Cross-listing and firm information environment: does SOX Section 302 have any material effect?

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ABSTRACT

Previous literature documents an increase in the quality of the firm information environment following cross-listing in the U.S. and motivates this result with the bonding effect. This paper disputes the idea that the cross-listing *per se* enhances the quality of the firm information environment. We challenge this idea considering whether the quality of the information environment for cross-listed firms depends on an effective or mimicking adoption of stricter rules. As research setting, we use Section 302 of the Sarbanes-Oxley Act that requires to disclose any discovered internal control deficiency on internal controls over financial reporting. Our findings support the idea that the quality of the firm information environment increases following cross-listing only when cross-listed firms effectively commit themselves to higher levels of corporate transparency, and not merely in name just mimicking the adoption of stricter rules. Our results are robust to the endogeneity of cross-listing decision, to unobservable factors related to internal control deficiency, to some measurement issues and to the inclusion / exclusion of some overrepresented countries in the sample.

JEL classification: M41, G14, G15, K22

Key words: SOX302; Internal control deficiencies; cross-listing; firm information environment; analyst forecast properties

I. INTRODUCTION

Previous literature suggests that by cross-listing in the U.S. firms are bonding themselves to more extensive disclosure requirements, SEC scrutiny and a tighter threat of litigation that jointly foster corporate transparency and the quality of the firm information environment. This paper examines whether cross-listing benefits on the firm information environment vanish if the financial reporting process suffers by internal control deficiencies according to the Section 302 of the Sarbanes-Oxley Act (SOX302, hereafter). By using the properties of analyst forecasts as a

proxy for the firm information environment, we show that cross-listed firms disclosing internal control deficiencies do not have a better information environment and do not differentiate themselves from their home-country peers. Second, we document that cross-listed firms experience an improvement in the information environment if they remediate to previously disclosed internal control deficiencies, relative to their home-country. Finally, we show that these results hold only for firms domiciled in countries with weak legal institutions, while cross-listed firms from countries with strong legal institutions do not experience a significant change in the quality of the information environment once they became cross-listed, irrespective from the disclosure of an internal control deficiency. Our results are robust to adjustments to potential endogeneity of cross-listing decision, to alternative measures of the quality of the firm information environment and to different control group specifications. Overall, our findings support the hypothesis that the quality of the firm information environment increases following cross-listing only if cross-listed firms *effectively* commit themselves to higher levels of corporate transparency, and not merely in name just mimicking the adoption of stricter rules

Previous literature shows an enhancement of information environment following cross-listing in the U.S. (Lang et al., 2003a), suggesting that by cross-listing a firm credibly commits to achieve a higher level of corporate transparency. Cross-listing is associated with an improvement in firm corporate governance because it bonds the firm to a greater transparency, which should reduce the potential diversion of firm cash flow to managers and controlling shareholders (Coffee, 1999). Lombardo and Pagano (2002) argue that cross-listing adds value because the greater transparency increases the willingness of both international and local investors to commit capital and Lang et al. (2003a) show that firms cross-listed in U.S. markets are bonding themselves to an increased level of disclosure and scrutiny.

Since 2002, firms listed in U.S. markets are subjected to SOX, which strengthens the credibility of listings in the U.S. as a bonding mechanism (Piotroski and Srinisavan 2008). According to SOX302 firms have to disclose any discovered deficiencies in internal control systems over financial reporting. Through this disclosure, firms reveal the quality of their financial information, allowing capital markets to directly infer the reliability of financial reporting. The disclosure of internal control deficiencies is a signal that the financial reporting process is scanty, making financial information of lower quality (Kim et al. 2009). Literature suggests that SOX302 is useful for investors to better evaluate cost of capital and earnings quality (Beneish et al., 2006; Ashbaugh-Skaife et al., 2008; Ashbaugh-Skaife et al., 2009; Doyle et al., 2007a).

This paper exploits internal control deficiency disclosures under SOX302 to explore the existence of heterogeneity in the information environment benefits stemming from cross-listing.We employ as benchmark group all firms listed in their home market but not in the U.S. Our sample is composed by 913 cross-listed firm-year observations and by 9,909 not cross-listed firm-year observations firms from 48 countries. Our analysis is articulated into three steps: (i) an examination of the average effect of the disclosure of internal control deficiency according to SOX302 on the information environment of cross-listed firms; (ii) an examination of the change in the information environment of cross-listed firms after a change in the information disclosed according to SOX302; (iii) an examination of the effect of the disclosure of internal control deficiency according to SOX302 on the information environment of cross-listed firms conditional on the legal and enforcement characteristics of their home countries.

Following prior research (Healy et al., 1999; Lang et al., 2003a; Arping and Saunter, forthcoming) we use the properties of analyst forecasts as a proxy for the quality of the firm information environment. We focus on forecast accuracy, forecast dispersion and analyst

following as previous studies suggest that be followed by more analysts with more accurate and less dispersed forecasts indicates a better information environment. We also consider the precision of public and private information available in the market. While previous literature extensively motivate why analyst following, accuracy and dispersion are related to cross listing, it fails to document how cross-listing is related to the precision of the public and private information (Lang et al., 2003a; Leuz, 2003). SOX302 modifies the relation between the precision of the public and the private information available providing information about the adequacy of internal controls over financial reporting that before was not directly observable for outsiders. Therefore, SOX302 might foster the precision of public information and reduce private information acquisition by financial analysts as they rely on public information and not on indirect measure or private information.

Our study contributes to the literature on cross-listing. Extant research outlines that firms that cross-list in the U.S. experience several benefits in terms of cost of capital (Hail and Leuz, 2008, 2009) share price informativeness (Fernandes and Ferreira, 2008), higher valuation (Doidge et al., 2004), and information environment (Lang et al., 2003a). In this paper, we analyse the information environment effects stemming from cross-listing in relation with the ability to properly adopt more stringent laws. We directly test the bonding hypothesis used to explain cross-listing benefits and find evidence that the benefits in terms of firm information environment are not homogeneous across all cross-listed firms. The magnitude of these benefits depends on the adoption of adequate internal controls over financial reporting: firms that only mimic the adoption of stricter rules lose information benefits, being not different from their home-country peers.

Our paper contributes also to the literature on the effects of SOX. Cohen et al. (2008) show an increase of earnings quality after SOX and Iliev (2010) find evidence supporting less aggressive earnings practices. Begley et al. (2009) show a temporary increase of the accuracy of analyst forecast once SOX came into force. Kim et al. (2009) investigate the effect of SOX Section 404 disclosures for U.S. firms. They find that firms disclosing internal control deficiencies have a poor analysts information environment, consistently with the notion that effective control systems enhance the quality of analyst forecast. A concurrent paper by Arping and Saunter (forthcoming) studies the impact of SOX on cross-listed firm's reporting transparency. They adopt a research design similar to that used in this paper and find that, over time, cross-listed firms experience a decrease in the level of opaqueness larger than for not cross-listed firms. This implies that, relative to control firms, cross-listed firms became more transparent. However, they do not exploit the information on internal control deficiencies to examine heterogeneity in the information environment effects stemming from cross-listing. We add to this literature the evidence that the decline in the level of opaqueness depends on financial reporting quality and hence it is not homogenous across all firms.

The remainder of the paper is organized as follows. Section 2 introduces background information on the internal control system disclosure under SOX302, discusses related literature, and develops the hypotheses. Sample, research design and metrics are presented in section IV. Section V contains analysis and discusses results. Section VI concludes the paper.

II. RELATED LITERATURE AND PREDICTIONS

Cross-listing

Extant research shows that cross-listing in the U.S. fosters capital market scrutiny, increases the availability of information of higher quality and, consequently, enhances the firm information environment. Baker et al. (2002) find that around the time of cross-listing firms have more visibility, as measured by analyst and media coverage. Lang et al. (2003a) document an increase in analyst forecast accuracy and in analyst coverage following cross-listing. Lang et al. (2003b) show that earnings quality is higher for cross-listed than for not cross-listed firms. Bayley et al. (2006) explain the greater volatility and trading activity around earnings announcements following cross-listing with a substantial change in the firm information environment. Fernandes and Ferreira (2008) show that share prices of cross-listed firms incorporate firm-specific information in a more accurately and timely manner than not cross-listed peers, while Goto et al. (2009) find that the time-series properties of share returns change when a firm cross-list and experiences a large change in disclosure. Hope et al. (2012) find that voluntary disclosures of cross-listed firms are positively associated with analyst forecast accuracy. This suggests that cross-listing makes voluntary disclosure a viable mechanism for improving the firm information environment. All these findings support the idea that, by cross-listing, foreign firms increase corporate transparency and experience an enhancement in the information environment.

SOX disclosure

Since 29 August 2002, all SEC filers, and foreign firms that trade by way of ADR levels II-III, have to comply with SOX302. SOX302 requires management (i) to evaluate the effectiveness of firm internal controls over financial reporting, (ii) to certify the accuracy of the outcomes of the

financial reporting process, (iii) to disclose any discovered internal control deficiency[1] in the internal controls (SEC, 2002)[2]. Through SOX302 disclosures, financial market can directly infer the reliability of financial reporting on a regular basis (Beneish et al., 2006). Research shows that the presence of internal control deficiencies is associated with lower earnings quality (Doyle et al., 2007b; Ashbaugh-Skaife et al., 2008) and a higher cost of capital (Ashbaugh-Skaife et al., 2009). Kim et al. (2009) find that the quality of internal controls is positively associated with forecast accuracy and analyst following, while Begley et al. (2007) show a temporary increase in the precision of the public information after the adoption of SOX. These findings suggest that SOX302 allows investors to discriminate across firms with respect to the reliability of financial information while, before its adoption, investors could rely only on private information or indirect measures as abnormal accruals (Doyle et al., 2007a). All these findings support the idea that SOX302 disclosures help to directly assess the quality of financial reporting and hence it significant affects a firm information environment.

