower limit of 0.70. In Section 6 we examine the sensitivity of our results for alternative measures of ICRS.

Control variables

Consistent with previous studies on earnings management, we include the following variables to control for differences in earnings management incentives. First, we include the natural logarithm of total assets as a proxy for firm size. It is argued in the literature that earnings quality is positively associated with firm size, because large firms tend to have more stable and predictable operations (Dechow and Dichev 2002).

Second, we include a leverage variable, measured as long-term debt scaled by total assets. The direction and effect of this variable is a priori unclear. Following the debt-equity theory, highly leveraged firms have incentives to manage earnings upwards to prevent violations of debt covenants (Watts and Zimmerman 1990; DeFond and Jiambalvo 1994; Young 1999). Alternatively, Becker et al. (1998) argue that high leverage may induce income-decreasing earnings management in financially distressed firms in view of contractual renegotiations.

Third, we control for performance, measured by the absolute value of operating cash flow scaled by total assets. Dechow et al. (1995) and Young (1999) highlight the importance

of controlling for financial performance, since the matching principle results in a natural smoothing property of accounting accruals. This results in negative (positive) abnormal accruals to occur in a period with extreme positive (negative) cash flows. Including a cash flow-based performance measure, which is unrelated to earnings management, in the regression models corrects for this effect.

Finally, we include industry dummies to control for the potential effect of the industry on our accruals measures and a year dummy, which takes the value of 1 for the observations in 2005.

Hence our empirical model formally looks as follows:

$$AWCA_t = \beta_0 + \beta_1 ICstat_t + \beta_2 ICRS_t + \beta_3 Size_t + \beta_4 Leverage_t + \beta_5 Performance_t + \beta_6 Year + \beta_{7-10} Industry + \varepsilon \quad (2)$$

where:

Dependent variable

$AWCA_t$ = absolute value of industry-adjusted abnormal working capital accruals,
scaled by lagged total assets

Independent variables

$ICstat_t$ = dummy variable (management statement of an adequate and effective internal control system=1, else=0)

$ICRS_t$ = internal control reporting score (see Appendix 1)

$Size_t$ = natural logarithm of total assets

$Leverage_t$ = ratio of long-term debt over total assets

$Performance_t$ = absolute value of operating cash flow scaled by total assets

$Year$ = year dummy (observations in 2005=1; else=0)

Industry = vector of industry dummies (SIC 10-19: Mining and construction; SIC 20-39: Manufacturing; SIC 40-49: Transportation, Communication, Electric, Gas, and Sanitary Services, SIC 50-59: Wholesale trade). SIC 70-89 (Services) is the industry of reference.

V. RESULTS

Descriptive statistics

The descriptive statistics of all variables are presented in Table 1, panel A. The descriptive statistics show that in 2004 (the year in which the corporate governance code came in force), only 18 percent of the companies choose to comply with the requirement contained in the Dutch corporate governance code to provide a statement of an effective system of internal control, and in 2005 28 percent of the companies comply with the requirement. While these percentages may seem low, they are relatively high compared to the number of effectiveness statements in the period following the report of the Peters Committee²¹ in 1997, the predecessor of the Tabaksblat Committee (2003) that developed the corporate governance code (Code Tabaksblat) in the Netherlands. Deumes and Knechel (2007) report that only 4 percent of the Dutch listed firms included an effectiveness statement in their annual report in that period (1997-1999). The compliance rate is also slightly higher than the rates reported by Bronson et al. (2006) in their study on the characteristics of US firms issuing management reports on internal control before they were mandated under SOX 404. Their analysis of a sample of US mid-sized firms²² in 1998 indicated that only 15 percent presented a statement of effective internal controls, and none of the reports included an external audit opinion. In the US, the number of firms stating that their internal control system is effective has increased remarkably under SOX. The last four years, only between 15 and 20 percent of US firms reported material weaknesses under SOX 404 and thereby

revealed that they had no reasonable assurance that their internal control system is effective (Bédard 2006; Doyle et al. 2007b). Even if we account for the fact that the number of control problems reported under SOX 404 might be understated (Jonas et al. 2007), the number of companies reporting an effective internal control system in the US remains still significantly higher than in the Netherlands. If we assume that this reporting increase is associated with an increase in the quality of the corresponding internal control systems, SOX 404 was more effective in stimulating investments in internal control than the Dutch Section II.1.4.

The mean value of our internal control reporting score is 7.06 with a minimum value of 0 and a maximum value of 22. More specifically average ICRS is 6.60 in 2004 and 7.54 in 2005, which implies a small increase in the extent to which companies describe their internal control system in 2005 (see Appendix 1). In panel B the value of the reporting score is reported conditional upon the effectiveness statement. From these figures it appears that companies reporting an effective internal control system score somewhat higher on the description of their internal control system compared to companies without a statement of an effective system of internal control. However, the difference is not significant (p-value of 0.584 in 2004 and 0.550 in 2005).

The mean value of abnormal working capital accruals in absolute value is 0.05. Furthermore, the descriptive statistics show that almost half of our sample firms are operating in the manufacturing industry.

