Isolating Sarbanes-Oxley Section 404(b) effect on audit fees and market liquidity: a natural experiment.

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Abstract

Since the passage of the Sarbanes-Oxley Act (SOX) of 2002, a large body of evidence has accumulated on the costs this legislation has imposed on public companies in the United States. Estimates of the direct costs of the law have been fairly straightforward to measure, but the indirect costs of the legislation like incremental audit and non-audit fees, additional audit effort and additional internal control audit expenses like payroll and technology are harder to estimate due to lack of detailed data on these expenses. Since audit fees had been rising prior to 2002 due to a riskier auditing climate and due to the demise of Arthur Anderson in the Enron debacle, it is difficult to isolate the effect of SOX on audit fees in the U.S. Some studies have looked at the effect of SOX on audit fees and have documented an increase in the same, including a Big 4 premium. However, the portion of the increase attributable specifically to the 404(b) auditor attestation requirement is unobservable (Coates 2007). This study aims to fill this critical gap in the literature by estimating the portion of the incremental audit fees that is the result of the auditor attestation requirement of Section 404 by using a unique dataset of Indian companies. Clause 49 of the exchange listing requirements for companies in India required CEO/CFO certifications on internal controls and financial statements since 2003. Some of these companies are also cross-listed on US exchanges and have to comply with Section 404 from fiscal year-end Dec 2009. This provides a natural experiment to isolate the incremental compliance costs due to Section 404 for the cross-listed firms. The results of this study have important implications for policy makers and regulators in the U.S. who are concerned about the competitiveness of US capital markets going forward. In many cases, this audit fee premium may make the costs of listing in the US too high and incentivize the firm to de-list or cancel its ADR program and go dark, calling into question the global competitiveness of US stock exchanges.

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I. Introduction

Section 404 of the Sarbanes-Oxley Act (SOX) of 2002 requires management to present a signed report on the effectiveness of the internal controls in the firm. Section 404(b) further requires that the external auditor issue a report (attest to) on the internal controls of the client and on management’s assessment of such controls. The Act therefore imposed additional costs on public companies that included additional audit fees, internal labor costs for added staff, and external consulting/technology expenses.

SOX Section 404 costs have arguably been a matter of great controversy and undue hardship on smaller public companies (Scannell 2007). These costs have also increased the total costs to foreign companies of having their stocks listed and traded on a US exchange. The increase in audit fees attributable to auditor attestation requirement is composed of two parts; (1) increased audit fees for higher audit effort and/or higher auditor liability risk and (2) increased internal audit staff requirements including payroll and technology/consulting services. Based on disclosures of audit fees required for US companies, it is difficult to separate the audit fee into these two components. In a recent study by Raghunandan and Rama(2006), the authors use voluntary disclosure data made by some small companies to separate out the Section 404 compliance costs, but their sample is mostly smaller companies that disclose internal control weaknesses. Due to data limitations, the audit fees cannot be separated into the pure auditor attestation requirement for US companies. One must therefore assume that all of the increase in compliance costs post Section 404 is due to a mix of increased audit effort, higher auditor liability risk and higher internal audit costs. Raghunandan & Rama(2006) study the audit fee component of SOX Section 404 compliance by US firms using data on a sample of manufacturing companies from Jan 2003 to Sep 2005. They find that the mean total compliance costs is $2.2 million among the firms that voluntarily disclosed this information.² (Bedard, Carson and Simnett 2009) study the relationship between cross-listing and the pricing of audit

¹Accelerated filers (companies with more than $75 million in public float) were required to adopt Sec 404 for fiscal year end on or after Nov 15, 2004. Other companies had a later compliance deadline of July 15, 2007. The implementation date for non-accelerated filers was again extended to fiscal year end Dec 15, 2008. Foreign private issuers were initially required to achieve compliance by year end 2007, which was later extended to Dec 15, 2009.
²They found that the firms that voluntarily disclosed compliance costs tended to be smaller (sales less than $2 billion) and more likely to have material weaknesses in internal control.
services for a sample of Australian and Canadian firms and find a cross listing premium of 28%. They attribute this to both increased audit complexity and expected liability risk. Interestingly, they find that the greater audit complexity effect is not affected by auditor size, but the higher liability risk raises audit fees only for Big 4 auditors. In a study of UK firms that cross-list on US exchanges, (Seetharam, Gul and Lynn(2002) find that UK audit firms tend to charge higher fees for their services when their clients are cross-listed on major U.S. stock exchanges, but not when the firms are cross-listed on a non-US foreign exchange. They attribute their findings to the higher litigation risk in the US. Empirical evidence from (Choi, et al. 2009) supports the premise that audit fees increase with the strength of the legal regime. The logic is that in a stronger legal regime, auditors face greater litigation risks, thus forcing them to charge higher audit fees to compensate for the higher liability risk. They also argue that the effect of this legal regime differs across auditor size and find that Big 4 audit fee premiums decrease when the legal regime is stricter.