SOX disclosure and cross-listing

Research on SOX disclosures for cross-listed firms is still germinal. These studies examine whether SOX adoption is beneficial for cross-listed firms with respect to their home country peers and U.S. listed firms. Gong et al. (2011) show that SOX302 disclosures provided by cross-listed firms have less power in predict earnings quality than disclosures provided by U.S. firms. This result implies that SOX302 is less useful for cross-listed than for U.S. firms to separate high quality earnings firms from low quality firms. The same authors (Gong et al., forthcoming) also

[1] Internal control deficiencies are categorized into three groups according to the degree of severity: "material weakness", "significant deficiency", or "deficiency"

[2] SOX Section 404 (SOX404) is related to SOX302 is. It requires that the management should certify the effectiveness of the internal control systems in the annual SEC filings (302), and that the external auditor confirms the management assessment of internal control effectiveness (404). For foreign firms accelerated filers (cross-listed on Level-II and Level-III ADRs) SOX404 became effective for fiscal years ending on or after July 15, 2006.

argue that cross-listed firms are less likely to report an internal control deficiency than U.S. firms. Arping and Sautner (forthcoming) document that cross-listed firms became less opaque than their home country firms once SOX404 came into force. Berger et al. (2011) support the existence of an incremental legal bonding benefit following the adoption of SOX for cross-listed firms.

Cross-listing effects on firm information environment are explained with the bonding theory (Coffee, 1999, 2002; Stultz, 1999): cross-listing in the U.S. provides an effective means for firms domiciled in weak investor protection countries to credibly commit to increase corporate transparency as they voluntary subject themselves to U.S. security law and SEC enforcement. The stronger capital market and enforcement scrutiny trigger an increase in the availability of information of higher quality and enhances firm information environment. According to the bonding theory, these benefits follow as a mechanic legal consequence that a firm experiences just for renting the U.S. legislation. In this vein, studies about SOX effects on cross-listed firms are based on the underlying premise that the consequences of SOX disclosures are homogenously distributed across all cross-listed firms. These studies neglect to consider that cross-listed firms might be characterized by effective or ineffective internal controls. To the extent that SOX302 allows investors to discriminate across firms with respect to the reliability of the financial reporting process, these studies fail to examine whether cross-listed firms experience the same information environment benefits. To the extent that the reliability of financial information strongly affects the firm information environment, it is unlikely that all cross-listed firms get the same pay-off from cross-listing as long as the legal framework is only one factor that shapes firm reporting behaviors (Siegel, 2005; Leuz, 2006; Holthausen, 2009).

Leuz (2006) provides preliminary evidence that cross-listed firms with different ownership concentration differ in term of financial reporting quality. This literature suggest that the outcomes of firms' financial reporting process is shaped by several factors like managers' incentives, auditor quality, regulation, market pressure and legal enforcement. As a result, there is predictable heterogeneity even in the behaviors of cross-listed firms and hence in the information environment benefits stemming for cross-listing.

Research does not explore this issue even if the adoption of SOX302 (and SOX404) that makes this information as common knowledge provides an ideal setting as it allows investors to discriminate cross-listed firms between those that effectively commit themselves to higher level of transparency and those that just mimic the adoption of stricter rules.

H1: Cross-listed firms lose the information environment benefits stemming from cross-listing when they disclose internal control deficiencies under SOX302

Previous studies on SOX302 investigate whether the successful remediation of internal control deficiencies has positive effects in terms of earnings quality, cost of capital and firm information environment. Beneish et al. (2008) show that capital market does not react to the remediation of a previously disclosed internal control deficiency of U.S. firms, even if earnings quality increases (Ashbaugh-Skaife et al., 2008) and the cost of equity decrease after a successful remediation (Ashbaugh-Skaife et al., 2009). Kim et al. (2009) find that a successful remediation strategy bears to an increase in analyst following and to a decrease in both forecast error and dispersion. They also find that a worsening of internal controls over financial reporting does not have the same effects on the firm information environment. They conclude that the change in the efficacy

of internal controls on the firm information environment is asymmetric, depending on whether the internal controls are strengthened or worsened through time.

Considering these results, we examine whether the remediation of previously disclosed internal control deficiencies allows cross-listed firms to plug the transparency and credibility gap with other cross-listed and to separate themselves from their home country firms by gaining cross-listing benefits:

H2: Cross-listed firms that remediate to a previously disclosed internal control deficiency claw back information environment benefits stemming from cross-listing

Previous literature suggests that cross-listing benefits follow from a change in the regulatory and enforcement environment that each firm is willing to experience to signal its commitment to transparency. Firms from countries with a weak disclosure regulation and a feeble capital market scrutiny have more to get from cross-listing as they experience a larger increase in market scrutiny and legal enforcement than firms from countries where the latter are already high. Several empirical findings corroborate this intuition: Hail and Leuz (2009) finds that cross-listed firms from weak legal enforcement countries experience a larger decline in the cost of equity capital than cross-listed firms from strong legal enforcement countries. In this vein, the analysis of the effects of SOX302 on information environment of cross-listed firms should take into account the characteristics of the country in which the cross-listed firms is domiciled. On the one side, firms from countries with a strong disclosure regulation and capital market scrutiny exhibit negligible cross-listing benefits, but have less to lose whether an internal control deficiency is disclosed. On the other side, cross-listed firms from countries with a weak disclosure regulation

and enforcement get the higher pay-off from cross-listed, as they experience a larger regulatory change. At the same time, they are likely to lose more whether they disclose an internal control deficiency:

H3: The difference in the information environment benefits between cross-listed disclosing and not disclosing internal control deficiencies under SOX302 is greater when the firm is domiciled in a weak legal environment country

III. DATA AND RESEARCH DESIGN

Sample selection

Our analysis focuses on firms cross-listed in the three major U.S. stock exchanges (NYSE, AMEX, or NASDAQ) at some point in time over the period August 2002 – July 2006. As long as cross-listed firms that trade by way of OTC listings (Level-I ADRs) and Rule 144a private placement offerings (Level-IV ADRs) have not to comply with SOX provisions, we focus on Level-II and Level III ADRs.

Our sample selection procedure is as follows. We first identify from the Compustat Global database all cross-listed firms on Level-II and Level-III ADRs, but Canadian-based firms[3], by relying on Compustat incorporation code, FIC, and cross-check with other data sources such as SEC filings and Audit Analytics. This procedure yields 2,292 cross-listed firm-year observations, from 702 unique firms. Next, we merge this sample of cross-listed firms from the Compustat

[3] Following prior research, Canadian firms are excluded because they can directly list their shares on U.S. exchanges without using depository receipts. Moreover, Canadian firms are exempted from certain U.S. reporting requirements under the Multi-Jurisdictional Disclosure System (Hail and Leuz, 2009). However, inference is unchanged if we keep Canadian cross-listed firms in the sample.

Global database with the I/B/E/S International database (split unadjusted)[4] necessary to calculate the properties of the firm information environment. We these restrictions we have a sample of 913 cross-listed firms-year observations that represent 379 unique firms, from 48 countries, subjected to SOX302 between August 2002 and July 2006. We obtain data on SOX302 disclosures from the Audit Analytics' Disclosure Controls database. It encompasses all SEC registrants who have to disclose since August 2002 management certification of internal controls in periodic SEC filings.

Our control sample includes all the listed firms from the 48 countries with at least a cross-listed firms in our final cross-listed sample, covered by I/B/E/S from August 2002 to July 2006, which are not cross-listed in the U.S. under the four different cross-listing alternative (Level-II and Level-III ADRs, or by way of OTC listings and Rule 144a private placement offerings). After the merge with Compustat Global to compute the variables used in the regression analysis, we come up with a control sample of 9,909 firm-year observations of non-cross-listed firms. Overall, our main analyses are carried out using a sample of 10,822 firm-year observations. Table 1 presents the sample selection procedure.

[INSERT TABLE 1 ABOUT HERE]

Research design and empirical models

We first examine the association between the quality of internal controls over financial reporting and the firm information environment. Since the knowledge about the quality of internal controls over financial reporting of period *t* precedes the earnings forecast in year *t+1*, we regress the

[4] We use split unadjusted data from the I/B/E/S international database for both cross-listed and non-cross-listed firms to avoid rounding problem with the earnings per share data (Payne and Thomas, 2003). All firm-level data are converted in U.S. dollars for ease of analysis.

proxies for the quality of the firm information environment in year *t+1* on the information disclosed under SOX302 in year *t.*

We code up two binary variables that identify cross-listed firms according to the information disclosed under SOX302. GOOD is the binary variable equal to one if a cross-listed firm does not disclose internal control deficiencies in year *t*, zero otherwise. BAD is the binary variable equal to one if a cross-listed firm discloses internal control deficiencies in year *t*, zero otherwise. Hence, to test our first hypothesis, we estimate the following regression model:

$$FIE_{it+1} = \alpha_0 + \alpha_1 GOOD_{it} + \alpha_2 BAD_{it} + \sum_k \alpha_k CTRL_{it}^k + \varepsilon_{it} \quad [1]$$

where

FIE_{it+1}	Firm Information Environment Proxy for company *i in period t+1*
$GOOD_{it}$	Dummy variable = 1 if company *i* does not disclose internal control deficiencies in period *t*
BAD_{it}	Dummy variable = 1 if company *i* discloses internal control deficiencies in period *t*
$CTRL_{it}^k$	*k* control variable for company *i* in period *t*

GOOD and BAD are our variables of interest. The intercept (α_0) is the conditional mean of a given firm information environment proxy for the control sample of not cross-listed firms .