Panel C of Table 1 shows the descriptive statistics of the accruals measures and control variables that are used in the sensitivity analyses (see Section 6).

Table 2 includes Pearson correlation coefficients among all independent variables. As can be seen, the risk of bias due to strong correlations is minimal.

- Insert Table 1 & 2 -

Univariate results

Table 3 presents the results of the univariate analysis. Panel A shows that firms with a statement of an effective system of internal control have significantly lower abnormal accruals ($p < 0.01$) compared to firms without such statement. This would imply that firms reporting that their system of internal control is adequate and effective are associated with higher accruals quality. Panel B presents the correlation between abnormal accruals and ICRS, capturing the extent of disclosure on internal control. The ICRS-variable is significantly negatively correlated with abnormal accruals at 0.01 level, which suggests that companies disclosing more on internal control are associated with higher earnings quality.

- Insert Table 3 -

Regression results²³

The regression results to test our earnings management hypotheses are presented in Table 4. To test hypothesis 1, the regression analysis is first performed without the ICRS-variable. The results in Table 4 indicate, consistent with hypothesis 1, that companies reporting that their system of internal control is adequate and effective (ICstat) are associated with significantly lower abnormal accruals.

The model to test our second hypothesis includes the ICRS-variable, but not the statement on internal control (ICstat). The coefficient on the ICRS-variable is negative, but not significantly different from zero.

In our final analysis, we include both internal control variables (ICstat and ICRS) in the regression model. The coefficients of both variables are negative, but only ICstat is significantly different from zero. These results suggest that a management statement of an

effective internal control system provides more information on the quality of earnings than a mere description of the internal control system.

- Insert Table 4 -

VI. SENSITIVITY ANALYSIS

The following sensitivity analyses are performed to check the robustness of our results.

Alternative earnings management proxies

Our first test relates to the accruals measures used. Given that there is no best way to measure discretionary accruals and that all existing proxies are criticized of measuring discretionary accruals with error, we use the following additional measures: current accruals, total accruals, abnormal working capital accruals, industry-adjusted total accruals, performance-adjusted total and abnormal working capital accruals, and performance- and industry- adjusted abnormal total accruals (Francis and Wang 2007). Following Myers et al. (2003), we measure current accruals as $(\text{change in current assets} - \text{change in cash and cash equivalents}) - (\text{change in current liabilities} - \text{change in short-term debt and current portion of long-term debt})$. Current accruals are subsequently scaled by lagged total assets. Total accruals are calculated as the change in non-cash current assets minus current liabilities (excluding short-term debt and income taxes payable) minus depreciation. Abnormal working capital accruals are defined in the same way as in our main analysis, but unadjusted for industry. Industry-adjusted total accruals are measured by taking unadjusted total accruals for firm i and subtracting the average unadjusted total accruals for firm i 's industry group. Based on Francis et al. (2005) we also compute a performance-adjusted version of the total and abnormal working capital accruals measures. Therefore, we divide the sample into deciles based on return on assets (ROA). We compute the performance-adjusted total

accruals measure by taking the unadjusted total accruals for firm *i* and subtracting the average unadjusted total accrual for firm *i*'s ROA-decile. Similarly, we compute the performance-adjusted abnormal working capital accruals. Finally, we compute abnormal total accruals by first calculating predicted total accruals, based on Francis and Wang (2007), as

$$\text{Predicted Accruals} = \left\{ \left[S_t * (CA_{t-1} / S_{t-1}) \right] - \left[PPE_t * \left(\text{depreciation}_{t-1} / PPE_{t-1} \right) \right] \right\} / TA_{t-1} \quad (3)$$

where:

CA_t = current accruals in year *t* ;

S_t = sales in year *t*; and

PPE_t = property, plant and equipment in year *t*;

Abnormal accruals are defined as the firm's actual total accruals in year *t* minus predicted total accruals for year *t* as defined above. We also use the performance-adjusted and industry-adjusted version of the abnormal accruals measure. All these alternative measures (results not reported) do not qualitatively change the results for our variables of interest.

Different compositions of ICRS

Our second sensitivity analysis tests the robustness of our main results for the composition of the internal control reporting score. More specifically, we test (1) whether our results are robust for the different individual categories of internal control disclosures used to construct the global score (ICRS), (2) whether the unbalanced number of items in the ICRS-categories bias the results and (3) whether scaling of ICRS affects our findings. To this end, we construct a subscore for each individual category of internal control disclosures from which the global score (ICRS) is composed. In this way we get four subscores: a responsibility score (ICR_RS), an audit score (ICR_AS), a codes score (ICR_CS) and a procedures score (ICR_PS) (see Appendix 1). Subsequently, we replace the ICRS in our

regression by each of these subscores. As presented in Table 5, the results of this analysis are similar to the results reported for ICRS. None of the coefficients of the subscores is significantly different from zero. This implies that, contrary to a management's statement of an effective system of internal control, none of the different types of internal control disclosures are associated with higher earnings quality. Hence, the description approach to internal control reporting seems to be less informative on earning quality than the requirement to provide a statement of an effective system of internal control.