In this study, using data from Indian public companies that have ADR\(^3\) programs (cross listed in the US), I try to isolate the impact on audit fees due to auditor attestation on internal controls. The findings of this study have implications for regulators in the US. In recent years, the attractiveness of the U.S. capital market for foreign firms has been a significant policy concern. The result of this study will be useful in evaluating the impact of regulatory reforms on foreign private issuers. The recent elimination of the requirement of US GAAP reconciliation for firms that have adopted IFRS, is a move in the right direction that might offset some of the incremental costs to SOX 404 compliance.

The balance of this paper is as follows; Section II provides a brief overview of the literature and the motivation for this study, Section III develops the hypotheses to be tested, Section IV summarizes the empirical model, Section V discusses the sources of data, Section VI

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\(^3\) Shares of foreign companies are traded on US exchanges either as a direct listing or as ADRs(American Depository Receipts). There are several types of ADR programs, of which Level II and Level III are listed and traded on the major US exchanges. Level 1 ADRs are placed privately and have lower disclosure requirements. Level II/III ADR firms are required to file Form 20-F which initially required a reconciliation to US GAAP, but has recently been changed to allow no reconciliation if the statements follow IFRS.
summarizes the results of the model and finally, Section VII presents the conclusion and suggestions for future research.

II. Motivation

Audit fees in the US had already been rising sharply prior to 2002 due to a riskier auditing climate and due to the demise of Arthur Anderson. Recent surveys conducted by the SEC and Jiang & Wu(2009) conclude that US companies that have had to comply with Section 404- with the exception of small accelerated filers and companies disclosing internal control weaknesses- saw their audit fees continue to rise after AS5(PCAOB) went into effect in 2007, but at a much slower rate than they had after AS2. These results are consistent with a Compliance Week report that showed a 3.2% increase in audit fees from 2006 to 2007 for S&P500 companies with revenue over $1 billion. Surveys indicate that the 2004 Section 404 compliance costs were nearly 20 times higher than originally estimated by the SEC (SEC, Atkins 2006). The compliance costs have been higher for both, the management assessment of internal controls and for the independent auditor attestation (Sneller and Langendijk 2007). In the U.S. the Section 404 audit fee premium was 50% higher for accelerated filers who complied in 2004.(CRA International 2006; Eldridge and Kealey 2005; (FEI March 2008); Iliev 2008). In the first year of compliance, audit fees doubled. Krishnan et al(2008) also find that the audit costs for Section 404 were relatively lower for larger firms, when adjusted for total assets, suggesting economies of scale. In an effort to reduce these costs, PCAOB issued AS5 in May 2007. The effect of this on the growth in audit fees is still uncertain. In a recent study, (Bronson, Ghosh and Hogan 2009) focus on the incremental audit effort for cross listed firms and find that after controlling for home country litigation environment, audit fees for firms cross-listed in the U.S. are 23% higher than those for U.S. firms.

On Feb 21, 2000, the Securities and Exchange Board of India (SEBI) adopted Clause 49, a significant corporate governance reform proposal added to the stock exchange listing requirements. The adoption of clause 49 was a major leap forward for corporate governance in India. Clause 49 requires, among other things, public companies to have audit committees, a minimum number of independent directors, and CEO/CFO certification of financial statements
and internal controls. The implementation of Clause 49 was staggered and became effective for large firms from March 31, 2001, followed by medium-sized firms from 2002 and small firms from 2005. See Table 1 for a detailed comparison of Clause 49 with SOX. Hence, Indian public companies were already complying with the Sox 404 requirements on management certifications of internal controls, well before the passage of SOX in the US.

In the U.S. Sec 404(b) requirements on auditor attestation of internal controls was initially required for all Foreign Private Issuers (FPI) for fiscal year ending on or after June 2006. In June 2008, the SEC approved a one year extension for small public companies to meet Sec 404(b). With this extension, non-accelerated filers, including foreign private issuers, have to comply with the 404(b) attestation requirements on 20-F filings for the fiscal year ending on or after Dec 15, 2009. This provides us with a natural experiment wherein any increase in audit fees during 2009 and 2010 may be deemed to be the direct result of the auditor attestation requirements alone!

Using a hand-collected panel dataset on all Indian firms cross listed on a US exchange and a matched control group of firms that trade in the Indian stock exchange, but do not cross list their shares for the years 2002-2010, I seek to isolate the direct effect of the auditor attestation requirements on audit fees.