By estimating the intercept and the two coefficients on GOOD and BAD we compare three groups of firms: cross-listed firms not disclosing internal control deficiencies (α_1) to not cross-listed firms (α_0), cross-listed firms disclosing internal control deficiencies to not cross-listed firms (α_2), and "GOOD" cross-listed firms (α_1) to "BAD" cross-listed firms (α_2).

We expect that (i) cross-listed firms not disclosing internal control deficiencies (GOOD) are associated with a higher quality in the firm information environment than not cross-listed firms ($\alpha_1 > 0$); (ii) cross-listed firms not disclosing internal control deficiencies are associated with a

higher quality in the analyst information environment than cross-listed firms disclosing internal control deficiencies ($\alpha_1 > \alpha_2$); and (iii) cross-listed firms disclosing internal control deficiencies (BAD) have a quality in the analyst information environment worse or not different from not cross-listed firms, i.e. they lose the benefits stemming from cross-listing ($\alpha_2=0$ or $\alpha_2<0$).

Our second research question studies the association between the change in the quality of the internal controls over financial reporting and the firm information environment. We consider the change in the firm information environment after a remediation of an internal control deficiency rather than a cross-sectional association test. In this way, we can overcome issues stemming from correlated omitted variables, and better disentangle the marginal effect of a remediation of a previously disclosed internal control deficiency on financial information environment properties from firm-level time invariant factors (Wooldridge 2003). We use one dummy variable marking cross-listed firms that remediate to a previously disclosed internal control deficiency. UP is a binary variable equals to one if a firm has disclosed an internal control deficiency in period *t-1* and no internal control deficiencies in period *t*[5]. To test our second set of hypotheses, we estimate the following model:

$$\Delta FIE_{it+1;t} = \alpha_0 + \alpha_1 UP_{it} + \sum_k \alpha_k \Delta CTRL_{it}^k + \varepsilon_{it} \qquad [2]$$

where

$\Delta FIE_{it+1;t}$	The change in the Firm Information Environment Proxy for company *i* between the period *t* and *t+1*
UP_{it}	Dummy variable = 1 if company *i* has disclosed internal control deficiencies in period *t-1* ($BAD_{it-1} = 1$) and no internal control deficiencies in period *t* ($GOOD_{it} = 1$)
$\Delta CTRL_{it}^k$	*k* control variable for company *i* in period *t*

[5] It could have been of interest to study the association between a decrease of the quality of internal controls over financial reporting and the firm information environment by defining a variable DOWN as a dummy equals to 1 if company *i* has disclosed no internal control deficiencies in period *t-1* ($GOOD_{it-1} = 1$) and internal control deficiencies in period *t* ($BAD_{it} = 1$). We were not able to perform this analysis because only 8 firm-year observations have DOWN = 1.

In model [2], we also control for firm-specific time varying factors that might affect the change in firm information environment as well as the likelihood to remediate to a previously disclosed internal control deficiency. For instance, a large change in reported earnings from one period to the other might affect analyst uncertainty and the likelihood to disclose an internal control deficiency (Duru and Reeb 2002; Ashbaugh-Skaife et al., 2007). Following prior literature (Kim et al., 2009; Wooldridge, 2003) we thus include in model [2] each control variable used in model [1] in the first-order difference form, that is the we difference each control variable between period *t* and *t-1*. We test our hypothesis two with two control samples: cross-listed firms that never disclose internal control deficiencies and all non-cross-listed firms. The intercept (α_0) captures the change from year *t* and year *t+1* in the properties of the firm information environment for the control sample. The coefficient on UP (α_1) captures the difference in the change in the properties of the firm information environment between cross-listed firms that remediate to an internal control deficiency and control firms. If the remediation of the internal control deficiencies identified in the previous period allows cross-listed firms to plug the transparency and credibility gap then α_1 is expected to be positive and significant.

Our third research question investigates whether the legal and enforcement characteristics of the countries where cross-listed firms are domiciled are associated with cross-sectional differences in the effects of SOX302 disclosures across cross-listed firms. To measure the extent to which countries differ in terms of legal and enforcement characteristics, we use the following variables taken from Kaufman et al. (2007) for the year 2005: (1) Government Effectiveness; (2) Regulatory Quality; (3) Rule of Law; (4) Control of Corruption. Higher values of each of these variables implies higher levels of legal enforcement. To partition the sample, we first take the sum of these legal environment variables, then we split the sample according to the sample

median. Next, we code up a binary variable (LAW) equals to one if an observation comes from a country that is above the sample median, zero otherwise. As a consequence, firms for which LAW is equal to zero are categorized as firms incorporated in lax legal environment countries. To test our third set of hypotheses, we estimate the following model:

$$FIE_{it+1} = \alpha_0 + \alpha_1 GOOD_{it} + \alpha_2 BAD_{it} + \alpha_3 LAW_i + \alpha_4 GOOD_{it} * LAW_i + \alpha_5 BAD_{it} * LAW_i + \sum_k \alpha_k CTRL_{it}^k + \varepsilon_{it} \quad [3]$$

where:

FIE_{it+1}	Firm Information Environment Proxy for company *i in period t+1*
$GOOD_{it}$	Dummy variable = 1 if company *i* does not disclose internal control deficiencies in period *t*
BAD_{it}	Dummy variable = 1 if company *i* discloses internal control deficiencies in period *t*
LAW_i	Dummy variable = 1 if company *i* is domiciled in a country with strong legal and enforcement rules according to Kaufmann (2007)
$CTRL_{it}^k$	*k* control variable for company *i* in period *t*

According to the bonding hypothesis, cross-listing effects should be stronger for cross-listed firms domiciled in country with weak legal enforcement. As a consequence, we expect that the difference in the firm information environment benefits between firms disclosing and not disclosing internal control deficiencies to be stronger for firms from weak legal environment countries. The coefficient of the interaction between GOOD and LAW (BAD and LAW) captures if the relationship between the successful (mimicking) adoption of stricter rules in terms of internal controls over financial reporting on the firm information environment is associated with the strength of the enforcement. In both the cases (successful adoption and mimicking adoption) we expect the coefficient to be negative (α_4 and α_5 respectively) whether the effects are weaker in countries with strong legal enforcement. In addition, α_1 is expected to be significantly larger than α_2, while $\alpha_1 + \alpha_4$ is expected to be not different from $\alpha_2 + \alpha_5$.

Firm information environment

Following previous literature (Lang and Lundholm, 1996; Hutton and Palepu, 1999; Gebhardt et al., 2001), we operationalize the firm information environment using the properties of analyst earnings forecasts. We first focus on forecast accuracy, dispersion and analyst following as previous studies suggest that be followed by more analysts with more accurate and less dispersed forecasts indicates a better information environment (Lang and Lundholm, 1996; Hutton and Palepu, 1999; Gebhardt et al., 2001).

We calculate forecast accuracy (*ACC*) as the negative of the absolute value of the analyst forecast accuracy, deflated by the stock price at the beginning of the fiscal year: ACC_{it} = |*Actual Earnings*$_{it}$ – *Median Forecast*$_{it}$| / *Stock Price*$_{it,}$, where *Actual Earnings*$_{it}$ is the Actual I/B/E/S annual EPS for firm *i* in year *t, Median Forecast*$_{it}$ is the median of forecasts made by analysts in our sample from the 11th month of the fiscal year to 3 days before the annual earnings announcement for firm *i* and year *t*, and *Stock Price*$_{it}$ is the stock price of firm *i* at the end of year *t*.[6] We remove the effect of stale forecasts by employing the last forecast made by each analyst if they issue more than one forecast. Using the same forecast window we calculate forecast dispersion (DISP) as the *Standard Deviation of Forecasts/Stock Price.* Analyst following (FOLL) is the number of analysts who issue at least one annual forecast for a given firm-year. Following prior research (Byard et al., 2011), we use a use a logarithm transformation to reduce the skewness.

These measures on the characteristics of the firm information environment might depend on changes in common and idiosyncratic information. For this reason, we also employ the measures proposed by Barron et al. (1998) (BKLS, hereafter): the precision of analyst public information

[6] The results are similar when we use the mean forecast rather than the median forecast.

(*H*), the precision of analyst private information (*S*), the precision of the analyst total information (TOT_INFO), and analyst consensus (*CONS*)[7].

We consider BKLS because analysts have two sources of information: an information signal common to all analysts and a signal observed separately by each analyst. These measures allow us to disentangle to what extent differences in the quality of firms information environment are driven by differences in the commonality of information among analysts or in the private information acquisition by single analysts. Our setting is particularly adequate for the BKLS measures because the characteristics of the internal controls over financial reporting are inherently unobservable from outside bringing to idiosyncratic information. The adoption of the SOX302 makes available to all market participants the information upon the adequacy of internal controls over financial reporting, leveling the information field. As a result, a change in the firm information environment can be achieved through an increase of the precision of common information that might be accompanied by a decrease in the precision of private information.