- Insert Table 5 -

As summarized in Appendix 1, each category of ICRS contains a different number of items. To check whether the unbalanced number of items in the categories bias the results, we construct two alternative proxies to capture variation in the extent of description. The first proxy consists in scaling the four subscores by their maximum score before summing them. The resulting score has an average value of 1.30 and a maximum value of 4. The second proxy uses a four point scale for each category, where a company gets a value of 2 for a specific subscore when half of the items in that category are disclosed. Summing the individual scales of the four categories results in a 16-point scale with an average value of 5.96. Replacing the original ICRS with each of these alternative proxies does not alter our conclusions. The coefficients on the alternative reporting score proxies remain negative, but are not significant.

Although the items from which the ICRS is composed are not weighted according to their size²⁴, scaling problems could affect our results. To control for this effect, we scale ICRS by previous year total assets. Including this scaled ICRS in the empirical model does not alter our conclusions.

Interaction effect

The descriptive statistics (Table 1, panel B) suggest that companies reporting an effective internal control system score somewhat, though not significantly, higher on the description of their internal control system as well. By considering the interaction of the two variables of interest (ICstat and ICRS), we allow the coefficient of the ICRS-variable to change conditional on whether or not an effectiveness statement is present. Including the interaction term in equation (2) shows that the coefficient of the interaction term (results not reported) is *positive*, but not significant at conventional levels (p-value of 0.141). The positive sign of this coefficient would suggest that the negative association between ICRS and the magnitude of abnormal accruals becomes less negative for companies that include an effectiveness statement in their annual report. However, this conclusion cannot be drawn given the insignificance of the coefficient of the interaction term.

Additional control variables

Our final sensitivity analysis considers different control variables to test whether our results are not biased due to correlation between these variables and both the accruals measure and our variables of interest.

Dechow and Dichev (2002) find that certain characteristics of a firm result in poorer accruals quality. Moreover, it appeared from Hribar and Nichols (2007) that controlling for differences across firms in the natural volatility of their accruals mitigates the potential bias arising from the use of the absolute value of discretionary accruals. For this reason, we include following Doyle et al. (2007b) four innate firm variables as controls in our analysis: loss proportion, sales volatility, cash flow (CFO) volatility, and operating cycle (see Appendix 2 for variable definitions).

Furthermore, prior US research (Doyle et al. 2007a; Ashbaugh-Skaife et al. 2007a; Bryan and Lilien 2005) has shown that firms that disclose internal control deficiencies tend to be younger, more complex, are growing rapidly and are more likely to use a dominant audit firm. To make sure that our findings are not driven by possible correlation of these factors with the internal control reporting proxies (ICstat and ICRS) and the accruals measure that we use, we include firm age, sales growth, extreme sales growth, the number of industries in which a company is active and audit firm dummies as control variables (see Appendix 2 for variable definitions).

The results of these sensitivity tests (not reported) indicate that our findings are robust for the inclusion of these factors. This suggests that a management statement of an effective system of internal control is positively related with accruals quality beyond these firm characteristics.

VII. DISCUSSION

The purpose of this study is to investigate the relationship between internal control reporting and earnings quality in a setting with ‘low-cost’ internal control reporting requirements. In particular, we are interested in (1) whether we observe cheap talk in this setting, and (2) comparing the value of a management statement of an effective internal control system with that of a mere description of the internal control system in the annual report. We conduct our study in the Netherlands, which provides an interesting research setting to investigate this for the following reasons. First, the requirement in the Dutch corporate governance code to provide a statement on the effectiveness of the system of internal control as well as to describe the internal control system is rare in corporate governance codes across the world. Second, in contrast to the US, Dutch companies, following the comply-or-explain principle, can choose not to comply with the requirement of

providing a statement on the effectiveness of the system of internal control if they motivate their decision of non-compliance. Third, an external audit opinion on the quality of the internal control system is not required. Hence, the requirements on internal control in the Dutch corporate governance code are of much lower cost than SOX 404 and therefore they provide an opportunity to further examine the relationship between internal control reporting and earnings quality.

The results of our study suggest that an unaudited statement of company management on the quality of its internal control system is informative in a ‘comply-or-explain’ context. In particular, companies stating that their internal control system is adequate and effective are associated with a lower level of earnings management (as captured by a lower level of discretionary accruals), which is likely to reflect a lower likelihood of earnings manipulation or fraud.

Our finding in the Netherlands that companies with a statement of an effective system of internal control are associated with lower abnormal accruals is consistent with recent US studies (Bédard 2006; Doyle et al. 2007b) showing that companies reporting material weaknesses in their internal control system have lower earnings quality. Our results contribute to this literature by suggesting that even in an institutional setting where compliance costs are low, compared to the costs imposed by SOX 404, company management responsibly reports on the quality of the internal control system (i.e. the effectiveness statements made by company management are related to accruals quality). In both the higher (US) and lower (Dutch) cost setting, a statement of an effective system of internal control provides an indication of the reliability of financial reporting.