More specifically, this study seeks to answer the following questions:

1) How much did audit fees increase as a result of 404 (B) requirements and can we attribute it solely to higher liability risks of having an ADR program in the US?
2) Did firms switch from local to global audit firms in order to meet this requirement? If yes, was there a global (Big 4) audit fee premium?
3) Was the audit fee increase large enough to make the firms consider delisting from US exchanges?
4) What are the reactions of investors(and the cost of capital) to this requirement, as measured by market liquidity measures like bid ask spreads and trading volume in the home market for firms that have an ADR program vs. those that do not?
III. Hypotheses development

Following (Simunic 1980), a large body of research on audit fees, has established that audit fees are affected by factors that increase an auditor’s risk, e.g., client size, complexity, asset composition, industry, business risk, financial distress, ownership structure (i.e., listing status) and litigation risk. Studies have also shown that the general model of audit fees is robust across time periods, countries and sample composition (Hays, Knechel and Wong 2006). Consequently, I expect that audit fees will increase in the year leading up to the deadline for auditor attestation requirements for foreign private issuers starting with the fiscal year end Dec 15, 2009.

Hypothesis 1:

*Ceteris paribus, the auditor attestation requirements for Sarbanes-Oxley section 404(b) will increase the audit fee for Indian firms that cross-list on a US exchange relative to firms that are local due to increased auditor liability risk and/or audit effort.*

(Litvak 2007) studies market reaction to the adoption of Sarbanes-Oxley and finds a negative reaction for cross listed firms subject to SOX relative to a control group of non-cross listed firms from the same country. Studies on the cross-listing decision of firms tend to focus on the effect on stock price in the local market and find that the positive cross listing premium may be due to the bonding effect, i.e., firms cross listing choose to “bond” with the greater disclosure standards of developed country markets. (Land, Lins and Miller, 2003; Doidge, Karolyi and Stulz, 2004; Reese and Weisbach, 2003). Litvak(2007b) finds that more regulation is not always better, since the bonding premium for US cross-listed firms declines with adoption of SOX. Black and Khanna (2007) was the first study to look at the market reaction to Clause 49 and find that the May 1999 announcement by Indian securities regulators of plans to adopt what became Clause 49 is accompanied by a 4% increase in the price of large firms over a two-day event window, relative to smaller public firms; the difference grows to 7% over a five-day event window. Mid-sized firms had an intermediate reaction. The positive reaction of large Indian firms contrasts with the mixed reaction to the Sarbanes-Oxley Act of both U.S. and cross-listed firms, which the authors attribute to differences in the country’s prior institutional environment.
Using trade data (microstructure data) on public companies traded on the National Stock Exchange of India, I look at changes in the bid-ask spreads, market depth and trading volume for firms that require auditor attestation for 404(b) vs. firms that do not require this attestation, in order to tease out the differential effect of auditor attestation requirement on market liquidity. I hypothesize that the attestation requirement increases transparency and investor confidence in the reported financial statements, thus reducing informational asymmetry for cross listed firms relative to local firms. This should result in lower spreads and greater depth and trading volume for these firms following release of audited financial statements incorporating the new auditor certification statements. This leads to the second hypothesis tested in this study: (model under development for this hypothesis)

Hypothesis 2:

*Ceteris paribus, market liquidity improves for firms cross listed on a US exchange following SOX 404(b) auditor attestation requirements relative to non-cross listed firms.*

IV. Model and Methodology

The research methodology aims to capture the differential effects on audit fees and market liquidity of the auditor attestation requirements for firms that cross list in the US relative to local firms.

The Audit fee model

The classic audit fee model of Simunic(1980) and Hay, Knechel and Wang(2006) models the audit fee as a function of client size, client complexity, audit risk and auditor size. The general form of this model is as follows:

\[
\text{Audit Fee} = \left( \text{Client Size}, \text{Client Complexity}, \text{Audit Risk}, \text{Auditor Size} \right)
\]
Client size is commonly measured by the natural log of total assets. In prior studies, client complexity is measured by the number of subsidiaries, the proportion of foreign subsidiaries, the number of business/industry segments and the asset composition. In this study, I use two variables to measure client complexity, FORASSET, the ratio of foreign assets to total assets, and INVREC, the ratio of inventory and accounts receivables to total assets. Client risk is measured using two variables: ROA, ratio of net income to total assets, a profitability measure, and LOSS, a dummy variable that is equal to one if the firm reported a loss in the previous year, 0 otherwise. These two variables are proxies for detecting financial distress in the firm. Auditor size is measured using an indicator variable that is equal to one if the audit firm is an international Big 4 firm and is equal to 0 otherwise. For cross listed firms, the greater audit complexity and audit effort justify an audit fee premium. I expect the coefficient on the ADR variable to be positive, reflecting an audit fee premium. The co-efficient on the variable SOX isolates the differential in the audit fee paid by firms that have ADR programs and therefore become subject to the requirements of SOX Section 404(b). Most prior studies of audit fees have used a cross-sectional approach, thereby ignoring the dynamics of audit fee evolution over time. In this study, I pool cross-section and time-series data to study the dynamics of the audit fee over time and across securities, thus using the data more efficiently. Using annual data for each of the variables from 2002 to 2010, I estimate the following model using data on publicly traded companies from the National Stock exchange of India:

\[
\ln TA = \alpha_0 + \alpha_1 + \alpha_2 + \alpha_3 + \alpha_4 + \alpha_5 + \alpha_6 + \alpha_7 + \alpha_8 + \epsilon
\]