Control variables

All models include year-country-industry fixed effects using the industry classification as in Campbell (1996) and heteroskedasticity-corrected standard errors, which are adjusted at firm-level clustering (Gow et al. 2010). In addition, the models include a set of control variables that prior research finds to be associated with the properties of analyst information environment. The size of a firm is related to the level of pre-disclosure information, thereby we control for firm size (SIZE), using the natural logarithm of the total assets at the beginning of the year. Hwang et al. (2002) finds that analyst forecast for firms reporting losses are less accurate than for firms

[7] For sake of brevity we do not present here the formula used for the calculation of the Barron's measure. We exactly follow what Barron et al. have proposed (Barron et al., 1998). For more information, refer to their paper.

reporting a profit. We control for loss reporting firms through a dummy variable that is equal to one if actual earnings per share are less than zero, and zero otherwise (LOSS). Earnings skewness and the magnitude of the annual change in earnings are likely to affect the properties of analyst earnings forecast (Lang and Lundholm 1996, Gu and Wu 2001, Duru and Reeb 2002). Skewed earnings are associated with more optimistic forecasts, while larger changes in earnings from one year to the other make more difficult for analyst to predict expected earnings. We control for earnings skewness (SKEW) using the statistical definition of skewness over the past five years, while we measure the change in earnings (ΔEAR) using as the absolute value of the difference between the current year earnings per share and the last year's earnings per share, scaled by the closing price as the end of the current year. We include the standard deviation of the return on assets over the past five years (σROA) to control for the possible effects of earnings volatility on firm information environment (O'Brien and Bhushan, 1990; Lang and Lundholm, 1996; Frankel et al., 2006). In all but the analyst forecast dispersion regression, we include forecast dispersion as a control, to the extent that previous empirical evidence (Lang and Lundholm 1996, Bamber et al. 1997, Gu and Wu 2001) documents that the amount of dispersion among analyst reflects uncertainty and lack of consensus about the impact of future events on firms expected performances. We hence control for forecast dispersion as the standard deviation of analyst earnings forecasts, scaled by stock price as the beginning of the year (DISP). Finally, we consider firm performance, using return on asset (ROA), measured as the ratio between net income and total assets as the beginning of the year, and financial leverage (LEV) as the ratio between total debts and total assets as the beginning of the year.

IV. RESULTS

Descriptive statistics and univariate analysis

Table 2 provides the sample distribution by country. The overall sample consists of 10,822 firm-year observations between August 2002 and July 2006. Column two shows that the number of observations varies widely across the sample countries: from a maximum of 2,614 non cross-listed firms domiciled in Japan (26% of the total sample) to a minimum of 2 domiciled in Ghana and from a maximum of 152 cross-listed firms domiciled in the UK to a minimum of 1 domiciled in Hungary and Turkey.

[INSERT TABLE 2 ABOUT HERE]

Table 3 Panel A presents the descriptive statistics relating to the variables used in the full sample. The mean (median) of ACC is -0.0174 (-0.0045), which indicates the mean (median) difference between analyst consensus forecast and actual earnings is about -1.74 percent (-0.45 percent) of the lagged share price. The mean (median) of DISP is 0.0152 (0.0042) of lagged share price indicating that the mean (median) dispersion is about 1.52 percent (0.42 percent) of lagged share price. The mean (median) of the logarithm of analyst following is 3.2064 (3.2181). The mean (median) of public (H) and private information (S) is 0.8593 (0.3633) and 0.8026 (0.2426), respectively. Finally, the mean (median) of TOT_INFO is 1.6620 (1.0977), and the mean (median) of analyst consensus is 0.4707 (0.4680). The sample distribution of the control variables used in the analyses is comparable to that reported in prior research.

Table 3 Panel B shows that out of 913 cross-listed firm-years, 52 firms disclose at least one internal control deficiency according to SOX302 in term of “material weakness”, “significant

deficiency", or "deficiency" in internal control systems during the period August 2002 – July 2006. On the other side, 861 cross-listed firm-year observations do not disclose any internal control deficiency during the same time period[8].

[INSERT TABLE 3 ABOUT HERE]

Table 4 reports the Pearson bivarate correlations among the variables used in the empirical analyses. Cross-listing (XLIST) is positively and significantly associated with ACC (p-value<0.05), FOLL (p-value<0.001) and CONS (p-value<0.05). These associations are still strongly significant only for cross-listing firms not reporting internal control deficiencies (GOOD) while are not significant for cross-listing firms that report internal control deficiencies (BAD). The associations among the dependent variables are in the expected direction. Forecast accuracy is negatively and significantly associated with forecast dispersion, and positively with H, and CONS. At the same time, correlations among control variables are in the expected direction.

[INSERT TABLE 4 ABOUT HERE]

In table 5 we present descriptive statistics of the analyst information environment variables. We split the sample in four groups: (i) not cross-listed firms (column 1); (ii) cross-listed firms (column 2); and within the latter group between (iii) cross-listed firms not disclosing internal

[8] The disclosures of internal control deficiencies by cross-listed firms are about ineffective control environment, inadequate qualified staff, who are familiar with U.S. GAAP, complexity of transactions such as derivatives, taxes and stock option compensation, etc. Due to the small sample size, we do not separately analyze each category of internal control deficiencies in our empirical analyses.

control deficiencies (column 3), and (iv) cross-listed firms disclosing internal control deficiencies (column 4).

Through this preliminary (descriptive) analysis we find that analyst forecast accuracy is significantly higher for cross-listed firms than for not cross-listed firms [(2) – (1): p-value = 0.020], consistently with the literature on cross-listing. When we split the sub-sample of cross-listed firms according to the content of the SOX302 (disclosure or non disclosure of internal control deficiencies), we find that cross-listing benefits are experienced only by those who do not disclose internal control deficiencies [(3) – (1): p-value = 0.019], while cross-listed disclosing internal control deficiencies are not different from the not cross-listed firms [(4) – (1): p-value = 0.540]. We do not find a similar pattern for forecast dispersion since there is not a statistically significant difference in each of the pairs considered for the comparison. For analyst following we find that the results are driven both by the cross-listing status since cross-listed firms experience as expected more analyst following than not cross-listed firms [(2) – (1): p-value = 0.011] and by the adequacy of internal controls since cross-listed firms without internal control deficiencies have more analyst following than cross-listed firms showing internal control deficiencies [(3) – (4): p-value = 0.043].

[INSERT TABLE 5 ABOUT HERE]

Multivariate analysis

We start our empirical analysis by examining the association between the quality of the internal controls over financial reporting and cross-listed firm information environment Table 6 presents the regression results from the estimation of model [1] using ACC, DISP and FOLL as

dependent variable. Columns 1-3 confirm the beneficial effects of cross-listing (XLIST) on the firm information environment. Consistent with literature, we find that cross-listing firms experience, on average, a higher forecast accuracy (XLIST = 0.039, p<0.001), less forecast dispersion (XLIST = -0.0141, p<0.001) and more analyst following (XLIST = 0.2554, p < 0.001) than non cross-listed firms.

Columns 4-6 report our main findings. In hypothesis 1, we claim the within the population of cross-listed firms there is not a pooling equilibrium in which all cross-listed firms experience the same cross-listing benefits. We contend that there is a substantial heterogeneity in term of the firm information environment benefits and that this cross-sectional variation is associated with SOX302 disclosures on the adequacy of the internal controls over financial reporting (SOX302). We find that the positive and significant association between cross-listing status and forecast accuracy is still significant only for cross-listing firms not disclosing internal control deficiencies (GOOD: 0.0037, p < 0.001). But, when we consider cross-listed firms disclosing internal control deficiencies, we find that these firms suffers by a worse forecast accuracy than home country firms (BAD: -0.0029, p < 0.1). These firms not only lose the positive effects of cross-listing on the firm information environment but show a worse information environment than their non cross-listed peers. We find similar results for dispersion and analyst following. The decrease of dispersion, that represents a better firm information environment, holds only for cross-listed firms that effectively adopt stricter internal controls. Firms that have ineffective internal controls show more dispersed earnings forecasts than non cross-listed firms (GOOD: -0.0126, p < 0.001; BAD: 0.0065, p < 0.1). Finally, we find that the positive and significant association between cross-listing status and analyst following is still significant only for cross-listing firms not disclosing internal control deficiencies (GOOD: 0.2696, p < 0.001) while we do not find any

statistically significant differences between cross-listed firms disclosing internal control deficiencies and non cross-listed firms (BAD: -0.0029, p = 0.509). These results support the idea that cross-listing is associated with an increase in the quality of the firm information environment only for firms that have effectively adopted more strict internal controls over financial reporting.

[INSERT TABLE 6 ABOUT HERE]

Next, we examine to what extent differences in the quality of the firm information environment are driven by differences in the commonality of information among analysts or in the private information acquisition by single analysts. Regressions 1 - 4 of table 7 show that cross-listing is associated with an increase in the precision of total information (model 3: XLIST = 0.1647, $p < 0.05$), of public information (model 2: XLIST = 0.1594, $p < 0.05$) and with an increase in the consensus (model 4: XLIST = 0.0941, $p < 0.01$) while no association has been fond with the precision of private information (column 1: XLIST = 0.0053, p = 0.343). This evidence shows that the change of the firm information environment is achieved through an increase in the precision of common information. Regressions 5 – 8 of table 7 show that the difference in the firm information environment for firms that do not disclose internal control deficiencies is due to a higher precision of common information (model 6: GOOD = 0.1776, $p < 0.05$). Firms disclosing internal control deficiencies do not experience any difference in relation to their not cross-listed peers. A possible interpretation of this result is that internal controls over financial reporting are inherently unobservable by outsiders. Under SOX302, this information became available to all market participants. This determines the increase in the consensus (the level of communality among analysts), and in both the precision of public and total information. When SOX302 disclosures inform that internal controls are ineffective, financial analysts make equal cross-listed firms with

ineffective internal controls (firms over which we have a bad information) and non cross-listed firms (firms over which we do not have information on internal controls).