This study, however, also revealed that the percentage of companies in the Netherlands providing a statement of an effective internal control system is rather low (i.e. 28 percent in 2005). This insight is important since providing information on internal control is

not the only goal of the worldwide reform of corporate governance regulation. A common objective of most regulators was to enhance the reliability of companies' financial statements where improving internal controls was one of the goals. If the effectiveness statements made by company management actually reflect the quality of the underlying internal control system – which seems likely given the results of this study - SOX was more effective in promoting investments in internal controls than section II.1.4 of the Dutch Code Tabaksblat. Indeed, under this assumption 72 percent of the Dutch listed companies are not willing to report that the system of internal control is effective, which could mean that there may be an internal control weakness, as opposed to 15 percent to 20 percent in the US disclosing a material internal control weakness²⁵ (Bédard 2006; Doyle et al. 2007b). The legal requirement in the US Foreign Corrupt Practices Act (1977) that requires companies to have an effective system of internal control over financial reporting may be partially responsible for the observed gap between the US and the Netherlands. Furthermore, this gap may be driven by the different regulation on transparency about the effectiveness of the system of internal control. While in the US, transparency about the effectiveness of the system of internal control is mandatory, it is voluntary in the Netherlands following the comply-or-explain principle. Making a statement compulsory as in the US (and thereby depart from the 'comply-or-explain' principle) in combination with the requirement to have an effective system of internal control is likely to oblige companies to invest in internal control in order to minimize risk of litigation. Finally, the absence of a mandatory external audit of internal control in the Netherlands could also drive this observed gap between the US and the Netherlands. In particular, avoiding bad publicity triggered by a negative audit report on internal control can also be an additional motivation to invest in high-quality internal controls.

Hence, our findings raise a number of relevant questions for future research. First, it can be questioned whether from an economic point of view regulators should intervene in the

level of investment of companies in internal control or whether companies should have the discretion to weigh the costs and benefits of investing in internal control. Second, it can be questioned whether US regulation provides more incentives for company management to misreport thereby increasing the demand for and value of an external auditor. Therefore, a fruitful area for future research is to further investigate (1) the effect of making a management statement on internal control mandatory²⁶ and (2) the value added of a mandated audit report on internal control. Moreover, it would be interesting to study the association between earnings quality and internal control reporting, by investigating a possible causal relationship between them. Although, we provide evidence of a positive association, we cannot comment on whether reporting on the adequacy and effectiveness of the internal control system will improve earnings quality. It is possible that the control consciousness of management is the underlying driver for both the presence of an internal control statement (better controls) and the absence of earnings management. If this is the case, demanding regulation on internal control will improve the reliability of financial statements, only to the extent that it succeeds in altering the control consciousness of company management.

Our results do not provide evidence that the extent of description on internal control is associated with lower levels of earnings management. This finding may be useful for regulators in other countries considering whether or not to include in their corporate governance code the requirement of an explicit statement on the quality of internal controls. Our results raise questions on the choice that many countries in the world have currently made not to include a requirement for an effectiveness statement on internal control in their corporate governance guidelines.

Overall, our findings may be useful in the current debate on the costs and benefits of internal control reporting in the US (see for example Solomon and Peecher 2004; Bédard

2006). This paper is to our knowledge the first to provide insights into the informativeness of internal control reporting in a setting which is considerably less costly than SOX 404.

The results of this study are subject to the following limitations. First, we acknowledge that potential measurement error and bias may exist in measuring the description of internal control systems. Although, we tested the internal reliability of our ICRS score, capturing the true underlying variable remains susceptible to some subjective judgement. Second, our study considers the level of accruals which is only one aspect of earnings quality. Third, we are aware of the limitations of accruals measures in detecting earnings management. However, we have performed sensitivity analyses with different accruals measures providing evidence for the robustness of our conclusions.

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TABLE 1
Descriptive statistics of all variables
(n=188)

Panel A: Descriptive statistics of variables used in main analysis

Variable ^a	Mean	Std.Dev.	Min	Max
AWCA	0.05	0.05	0.00	0.31
Firm Size	914,442	1,774,474	3,998	11,829,000
Leverage	0.14	0.14	0.00	0.83
Performance	0.07	0.15	-1.24	0.38
ICRS	7.06	5.41	0.00	22.00
	2004	2005		
	N	%	N	%
ICstat	96		92	
<i>present</i>	17	17.71%	26	28.26%
<i>not present</i>	79	82.29%	66	71.74%
Industry classification	96		92	
<i>Mining and construction</i>	8	8.33%	7	7.61%
<i>Manufacturing</i>	42	43.75%	39	42.39%
<i>Transportation, communication, electricity, gas and sanitary services</i>	6	6.25%	6	6.52%
<i>Wholesale trade</i>	17	17.71%	16	17.39%
<i>Services</i>	23	23.96%	24	26.09%