[INSERT TABLE 7 ABOUT HERE]

In the second analysis, we examine whether the firm information environment changes after a remediation of previously disclosed internal control deficiencies In model [2] the variable UP captures the difference in the change in the properties of the firm information environment between cross-listed firms that remediate to an internal control deficiency and control firms. We use two alternative control samples: cross-listed firms that never disclose internal control deficiencies (Table 8: models in columns 1 – 3) and all non-cross-listed firms (Table 8: models in columns 4 – 6).

We find that firms that remediate to previously disclosed internal control deficiencies experience an increase in the quality of the firm information environment relative of the control samples. If we consider as a control sample cross-listed firms that never disclose internal control deficiencies (columns 1 – 3) we find a positive association with the change in accuracy (UP = 1.4974, $p < 0.001$), a negative association with the change in dispersion (UP = -0.9173, $p < 0.001$) and no association with the change in analyst following (UP = 0.1698, $p = 0.370$). These results are consistent across the two control groups.

[INSERT TABLE 8 ABOUT HERE]

Our third analysis studies whether the association between the quality of the internal controls over financial reporting and the firm information environment depends on the level of enforcement of the country in which the cross-listed firm is domiciled . According to the bonding hypothesis, cross-listing effects should be stronger for cross-listed firms domiciled in country characterized by weak legal enforcement. We expect that the difference in the benefits on the information environment between firms disclosing and not disclosing internal control deficiencies are stronger for firms domiciled in weak legal environment countries. Table 9, columns 1-3 confirm that cross-listing effects are stronger for firms from weak legal environment countries. Across the models, the dummy variable XLIST is associated with an higher quality of the firm information environment but the interaction between cross-listing and the level of enforcement (XLIST×LAW) is significant but goes in the opposite direction.

The same evidence emerges if we consider the quality of internal controls. Columns 4–6 capture if the relationship between the successful (mimicking) adoption of stricter rules in terms of internal controls over financial reporting on the firm information environment is associated with the strength of the legal environment. In column 4 we find that only cross-listed firms not disclosing internal control deficiencies domiciled in weak legal environment country experience cross-listing benefits in term of forecast accuracy (GOOD: 0.0045, p-value < 0.001); while cross-listed firms from strong legal environment countries do not get information environment benefits (GOOD + GOOD×LAW = 0.0000, $p < 0.945$). In addition, cross-listed firms from lax legal environment countries that disclose internal control deficiencies lose information environment benefits in term of forecast accuracy (BAD: -0.0023; $p > 0.600$; GOOD ≠ BAD, $p < 0.001$). Results on dispersion and analyst following are basically the same. This evidence indicates that the information provided through SOX302 is useful especially for firms that come from

countries where investors are poorly protected. On the other side, for cross-listed firms that come from strong legal environment countries, where the information environment is supposed to be already rich these disclosures seem to be not as relevant as it is for the latter. Un-tabulated results show that the higher quality of the firm information environment is achieved through an increase of the precision of common information and it does not depend on the characteristics of the legal environment.

[INSERT TABLE 9 ABOUT HERE]

Robustness checks

Endogeneity of cross-listing decision

The decision to cross-listed is likely to be endogenous as firms with a given set of characteristics (e.g. high growth opportunities, stronger need for external financing) are more likely to cross-list than other firms that do not share such set of incentives. As results, our inferences might be biased. To address this validity threat, we employ a propensity score matching technique (Peel and Makepeace, 2009). We use as instrumental variables a set of covariates that prior works found to be associated with the probability to be cross-listed (Doidge et al. 2006; Hail and Leuz, 2009). Specifically, we employ financial leverage (total liabilities over total assets), return on assets (net income over total assets), growth opportunities (annual change in sales), size (logarithm of market value of equity). Next, we match each cross-listed firm to a pair firm in the same country, year and industry [using the Campbell (1996) industry classification] with the closer propensity score, using the Mahalanobis distance as optimization procedure.

Table 10 reports the results for the estimation of model [1]. We find results consistent to those in the main analyses across all the metrics.

[INSERT TABLE 10 ABOUT HERE]

Unobservable factors related to internal control deficiency

In the main analysis, we regress the characteristics of the firm information environment in year *t+1* on indicator variables marking the presence of internal control deficiencies disclosed in year *t*. In this way, we test whether cross-listed firms are different among themselves with respect to analyst earnings forecast metrics *after* the release of the disclosures on internal control deficiencies. However, we cannot rule out that the quality of the firm information environment was already different across cross-listed firms *before* that the information on internal control deficiency became common knowledge. If it would be the case, SOX302 disclosure would be pointless as financial analysts were already able to sort cross-listed firms with respect to the adequacy of internal control system by looking at observable firm-level characteristics. To explore this point, we regress for the 2002 (i.e. first SOX302 adoption) the characteristics of the firm information environment in year *t* on indicator variables marking firms that will disclose an internal control deficiency in year *t*. Under the assumption that there is not leakage of information, the information on internal control deficiency is not common knowledge as it will be public only after the release of the annual report. Whether the information disclosed via SOX302 would not be useful in sorting cross-listed firms, because this information was already public, we should expect to find differences between cross-listed firms even before the release of the disclosure on internal control deficiency. Un-tabulated results show no difference between

cross-listed firms with respect to information environment metrics before that information on internal control deficiency became public.

Over-representation of some countries

Japan and United Kingdom account for about the 20 percent and 10 percent, respectively, of the total sample. We verify whether these two countries drive our results by estimating all the models without firms domiciled in these countries. Results are basically unchanged. We perform the same analyses using only European countries: also in this case results remain unchanged.

Measurement issues

The variables ACC and DISP are scaled by the closing price as the end of the year. Another scaling factors widely used in analyst literature is the absolute value of the earnings per share (i.e. EPS). Using EPS as scaling factor do not affect the results. We also consider both longer (i.e. from the earnings announcement date of year t-1 to the earnings announcement date of year t) and shorter (i.e. from the closing date of year t to the earnings announcement of year t+1) forecasting windows. Also in this case results are consistent with those reported. Previous literature provides several proxies of the level of the enforcement in a country. In our main analyses, we consider the average score of the four dimensions Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption (Kaufman et al., 2007) for the year 2005. Rather than considering the sum of the four measures to partition the sample we consider the four variables one by one. Also in these cases, our results are unchanged.

V. CONCLUSIONS

Extant research documents an enhancement in the firm information environment for firms cross-listed in the U.S., and motivates this result with the bonding effect. This paper disputes the underlying premise that cross-listing *per se* enhances the quality of the firm information environment, arguing that it depends on an *effective* commitment to achieve higher levels of corporate transparency of cross-listed firms. As research setting, we use the adoption of the Section 302 of the Sarbanes-Oxley act that requires disclosing any discovered internal control deficiencies on internal controls over financial reporting. Using this research setting, we examine whether firm information environment benefits following cross-listed vanish when cross-listed firms mimic the adoption of effective internal controls

Our result shows that cross-listing is associated with an increase in the quality of the information environment only for firms that have effectively adopted stricter internal controls over financial reporting. We also find that a better information environment for cross-listed firms is achieved through an increase in the higher precision of common information. On the other side, our evidence shows that cross-listed firms disclosing internal control deficiencies do not enjoy a better information environment and do not differentiate themselves, in terms of firm information environment, from their domestic peers. We also find that cross-listed firms that remediate to internal control deficiencies, experience an improvement in the quality of the information environment. We finally show that the association between the properties of the firm information environment and the effective adoption of stricter internal controls depends on the level of enforcement of the country in which the cross-listed firm is domiciled. We find that the difference in the benefits on the information environment between firms disclosing and not disclosing internal control deficiencies are stronger for firms domiciled in weak legal

environment countries. Overall, our findings support the idea that the quality of the firm information environment increases following cross-listing only when cross-listed firms *effectively* commit themselves to higher levels of corporate transparency, and not merely in name just mimicking the adoption of stricter rules.

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APPENDIX A: Variable Definition

Variable	Definition
GOOD	Binary variable equals to one if a cross-listed firm discloses no internal control deficiency in year t, zero otherwise.
BAD	Binary variable equals to one if a cross-listed firm discloses an internal control deficiency in year t, zero otherwise.
UP	Binary variable equals to one if a cross-listed firm discloses an internal control deficiency in year *t-1* and no internal control deficiency in year *t.*
ACC	Analyst forecast accuracy computed as $ACCURACY_{it}$ = |Actual $Earnings_{it}$ – Median $Forecast_{it}$|/Stock $Price_{it,}$,
DISP	Analyst forecast dispersion computed as the Standard Deviation of Forecasts/Stock Price.
FOLL	Analyst following computed as the logarithm of the total number of analysts who issue at least one annual forecast for a given firm-year
H	Average precision of analyst public information
S	Average precision of analyst private information
TOT_INFO	Average precision of analyst total information computed as H+S
CONS	Analyst consensus computed as H/(H+S)
LAW	Binary variable equals to one if a firm is incorporate in a country that is the below the sample median of the summation between the following legal environment variables taken from Kaufmann et al. (2007) for the year 2005: (1) Government Effectiveness; (2) Regulatory Quality; (3) Rule of Law; (4) Control of Corruption, zero otherwise.
XLIST	Binary variable equals to one if a firm is cross-listed, zero otherwise.
LOSS	Binary variable equals to one if a firm actual earnings per share is less than zero, zero otherwise
σROA	Standard deviation of the return on assets over the past five years
ΔEAR	Absolute value of the difference between the current year's earnings per share and the last year's earnings per share
SKEW	Skewness of earnings over the past five years
SIZE	Natural logarithm of the total assets as the beginning of the year
LEV	Ratio between total debts and total assets as the beginning of the year
ROA	Ratio between net income and total assets as the beginning of the year

Table 1
Sample selection criteria

Cross-listed firms	
Cross-listed firms in the U.S. between 2002 and 2006 covered by COMPUSTAT and audit analytics databases	2,292
Minus	
Observations not covered by I/B/E/S database	1,341
Missing observations for analyst information environment metrics	28
Final sample of cross-listed firm-years	**913**
Final sample of unique cross-listed firms	*379*
Not Cross-listed firms	
Non cross-listed firms domiciled in the country where there is at least a cross-listed firm in the final sample country firms between 2002 and 2006 covered by COMPUSTAT GLOBAL	72,786
Minus	
Observations not covered by I/B/E/S database	49,802
Missing observations for analyst information environment metrics	13,075
Not cross-listed firm-years	**9,909**
Unique not cross-listed firms	*4,034*
Total sample	***10,822***

Table 2
Sample distribution by country

Country	Firm-years	Non Cross-listed firms	Cross-listed firms
Australia	498	480	18
Austria	77	74	3
Bahamas	24	19	5
Belgium	141	138	3
Bermuda	200	167	33
Brazil	104	68	36
Cayman Island	103	66	37
Chile	32	19	13
China	183	162	21
Denmark	158	150	8
Finland	246	237	9
France	719	656	63
Germany	508	475	33
Ghana	3	2	1
Greece	148	141	7
Hong Kong	126	105	21
Hungary	17	16	1
India	299	287	12
Indonesia	90	86	4
Ireland	69	45	24
Israel	52	15	37
Italy	297	276	21
Japan	2,701	2,614	87
Korea	403	387	16
Liberia	8	5	3
Luxembourg	22	10	12
Mexico	51	37	14
New Zealand	80	76	4
Norway	224	208	16
Panama	13	8	5
Papua New Guinea	6	4	2
Peru	17	14	3
Philippines	25	22	3
Portugal	73	67	6
Russia	15	10	5
Singapore	233	223	10
South Africa	188	165	23
Spain	215	198	17
Sweden	318	298	20
Switzerland	285	254	31
Taiwan	230	213	17
The Netherlands	313	257	56
Turkey	21	20	1
United Kingdom	1,286	1,135	152
Total	**10,822**	**9,909**	**913**

Table 2 reports the sample distribution. The full sample comprises 10,822 firm-year observations from 44 countries around the world during the period from 2002 to 2006.

Table 3
Descriptive Statistics for Variables Used in Regression Analyses

Panel A: *Descriptive Statistics for dependent and control variables*

Variable	N	Mean	Std.Dev	P5	P25	Median	P75	P95
ACC	10,822	-0.0174	0.0516	-0.0660	-0.0124	-0.0045	-0.0015	-0.0002
DISP	10,822	0.0162	0.0769	0.0002	0.0016	0.0042	0.0111	0.0542
FOLL	10,822	3.2064	0.9558	1.6094	2.4849	3.2181	3.8712	4.7957
H	10,557	0.8593	1.2921	0.0000	0.0261	0.3633	1.1084	3.5737
S	10,557	0.8026	1.8943	0.0228	0.0973	0.2462	0.6796	3.1222
TOT_INFO	10,557	1.6620	2.0428	0.1018	0.6831	1.0977	1.8682	5.0835
CONS	10,557	0.4707	0.4022	0.0000	0.0103	0.4680	0.9016	0.9920
LOSS	10,822	0.0961	0.2947	0.0000	0.0000	0.0000	0.0000	1.0000
σ(ROA)	10,822	0.0454	0.0654	0.0050	0.0128	0.0249	0.0486	0.1514
ΔEAR	10,822	125.75	652.79	0.0191	0.1768	1.1998	12.271	261.12
SKEW	10,822	-0.0385	0.6486	-1.1887	-0.4720	0.0000	0.3841	1.0783
SIZE	10,822	6.6836	1.7135	3.9959	5.4705	6.6211	7.8092	9.6115
LEV	10,822	1.6779	1.8430	0.2096	0.6259	1.1730	2.0052	4.9056
ROA	10,822	0.0373	0.1265	-0.0762	0.0152	0.0405	0.0756	0.1564

Panel B: C*ross-listed firms distribution according to SOX302 disclosure*

GOOD	861
BAD	52
UP	29
DOWN	14

Table 3 reports descriptive statistics for the dependent variables and the continuous and binary independent variables.
The full sample comprises 10,822 firm-year observations from 44 countries around the world during the period from 2002 to 2006.
See APPENDIX A for variable definitions.

Table 4
Correlation matrix

	XLIST	GOOD	BAD	ACC	DISP	FOLL	S	H	TOT_INFO	CONS	LOSS	σ(ROA)	ΔEAR	SKEW	SIZE	LEV	ROA
XLIST	1.00																
GOOD	0.96***	1.00															
BAD	0.29***	0.18***	1.00														
ACC	0.02**	0.02*	0.00	1.00													
DISP	0.00	0.00	0.00	-0.40***	1.00												
FOLL	0.29***	0.28***	0.06*	0.00	0.00	1.00											
S	0.03***	0.01	-0.00	-0.66***	0.58***	0.04***	1.00										
H	-0.02***	-0.02***	-0.01	0.05***	-0.13***	-0.12***	-0.11***	1.00									
TOT_INFO	-0.02***	-0.02***	-0.01	0.00	-0.08***	-0.11***	-0.03***	0.99***	1.00								
CONS	0.05***	0.06***	0.01*	0.05***	-0.24***	0.01	-0.23***	0.39***	0.38***	1.00							
LOSS	0.01	0.00	0.01	-0.16***	0.29***	-0.07***	0.19***	-0.09***	-0.07***	-0.10***	1.00						
σ(ROA)	0.03***	0.02***	0.01**	-0.06***	0.14***	-0.07***	0.05***	-0.02***	-0.02	-0.03***	0.20***	1.00					
ΔEAR	-0.02***	-0.02***	-0.01*	-0.05***	0.05***	0.08***	0.25***	-0.08***	-0.07***	-0.13***	0.04***	0.01	1.00				
SKEW	0.02***	0.02***	0.01	0.04***	-0.06***	0.05***	-0.04***	0.00	0.00	0.04***	-0.13***	-0.08***	0.00	1.00			
SIZE	0.30***	0.29***	0.07***	-0.00	0.00	0.54***	0.05***	-0.12***	-0.12***	0.03	-0.11***	-0.24***	0.02***	-0.01	1.00		
LEV	0.01	0.01	0.01	-0.11***	0.13***	0.05***	0.13***	-0.08***	-0.08***	-0.06***	0.09***	-0.04***	0.03***	-0.05***	0.29***	1.00	
ROA	-0.02**	-0.01	-0.01**	0.09***	-0.21*****	0.10***	-0.12***	0.11***	0.11***	0.07***	-0.40***	-0.24***	-0.02*	0.12***	-0.03***	-0.16***	1.00

Table 4 reports Pearson correlations.
See APPENDIX A for variable definitions.
***, ** and * denote significance at 1%, 5% and 10% levels (two-sided), respectively.

Table 5

Univariate Tests of differences in analyst information environment metrics between the groups of firms

Variable	Non XLIST (1) Mean (median) [STD]	XLIST (2) Mean (median) [STD]	GOOD (3) Mean (median) [STD]	BAD (4) Mean (median) [STD]	*p*-value of testing (2)-(1) *t*-test Ranksum	*p*-value of testing (3)-(1) *t*-test Ranksum	*p*-value of testing (4)-(1) *t*-test Ranksum	*p*-value of testing (3)-(4) *t*-test Ranksum
ACC	-0.018	-0.016	-0.016	-0.018	0.020	0.019	0.540	0.019
	(-0.005)	(-0.003)	(-0.003)	(-0.004)	0.046	0.046	0.210	0.046
	[0.052]	*[0.045]*	*[0.046]*	*[0.034]*				
DISP	0.016	0.011	0.011	0.011	0.285	0.289	0.256	0.241
	(0.004)	(0.004)	(0.004)	(0.004)	0.184	0.151	0.158	0.194
	[0.080]	*[0.018]*	*[0.019]*	*[0.015]*				
FOLL	3.112	4.152	4.166	3.881	0.011	0.008	0.092	0.043
	(3.135)	(4.204)	(4.219)	(3.891)	0.009	0.001	0.089	0.051
	[0.914]	*[0.889]*	*[0.885]*	*[0.931]*				
H	0.8528	0.927	0.934	0.813	0.095	0.053	0.480	0.301
	(0.362)	(0.365)	(0.371)	(0.351)	0.000	0.003	0.889	0.410
	[1.251]	*[1.667]*	*[1.669]*	*[1.386]*				
S	0.796	0.867	0.893	0.536	0.278	0.095	0.235	0.099
	(0.241)	(0.329)	(0.338)	(0.322)	0.000	0.000	0.977	0.474
	[1.893]	*[1.897]*	*[1.948]*	*[0.818]*				
TOT_INFO	1.649	1.795	1.827	1.350	0.039	0.005	0.251	0.084
	(1.093)	(1.146)	(1.162)	(1.009)	0.008	0.000	0.379	0.117
	[2.014]	*[2.316]*	*[2.371]*	*[1.422]*				
CONS	0.473	0.466	0.466	0.459	0.731	0.821	0.837	0.507
	(0.742)	(0.432)	(0.433)	(0.437)	0.003	0.002	0.954	0.455
	[0.404]	*[0.377]*	*[0.377]*	*[0.369]*				

Table 5 reports univariate tests of differences in analyst information environment metrics among cross-listed firms disclosing internal control deficiencies, cross-listed firms non disclosing internal control deficiencies and not cross-listed firms.
See APPENDIX A for variable definitions.