Panel B: Internal control reporting score conditional on effectiveness statement

Variable ^a	Mean		t-test (p-value)
	Internal control statement		
	<i>present</i>	<i>not present</i>	
ICRS 2004	7.23	6.47	0.584
2005	8.12	7.32	0.550

TABLE 1 (Continued)

**Panel C: Descriptive statistic of control variables used in sensitivity analysis
(Section 6)**

Variable^a	Mean	Std.Dev.	Min	Max
CA	0.06	0.06	0.00	0.37
TA_unadjusted	0.07	0.06	0.00	0.37
AWCA_unadjusted	0.05	0.06	0.00	0.32
ATA_unadjusted	0.09	0.11	0.00	0.71
TA_perfadjusted	0.06	0.06	0.00	0.35
AWCA_perfadjusted	0.05	0.05	0.00	0.28
ATA_perfadjusted	0.09	0.09	0.00	0.60
TA_indadjusted	0.06	0.06	0.00	0.38
ATA_indadjusted	0.09	0.10	0.00	0.62
Loss proportion	0.23	0.29	0.00	1.00
Sales volatility	0.27	0.24	0.01	1.26
OCF volatility	0.15	0.15	0.00	0.89
Operating cycle	17.74	3.84	8.54	24.34
Firm age	3.73	1.14	0.69	5.97
Sales growth	0.08	0.31	-0.50	3.06
Number of industries	1.65	0.98	1.00	5.00
Big 4 dummies	0.90	0.30	0.00	1.00

^aVariable definitions:

- AWCA = absolute value of industry-adjusted abnormal working capital accruals scaled by lagged total assets
- Firm Size = total assets in thousand EUR
- Leverage = ratio of long-term debt over total assets
- Performance = the ratio of operating cash flow on lagged total assets
- ICRS = internal control reporting score
- ICstat= dummy variable (full management statement on the adequacy and effectiveness of internal control =1, else=0)
- CA = absolute value of current accruals scaled by lagged total assets
- TA_unadjusted = absolute value of total accruals scaled by lagged total assets
- AWCA_unadjusted = absolute value of abnormal working capital accruals scaled by lagged total assets
- ATA_unadjusted = absolute value of abnormal total accruals scaled by lagged total assets
- TA_perfadjusted = absolute value of performance-adjusted total accruals scaled by lagged total assets
- AWCA_perfadjusted = absolute value of performance-adjusted abnormal working capital accruals scaled by lagged total assets
- ATA_perfadjusted = absolute value of performance-adjusted abnormal total accruals scaled by lagged total assets
- TA_indadjusted = absolute value of industry-adjusted total accruals scaled by lagged total assets
- ATA_indadjusted = absolute value of industry-adjusted abnormal total accruals scaled by lagged total assets

See Appendix 2 for other variable definitions

TABLE 2
Pearson Correlation Coefficients between the Independent Variables
(n=188)

Variable^a	ICstat	ICRS	Size	Leverage	Performance
ICstat	1.0000				
ICRS	0.0710	1.0000			
Size	0.0349	0.5518**	1.0000		
Leverage	0.0914	0.2573**	0.5545**	1.0000	
Performance	-0.0091	-0.1745*	-0.2344*	-0.1845*	1.0000

*,**Significantly correlated at the $\alpha = 0.05$; 0.01 level, respectively (two-tailed)

^a Variable definitions

Size= the natural logarithm of total assets

Performance= absolute value of the ratio of operating cash flow on lagged total assets

See Table 1 for variable definitions

TABLE 3
Univariate analysis on earnings management
(n=188)

Panel A: Compare means of compliant firms versus non-compliant firms

	No IC-statement Mean	IC-statement Mean	Difference t-statistic (two-tailed sign.)
AWCA ^a	0.0557	0.0364	2.9650 (0.004)***

Panel B: Correlation ICRS^a and abnormal working capital accruals

	Correlation with ICRS (two-tailed sign.)
AWCA ^a	-0.212 (0.004)***

*, **, *** Significantly different from zero/correlated at the $\alpha = 0.10$; 0.05; 0.01 level, respectively (two-tailed)

^aSee Table 1 for variable definitions:

Table 4
Regression analysis on earnings management (dependent variable AWCA^a)
(n=188)

Variables^a	Model 1	Model 2	Model 3
ICstat	-0.019 (0.006)***		-0.019 (0.007)***
ICRS		-0.001 (0.413)	-0.000 (0.489)
size	-0.005 (0.031)**	-0.004 (0.122)	-0.005 (0.108)
leverage	-0.024 (0.421)	-0.031 (0.302)	-0.026 (0.381)
performance	0.131 (0.004)***	0.128 (0.004)***	0.129 (0.004)***
industry and year included			
constant	0.111 (0.001)***	0.102 (0.003)***	0.105 (0.003)***
Observations	188	188	188
Adjusted R-squared	0.216	0.194	0.213
F-value	3.447 (0.001)***	3.206 (0.001)***	3.114 (0.001)***

The table reports OLS coefficient estimates and standard errors corrected for heteroskedasticity and for clustering of observations by firm (in parentheses).

*, **, *** Significantly different from zero at the $\alpha = 0.10$; 0.05; 0.01 level, respectively (two-tailed)

^aSee Table 1 for variable definitions

TABLE 5
Sensitivity analysis (dependent variable AWCA^a)
(n=188)

Variables ^a	Model 0	Model 1	Model 2	Model 3	Model 4
ICRS	-0.001 (0.413)				
ICRS_rs		-0.006 (0.356)			
ICRS_as			-0.002 (0.681)		
ICRS_cs				0.001 (0.715)	
ICRS_ps					-0.001 (0.259)
size	-0.004 (0.122)	-0.005 (0.034)**	-0.005 (0.118)	-0.006 (0.046)**	-0.004 (0.107)
leverage	-0.031 (0.302)	-0.028 (0.340)	-0.029 (0.338)	-0.028 (0.362)	-0.031 (0.292)
performance	0.128 (0.004)***	0.128 (0.004)***	0.129 (0.003)***	0.130 (0.003)***	0.127 (0.004)***
industry and year (included)					
constant	0.102 (0.003)***	0.108 (0.001)***	0.104 (0.004)***	0.112 (0.002)***	0.101 (0.002)***
Observations	188	188	188	188	188
Adjusted R ²	0.194	0.195	0.193	0.192	0.197
F-value	3.206 (0.002)***	3.305 (0.001)***	3.197 (0.002)***	3.238 (0.002)***	3.202 (0.002)***

The table reports OLS coefficient estimates and standard errors corrected for heteroskedasticity and for clustering of observations by firm (in parentheses).

*, **, *** Significantly different from zero at the $\alpha = 0.10$; 0.05; 0.01 level, respectively (two-tailed)

^a Variable definitions:

ICR_RS = internal control reporting score : responsibility dummy

ICR_AS = internal control reporting score : audit score

ICR_CS = internal control reporting score : codes score

ICR_PS = internal control reporting score : procedures score

See Table 1 for other variable definitions

**APPENDIX 1:
Internal Control Reporting Score (ICRS)**

Categories	Individual items	2004 ^a (%)	2005 ^a (%)	Scores
Responsibility	Management is responsible for the internal control system	41.67	40.22	ICR_RS
Audit structures	Existence of an audit committee	26.04	36.93	ICR_AS
	Existence of an internal audit function	48.96	58.70	
Codes or manuals	Code of conduct	33.33	50.00	ICR_CS
	Management charter	11.46	13.04	
	Manual for accounting practices	30.21	36.96	
	Manual for financial decision making	22.92	18.48	
	Manual for information systems	16.67	10.87	
	Manual for internal control procedures	15.63	18.48	
	Others	15.63	25.00	
Internal control procedures	Strategic plans	31.25	35.87	ICR_PS
	Budgets	43.75	50.00	
	Monitoring	35.42	50.00	
	Business reviews	40.63	35.87	
	Letters of representations	23.96	22.83	
	Whistleblower policy	40.63	64.13	
	Crisis management system	7.29	7.61	
	Benchmarking	12.50	14.13	
	Standardization	10.42	8.70	
	Quality assurance	20.83	14.13	
	Data security	14.58	6.52	
	Centralization	12.50	13.04	
	Segregation of duties	3.13	2.17	
	Job description/responsibilities	25.00	15.22	
	Training	9.38	6.52	
Authority limits	15.63	27.17		
Communication	16.67	23.91		
Others	34.38	47.83		

^a percentage of firms that included this specific item in the description of the internal control system in the annual report in 2004 and 2005 respectively

**APPENDIX 2:
Control variables definitions**

Innate firm characteristics that affect accruals quality	
Loss proportion	The percentage of loss years in the preceding five years.
Sales volatility	The standard deviation of the change in sales, scaled by average assets in the preceding five years.
OCF volatility	The standard deviation of cash flow from operations, scaled by average assets in the preceding five years.
Operating cycle	The log of the average of $[(\text{Sales}/360)/(\text{Average Accounts Receivable}) + (\text{Cost of Goods Sold}/360) / \text{Average Inventory}]$, over the preceding five years.
Additional internal control determinants that could be related to accruals quality	
Firm age	The log of the number of years since the foundation year.
Sales growth	Percentage of year-to-year growth of sales.
Extreme sales growth	An indicator variable that is equal to one if year-to-year sales growth falls into the top quintile and zero otherwise.
Number of industries	The log of the number of industries in which the company is active.
Auditor dummies	Indicator variables equal to one if the firm is audited by a particular audit firm and zero otherwise.
Big four dummies	An indicator variable that is equal to one if the firm's auditor is part of the Big 4 audit firms and zero otherwise.

¹ Section 404 requires that annual reports filed with the SEC contain an 'internal control report' in which management states that it is responsible for establishing and maintaining an adequate internal control structure and procedures for financial reporting, and assesses the effectiveness of those controls. Moreover, an external auditor must conduct an overall assessment on internal controls over financial reporting in conjunction with the audit of the financial statements.

² Listed firms in the Netherlands are scrutinized by the AFM (The Netherlands Authority for the Financial Markets).