Table 6
Base regression

	(1) ACC	(2) DISP	(3) FOLL	(4) ACC	(5) DISP	(6) FOLL
XLIST	0.0039***	-0.0141***	0.2554***	-	-	-
	(2.971)	*(-3.548)*	*(5.512)*			
GOOD	-	-	-	0.0037***	-0.0126***	0.2676***
				(2.751)	*(-3.295)*	*(6.153)*
BAD	-	-	-	-0.0029*	0.0065*	-0.0771
				(-1.787)	*(1.922)*	*(-0.665)*
LOSS	-0.0206***	0.0446***	-0.0533	-0.0206***	0.0405***	-0.0533
	(-4.152)	*(5.527)*	*(-1.413)*	*(-4.154)*	*(4.903)*	*(-1.417)*
SD(ROA)	-0.0058	0.1281***	0.4972***	-0.0057	0.1154***	0.5001***
	(-0.738)	*(3.355)*	*(2.722)*	*(-0.729)*	*(3.253)*	*(2.746)*
DISP	-0.7191***	-	-0.9356***	-0.7192***	-	-0.9417***
	(-17.037)		*(-5.181)*	*(-17.042)*		*(-5.232)*
ΔEAR	-0.0000	0.0000***	0.0001*	-0.0000	0.0000	0.0000*
	(-0.999)	*(6.597)*	*(1.862)*	*(-1.005)*	*(1.536)*	*(1.847)*
EAR_SKEW	0.0008	-0.0009	0.0517***	0.0008	-0.0007	0.0520***
	(1.380)	*(-0.779)*	*(2.810)*	*(1.398)*	*(-0.602)*	*(2.834)*
SIZE	-0.0002	0.0035***	0.3745***	-0.0001	0.0031***	0.3750***
	(-0.449)	*(3.307)*	*(33.128)*	*(-0.355)*	*(2.954)*	*(33.513)*
LEV	-0.0001**	-0.0000	-0.0006	-0.0001**	-0.0000	-0.0006
	(-2.360)	*(-0.121)*	*(-1.155)*	*(-2.350)*	*(-0.102)*	*(-1.146)*
ROA	0.0042	-0.0213	0.6711**	0.0041	-0.0722***	0.6670**
	(0.768)	*(-1.477)*	*(2.517)*	*(0.754)*	*(-3.058)*	*(2.506)*
COSTANT	-0.0071	-0.0113	0.1719	-0.0077	-0.0088	0.1414
	(-0.963)	*(-1.556)*	*(0.655)*	*(-1.029)*	*(-1.222)*	*(0.539)*
Test on coefficient GOOD = BAD	-	-	-	2.07	-2.93	4.63
Year fe	Yes	Yes	Yes	Yes	Yes	Yes
Industry fe	Yes	Yes	Yes	Yes	Yes	Yes
Country fe	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,822	10, 822	10,822	10,822	10,822	10,822
R-squared	0.517	0.077	0.564	0.517	0.077	0.564

Table 6 reports estimated coefficients and reported t-statics based on robust standard errors that are clustered at firm level (in parentheses) from the estimation of model [1].
See APPENDIX A for variable definitions.
***, ** and * denote significance at 1% , 5% and 10% levels (two-tailed), respectively

Table 7
Base regression on BKLS measures

	(1) S	(2) H	(3) TOT_INFO	(4) CONS	(5) S	(6) H	(7) TOT_INFO	(8) CONS
XLIST	0.0053	0.1594**	0.1647**	0.0941***	-	-	-	-
	(0.949)	*(2.089)*	*(2.153)*	*(5.163)*				
GOOD	-	-	-	-	0.0065	0.1776**	0.1841**	0.0973***
					(1.127)	*(2.236)*	*(2.309)*	*(5.636)*
BAD	-	-	-	-	-0.0088	-0.1581	-0.1669	0.0253
					(-1.501)	*(-1.131)*	*(-1.195)*	*(0.683)*
LOSS	0.0154**	-0.2254***	-0.2100***	-0.0332	0.0154**	-0.2260***	-0.2106***	-0.0335
	(2.021)	*(-6.623)*	*(-6.045)*	*(-1.015)*	*(2.016)*	*(-6.643)*	*(-6.066)*	*(-1.026)*
SD(ROA)	-0.0344*	-0.0447	-0.0791	0.0036	-0.0344*	-0.0431	-0.0775	0.0043
	(-1.815)	*(-0.330)*	*(-0.580)*	*(0.107)*	*(-1.815)*	*(-0.321)*	*(-0.572)*	*(0.126)*
DISP	1.9736***	-3.1008***	-1.1273***	-1.9734***	1.9733***	-3.1078***	-1.1345***	-1.9752***
	(11.633)	*(-10.217)*	*(-3.074)*	*(-15.679)*	*(11.633)*	*(-10.247)*	*(-3.097)*	*(-15.681)*
ΔEAR	0.0000***	-0.0000	0.0000*	-0.0000***	0.0000***	-0.0000	0.0000*	-0.0000***
	(5.127)	*(-1.341)*	*(1.855)*	*(-5.147)*	*(5.127)*	*(-1.340)*	*(1.838)*	*(-5.149)*
SKEW	-0.0010	-0.0268	-0.0278	0.0071	-0.0010	-0.0264	-0.0274	0.0072
	(-0.605)	*(-1.438)*	*(-1.488)*	*(1.345)*	*(-0.593)*	*(-1.417)*	*(-1.466)*	*(1.353)*
SIZE	0.0020**	-0.0556***	-0.0535***	0.0044	0.0020**	-0.0553***	-0.0533***	0.0044
	(1.979)	*(-5.611)*	*(-5.382)*	*(0.715)*	*(1.989)*	*(-5.602)*	*(-5.375)*	*(0.702)*
LEV	-0.0000	-0.0003	-0.0003	-0.0001	-0.0000	-0.0003	-0.0003	-0.0001
	(-0.258)	*(-1.057)*	*(-1.254)*	*(-0.574)*	*(-0.254)*	*(-1.023)*	*(-1.213)*	*(-0.553)*
ROA	0.0591***	0.2960*	0.3550**	0.0286	0.0586***	0.2842*	0.3428**	0.0257
	(2.773)	*(1.779)*	*(2.114)*	*(0.535)*	*(2.742)*	*(1.707)*	*(2.039)*	*(0.480)*
COSTANT	-0.0245**	2.4169***	2.3924***	0.8822***	-0.0262**	2.3820***	2.3558***	0.8770***
	(-2.055)	*(11.759)*	*(11.600)*	*(10.108)*	*(-2.191)*	*(11.441)*	*(11.278)*	*(10.285)*
Test on coeff.								
GOOD=BAD	-	-	-	-	-0.45	2.23	1.99	3.06
Year fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,557	10,557	10,557	10,557	10,557	10,557	10,557	10,557
R-squared	0.561	0.161	0.137	0.095	0.561	0.161	0.137	0.095

Table 7 reports estimated coefficients and reported t-statics based on robust standard errors that are clustered at firm level (in parentheses) from the estimation of model [1] on the Barron et al.'s metrics.
See APPENDIX A for variable definitions.
***, ** and * denote significance at 1% , 5% and 10% levels (two-tailed), respectively

Table 8
Conditional analysis

	(1) ΔACC	(2) ΔDISP	(3) ΔFOLL	(4) ΔACC	(5) ΔDISP	(6) ΔFOLL
UP	1.1016***	-0.8195***	0.1996	1.4974***	-0.9173***	0.1698
	(7.153)	*(-4.250)*	*(1.446)*	*(2.525)*	*(-3.904)*	*(0.897)*
ΔEAR	0.0000	0.0000	-0.0000	0.0000***	-0.0000*	-0.0000
	(0.386)	*(0.043)*	*(-0.115)*	*(3.746)*	*(-1.870)*	*(-0.367)*
ΔDISP	-14.0932***	-	1.5953	-1.5700***	-	0.3964**
	(-2.628)		*(1.469)*	*(-2.588)*		*(2.198)*
ΔSD_ROA	0.3403	0.3070	-1.3503*	0.0061	-0.3995***	-0.2104
	(0.385)	*(0.533)*	*(-1.706)*	*(0.101)*	*(-3.382)*	*(-1.355)*
ΔSIZE	0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000**
	(1.136)	*(-0.925)*	*(-0.847)*	*(-0.470)*	*(-1.346)*	*(-2.514)*
ΔROA	-0.5358*	-0.0652	0.2156	0.1246**	-0.2206***	-0.0565
	(-1.690)	*(-0.323)*	*(0.758)*	*(2.113)*	*(-4.274)*	*(-0.719)*
ΔLEV	-0.0391***	0.0493***	0.0004	-0.0134***	0.0021	-0.0029
	(-2.726)	*(2.361)*	*(0.033)*	*(-2.982)*	*(1.023)*	*(-0.491)*
COSTANT	-0.0139	0.0087	0.0087	0.0117	-0.0079	0.0982
	(-0.700)	*(0.672)*	*(0.490)*	*(0.205)*	*(-0.153)*	*(0.663)*
Observations	511	511	511	6,108	6,108	6,108
R-squared	0.334	0.173	0.016	0.536	0.131	0.074