³ The FCPA requires each firm to devise and maintain a system of internal accounting controls sufficient to provide reasonable assurance that (1) transactions are executed in accordance with management's general or specific authorization; (2) transactions are recorded as necessary (a) to permit preparation of financial statements in conformity with GAAP or any other criteria applicable to such statements, and (b) to maintain accountability for assets; (3) access to assets is permitted only in accordance with management's general or specific authorization; and (4) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences (FCPA, 1977).

⁴ AS 5, which supersedes AS 2, does not include the previous standard's detailed requirements to evaluate management's own evaluation process and clarifies that an internal control audit does not require an opinion on the adequacy of management's process.

⁵ Other countries that require an effectiveness statement on the internal control system to be disclosed to the public are amongst others Sweden (effective since 2006), Canada (effective in 2008) and Japan (effective in 2008).

⁶ The income growth from auditing for the Big 4 audit firms in the Netherlands for the period 2002-2006 is as follows: an increase of 8.89 percent for PricewaterhouseCoopers; an increase of 14.33 percent for KPMG; an increase of 14.71 percent for Ernst & Young; and a decrease of 28.8 percent for Deloitte. In the UK, FTSE 100 audit fees increased by just under 1 percent between 2003 and 2006.

⁷ As part of its corporate governance policy the European Commission has signaled its intention to require companies to report on risk management and internal control. The new Directive on Statutory Audit (2006/43/EC) requires the audit committee (or alternative body) of listed and other eligible public interest entities to monitor the effectiveness of the company's internal control, internal audit where applicable, and risk management systems. The new amending Directive concerning annual and consolidated accounts requires listed companies to publish an annual corporate governance statement, including a description of the main features of any existing risk management systems and internal controls in relation to the financial reporting process. However, the European Corporate Governance Forum considers that there is no need to introduce a legal obligation for boards to certify the effectiveness of internal controls at EU level. (European Corporate Governance Forum 2006) In the UK, the prescription in the Cadbury Code (1992) that directors should report on internal control was removed from the final version of the code (Chambers 1997). After considerable collaboration among provincial legislators and the Canadian Securities Administrators (CSA), Canadian listed companies are required to provide management certification of the design and operating effectiveness of internal control over financial reporting. The design certification requirements became effective for years ending after June 29, 2006, and the effectiveness certification requirements are proposed for years ending after June 29, 2008 (CSA, 2006, 2007a). Although it originally had been proposed, auditor certification of management control assessments is not required. (Pollanen and Pollanen 2007) In 2006 Japan has developed its own version of the Sarbanes-Oxley Act (JSOX), which will come into effect in 2008. Like its American predecessor, this law requires management to prepare a statement on the effectiveness of internal controls and an external auditor to audit the statement. Also a number of other jurisdictions have recently passed or are in the process of passing internal control reforms.

⁸ The voluntary nature of the effectiveness statement and the absence of a requirement for audit report on internal control makes the Dutch section II.1.4 similar to reporting requirements under US section 302. Firms listed in the US that are temporarily exempted from compliance with SOX 404 (non-accelerated filers and foreign issuers) do have management reporting under Section 302. While disclosure of material weaknesses is mandatory under Section 404, ambiguity exists as to whether material weaknesses are required to be disclosed under Section 302. SEC staff's response to Frequently Asked Questions also indicates that 'if the registrant were to identify a material weakness, it should carefully consider whether that fact should be disclosed, as well as changes made in response to the material weakness' (SEC 2004). In sum, SOX 302 and the related SEC rules and interpretations call for the voluntarily disclosure of internal control material weaknesses for all filers, since August 2002. The voluntary nature and the exemption from an external audit on internal control makes Section 302 similar to the Dutch requirements. There are, however, two important differences between both regimes, which makes the US section 302 only a second best option to compare the informativeness of effectiveness statements under SOX 404 with similar statements in 'low cost' regimes. First, section 302 disclosures may be driven by a feedback effect, which stems from the fact that firms know they will eventually be subject to a full external audit and attestation of their internal controls under Section 302 (Doyle et al. 2007b). Second, the Dutch section II.1.4 requires, as SOX 404, that management reports that their internal control system is *effective*, whereas SOX 302 stimulates disclosures of *material weaknesses* in internal control. The importance of this difference can be noticed when looking at Dutch firms cross-listed in the US. In our sample period (2004-2005) none of these cross-listed firms were already subject to Section 404 in the US, they did however had management reporting of material weaknesses under Section 404. Of the 13 non-financial Dutch firms that are cross-listed in the US respectively 9 and 7 companies did not include an effectiveness statement in their annual report in 2004 and 2005. However, only one of these companies reported a material weakness under Section 302 in 2005. For these reasons, we believe the Dutch setting is more appropriate to study the informativeness of a 'low cost' internal control regime than US Section 302.