Table 8 reports estimated coefficients and reported t-statics based on robust standard errors that are clustered at firm level (in parentheses) from the estimation of model [2].
See APPENDIX A for variable definitions.
***, ** and * denote significance at 1% , 5% and 10% levels (two-tailed), respectively

Table 9
Regression by home country legal characteristics

		(1) ACC	(2) DISP	(3) FOLL	(4) ACC	(5) DISP	(6) FOLL
GOOD	β_1	-	-	-	0.0045***	-0.0131***	0.3234***
					(3.024)	*(-4.105)*	*(7.292)*
BAD	β_2	-	-	-	-0.0023	-0.0054	0.0285
					(-0.749)	*(-1.404)*	*(0.299)*
LAW	β_3	0.0034***	-0.0032**	-0.0389	0.0033***	-0.0032**	-0.0232
		(4.423)	*(-2.146)*	*(-0.413)*	*(4.393)*	*(-2.109)*	*(-0.240)*
GOOD*LAW	β_4	-	-	-	-0.0045*	0.0056**	-0.1628*
					(-1.869)	*(1.986)*	*(-1.698)*
BAD*LAW	β_5	-	-	-	-0.0010	-0.0025	-0.1797
					(-0.238)	*(-0.454)*	*(-0.726)*
XLIST		0.0046***	-0.0139***	0.3249***	-	-	-
		(3.215)	*(-4.367)*	*(6.846)*			
XLIST*LAW		-0.0047**	0.0050*	-0.2005*	-	-	-
		(-2.170)	*(1.817)*	*(-1.965)*			
LOSS		-0.0203***	0.0447***	-0.0536	-0.0203***	0.0447***	-0.0536
		(-7.338)	*(5.599)*	*(-1.422)*	*(-7.336)*	*(5.597)*	*(-1.428)*
SD(ROA)		-0.0060	0. 1318***	0.4951***	-0.0059	0.1310***	0.4982***
		(-0.817)	*(3.588)*	*(2.693)*	*(-0.804)*	*(3.573)*	*(2.718)*
DISP		-0.7235***	-	-0.9344***	-0.7236***	-	-0.9400***
		(-18.651)		*(-5.176)*	*(-18.653)*		*(-5.221)*
ΔEAR		-0.0000*	0.0000***	0.0001*	-0.0000*	0.0000***	0.0000*
		(-1.896)	*(7.130)*	*(1.925)*	*(-1.909)*	*(7.143)*	*(1.890)*
SKEW		0.0005	-0.0005	0.0513***	0.0005	-0.0005	0.0516***
		(0.779)	*(-0.484)*	*(2.803)*	*(0.792)*	*(-0.495)*	*(2.810)*
SIZE		0.0001	0.0031***	0.3740***	0.0001	0.0030***	0.3745***
		(0.304)	*(3.116)*	*(34.128)*	*(0.398)*	*(3.071)*	*(34.251)*
LEV		-0.0001***	-0.0000	-0.0006	-0.0001***	-0.0000	-0.0006
		(-2.709)	*(-0.102)*	*(-1.159)*	*(-2.708)*	*(-0.102)*	*(-1.152)*
ROA		0.0023	-0.0184	0.6707**	0.0022	-0.0184	0.6665**
		(0.471)	*(-1.296)*	*(2.507)*	*(0.464)*	*(-1.296)*	*(2.497)*
COSTANT		-0.0118**	0.0064	0.1098	-0.0120**	0.0068	0.0949
		(-1.970)	*(0.934)*	*(0.439)*	*(-2.000)*	*(0.997)*	*(0.377)*
Test on coeff.							
$\beta_1+\beta_4=0$		-	-	-	0.08	-1.69	4.56
$\beta_2+\beta_5=0$		-	-	-	-1.08	-1.84	-0.45
$\beta_1=\beta_2$		-	-	-	3.27	-2.86	4.30
$\beta_1+\beta_4=\beta_2+\beta_5$		-	-	-	0.56	-0.89	1.34
Year fe		Yes	Yes	Yes	Yes	Yes	Yes
Industry fe		Yes	Yes	Yes	Yes	Yes	Yes
Country fe		No	No	No	No	No	No
Observations		10,822	10,822	10,822	10,822	10,822	10,822
R-squared		0.514	0.069	0.564	0.514	0.069	0.564

Table 9 reports estimated coefficients and reported t-statics based on robust standard errors that are clustered at firm level (in parentheses) from the estimation of model [3].
See APPENDIX A for variable definitions.
***, ** and * denote significance at 1% , 5% and 10% levels (two-tailed), respectively

Table 10

Base regression: Propensity Score Matching

Panel A	(1) ACC	(2) ACC	(3) DISP	(4) DISP	(5) FOLL	(6) FOLL
XLIST	0.0046**	-	-0.0447**	-	0.5855***	-
	(1.977)		*(-2.321)*		*(8.689)*	
GOOD	-	0.0040*	-	-0.0417**	-	0.5663***
		(1.778)		*(-2.265)*		*(8.644)*
BAD	-	-0.0015	-	-0.0202	-	-0.0496
		(-0.726)		*(-1.208)*		*(-0.335)*
LOSS	-0.0279***	-0.0277***	0.3725	0.3730	-0.2840***	-0.2753***
	(-2.875)	*(-2.857)*	*(1.461)*	*(1.462)*	*(-3.101)*	*(-2.998)*
SD(ROA)	0.0029	0.0036	-0.2432	-0.2524	-0.9729**	-0.9100**
	(0.211)	*(0.267)*	*(-0.827)*	*(-0.856)*	*(-2.191)*	*(-2.216)*
DISP	-0.7011***	-0.7018***	-	-	-0.2247	-0.2927
	(-7.796)	*(-7.799)*			*(-0.452)*	*(-0.588)*
ΔEAR	-0.0000	-0.0000	0.0000	0.0000	0.0003***	0.0003***
	(-0.019)	*(-0.065)*	*(0.821)*	*(0.826)*	*(5.948)*	*(5.878)*
SKEW	0.0007	0.0007	-0.0190	-0.0189	-0.0124	-0.0126
	(0.362)	*(0.359)*	*(-0.929)*	*(-0.924)*	*(-0.303)*	*(-0.309)*
COSTANT	-0.0018	-0.0018	0.2451	0.2455	3.6877***	3.6861***
	(-0.513)	*(-0.520)*	*(1.063)*	*(1.064)*	*(46.856)*	*(46.875)*
Test on coeff.						
GOOD=BAD	-	1.98	-	-2.06	-	4.23
Observations	1,565	1,565	1,589	1,589	1,565	1,565
R-squared	0.535	0.535	0.022	0.022	0.137	0.133

Panel B: BKLS	(1) S	(2) S	(3) H	(4) H	(5) TOT_INFO	(6) TOT_INFO	(7) CONS	(8) CONS
XLIST	0.0086	-	0.1066	-	0.1146	-	0.1050***	-
	(1.539)		*(1.356)*		*(1.454)*		*(5.305)*	
GOOD	-	0.0093*	-	0.1311*	-	0.1391*	-	0.1086***
		(1.825)		*(1.669)*		*(1.768)*		*(5.601)*
BAD	-	-0.0119*	-	-0.1070	-	-0.1133	-	0.0110
		(-1.794)		*(-0.665)*		*(-0.706)*		*(0.336)*
LOSS	-0.0066	-0.0062	-0.2931***	-0.2918***	-0.2970***	-0.2951***	-0.0306	-0.0306
	(-0.343)	*(-0.324)*	*(-3.093)*	*(-3.082)*	*(-3.042)*	*(-3.028)*	*(-0.989)*	*(-0.988)*
SD(ROA)	-0.0589***	-0.0574***	-0.0759	-0.0641	-0.1242	-0.1110	-0.1694***	-0.1610**
	(-3.830)	*(-3.588)*	*(-0.245)*	*(-0.207)*	*(-0.394)*	*(-0.352)*	*(-2.597)*	*(-2.582)*
DISP	2.2600***	2.2578***	-2.4080***	-2.4268***	-0.1526	-0.1731	-1.7505***	-1.7588***
	(5.263)	*(5.257)*	*(-3.419)*	*(-3.450)*	*(-0.166)*	*(-0.188)*	*(-9.187)*	*(-9.206)*
ΔEAR	0.0000***	0.0000***	-0.0002***	-0.0002***	-0.0000***	-0.0000***	-0.0000***	-0.0000***
	(9.924)	*(9.904)*	*(-11.606)*	*(-11.358)*	*(-3.605)*	*(-3.572)*	*(-5.482)*	*(-5.464)*
SKEW	0.0058	0.0058*	0.0207	0.0210	0.0269	0.0277	-0.0012	-0.0011
	(1.673)	*(1.695)*	*(0.425)*	*(0.430)*	*(0.548)*	*(0.566)*	*(-0.086)*	*(-0.084)*
COSTANT	-0.0063	-0.0063	0.8029***	0.8029***	0.7944***	0.7943***	0.6576***	0.6575***
	(-0.589)	*(-0.592)*	*(6.794)*	*(6.792)*	*(6.704)*	*(6.703)*	*(17.969)*	*(17.961)*
Test on coeff.								
GOOD=BAD	-	1.98	-	-2.06	-	4.23		
Observations	1,545	1,545	1,545	1,545	1,545	1,545	1,545	1,545
R-squared	0.572	0.572	0.023	0.023	0.010	0.011	0.118	0.119

Table 11 reports estimated coefficients and reported t-statics based on robust standard errors that are clustered at firm level (in parentheses) from the estimation of model 1, using a control sample obtained with a propensity score matching. See APPENDIX A for variable definitions.
***, ** and * denote significance at 1% , 5% and 10% levels (two-tailed), respectively