⁹ Internal control or the lack thereof can influence the precision of accrual amounts in multiple ways. Earnings manipulations by management harm the positive 'tone at the top' and thereby violate an essential part of the control environment. The internal control framework, developed by COSO, stipulates that 'the effectiveness of internal controls cannot rise above the integrity and ethical values of the people who create, administer and monitor them.' Many of these manipulations will show up in the level of discretionary working capital accruals (e.g. recording virtual sales). Working capital accruals can also be influenced by specific internal control activities. In an effective internal control system a variety of controls are performed to check accuracy,

completeness and authorization of transactions. A customer's order, for example, is accepted only upon reference to an approved customer file and credit limit and thereby will prevent intentional and unintentional errors to enter the accounting system. (COSO 1992)

¹⁰ Listed firms in the Netherlands are scrutinized by the AFM (The Netherlands Authority for the Financial Markets).

¹¹ This commission was chaired by Prof. dr. Freijns, 2005.

¹² For example, listed firms in the Netherlands are scrutinized by the AFM (The Netherlands Authority for the Financial Markets).

¹³ In the UK, the lobbying by finance directors, who feared litigation in response to the prescription in the Cadbury Code (1992) that directors should report on internal control effectiveness, resulted in a replacement of this prescription into a suggestion that they may wish to do so. (Chambers 1997)

¹⁴ Even the description of the internal control system without an explicit effectiveness statement increases the firm's exposure to legal liability.

¹⁵ We excluded all cross-listed firms (13) to minimize interference with SOX 404 and to increase intra-sample homogeneity.

¹⁶ To remove outliers we deleted the observations which are in the top or bottom 1 percent of the distribution of scaled total accruals.

¹⁷ REACH is a database distributed by Bureau Van Dijk (<http://www.bvdep.com/>) that contains financial statement data of Dutch listed and non-listed companies.

¹⁸ Most companies included in the sample changed their accounting policy in 2005 in order to be compliant with IFRS. According to IFRS 1, first-time adopters should reconcile their financial statements of the year preceding the adoption to IFRS to ease comparison. For the accrual proxies of 2005 we use those reconciled accounting numbers to make sure our results are not influenced by the change in accounting policies.

¹⁹ Apart from the provision itself, there were no additional guidelines published in 2004. Therefore companies are considered to be compliant in 2004 when they explicitly state in their annual report that the company's internal control system is adequate and effective. In 2005 the monitoring commission of the Dutch corporate governance code published detailed recommendations regarding compliance with best practice II.1.4. In their report they specify that a company is considered to be compliant with the first part of this provision when company management declares (1) that the internal control systems gives reasonable assurance that the financial reporting does not contain any material inaccuracies, (2) that the control system has worked properly in the year under review and (3) that there are no indications that these systems will not perform satisfactorily during the current financial year. Therefore, for the year 2005, the internal control dummy takes the value of 1, when company management has fulfilled all three requirements.

²⁰ A second researcher has coded a subsample to check for consistency in the coding.

²¹ The Peter's Committee (1997) suggested that the supervisory board of Dutch companies discusses the effectiveness of internal control. This is consistent with COSO (1992), the Cadbury Committee (1992) and the Hampel committee (1998) recommending that directors report on the effectiveness of the firm's system of internal control.

²² The average size of the companies in their sample (\$1.2 billion in assets) is comparable to the size of the average sample company in our study (€0.9 billion in assets).

²³ The reported results are from OLS regressions standard errors corrected for heteroskedasticity and for clustering of observations by firm. Running regressions by year and including random firm effects leads to similar results. Given that the range of our dependent variable is constrained (by taking absolute values), we also run tobit regression models. Untabulated results are qualitatively similar.

²⁴ For example, if a firm discloses that it has an internal audit function, the value for this item in ICRS is one, independent of the size of this audit function (large audit department versus one internal auditor). By doing so, we mitigate the effect of firm size on the ICRS, caused by a natural correlation between firm size and the dimension of the internal control system. Indeed, for a small firm one internal auditor might be as effective as an extensive audit department for a large firm.

²⁵ However not including a statement that the system of internal control is effective does not necessarily mean that there is a material weakness. Of the 13 non-financial Dutch firms that are cross-listed in the US respectively 9 and 7 companies did not include an effectiveness statement in their annual report in 2004 and 2005. However, only one of these companies reported a material weakness under Section 302 in 2005.

²⁶ To derive the incremental effect of the requirements of SOX 404 on the 'voluntary' Dutch Section II.1.4 without an external audit, it would be interesting to compare local Dutch listed firms with Dutch firms cross-listed in the US. However, in our sample period (2004-2005) none of the Dutch cross-listed firms are subject to SOX 404, since the SEC postponed the date by which foreign issuers must comply with Section 404 to fiscal years ending on or after July 15, 2006 for foreign issuers that are large accelerated filers and even until 2007 and 2008 for smaller and non-accelerated filers. Extending our sample period, does not solve this issue, since the

number of cross-listed firms in our sample (13) is too small to generalize inferences from this kind of analysis. For example, even in 2006 less than 10 Dutch companies (accelerated filers) comply with SOX 404. Moreover, there are no Dutch firms that voluntarily chose to include an audit attestation on internal control in their annual report.