Where the subscript \( i \) refers to firm \( i \) and \( t \) is a time subscript and

- \( \ln TA \): the natural log of total assets, a proxy for client size
- \( FORSUB \): the ratio of foreign assets to total assets, a proxy for complexity
- \( INVREC \): ratio of inventory and accounts receivable to total assets, a proxy for client business risk
- \( ROA \): ratio of net income to total assets, a proxy for profitability
LOSS: a dummy variable equal to 1 if the firm has reported an operating loss in the prior year, 0 otherwise, a proxy for financial distress

BIG4: a dummy variable equal to 1 if the auditor is a big international firm, 0 otherwise. The type of auditor, Big4 or local, will also impact audit fees. By engaging an international Big4 audit firm, the foreign firm is able to access the resources and expertise of the whole network of the auditor. The use of standardized audit methods and reporting practices enables efficient transfer of information (Carson 2009).

ADR: a dummy variable equal to 1 if the firm is cross listed on a US exchange, 0 otherwise; this variable picks up the incremental audit effort required for a cross-listed firms relative to a domestically listed firm.

SOX: a dummy variable equal to 1 for year 2008 and year 2009, 0 otherwise; the main experimental variable in this study to isolate the audit fee related to 404(b) attestation requirements. Since the SEC extended the compliance dates multiple times, I use years 2008 and 2009 to capture the incremental fee due to auditor attestation requirement.

I interpret this coefficient as the pure effect on audit fees of SOX due to the higher litigation risk the firm faces with respect to its ADR listing in the US.

Based on prior research, I expect auditors to charge higher fees from clients that are larger, more complex and higher business/financial risk implying that the coefficients on TA, FORSUB, LOSS, INVREC, should be positive. The coefficient on ROA is expected to be negative. The coefficient on the ADR dummy variable is expected to be positive, consistent with other research finding a positive listing premium for firms from Australia and the UK. I also expect the coefficient on the SOX dummy variable to be positive.

V. Data

The data includes all firms that compose the NIFTY index on the National Stock Exchange of India, an index of the 50 largest publicly traded companies from 2002 to 2010 (March year ending). The sources of data for the study are Audit Analytics for audit fee data for firms that have ADR programs in the USA and hand-collected archival data on firms that do not have ADR programs. I present some anecdotal evidence on audit fee for an Indian company Wipro Inc.
which has an ADR program in the US, in lieu of data analysis as the data collection is currently underway and incomplete.

Table 1 contains anecdotal evidence for one Indian cross-listed company, Wipro Inc. For example, the audit fees for Wipro Technologies went from Rs.6 million to Rs 36 million, and the firm hired KPMG (in addition to their regular local external auditors whom they still retain) in order to provide the auditor certification on its Internal controls. Clearly, this is a significant increase in the cost to Wipro of maintaining a foreign listing. On a related note, Wipro is a huge BPO (Business Process Outsourcer) for US companies, and BPOs are required to certify internal controls on SAS 70 to satisfy Sox 404 requirements since 2002. One could reasonably conjecture that the company probably had extensive controls put in place prior to 2009, when it was required to directly comply with Sec 404(b). As such, I doubt that the incremental audit effort was large enough to justify a six-fold fee premium to issue the audit attestation report.

VI. Analysis of results

To be completed

VII. Conclusion and suggestions for future research

In December 2009, foreign private issuers will have to finally begin complying with Section 404 (b) requirements of Sarbanes-Oxley. Since Section 404 was implemented, regulators have extended the deadline for compliance for FPI four times and revise the internal control auditing standards from AS2 to AS5. This study provides an estimate of the incremental compliance costs for Section 404 (b) for a sample of foreign private companies that are cross listed on U.S. exchanges through an ADR program. These estimates will inform U.S. regulators of the additional costs imposed on FPI that may affect the listing decisions going forward. It may also shed some light on the recent trend in global IPOs towards non-US exchange listings. If the higher compliance costs incentivize foreign firms to de-list their securities from trading on U.S. exchanges, it might negatively impact investor protection and disclosures in the US. Finally, the
study also sheds some light on the pricing power of the international Big4 accounting firms in foreign markets post Sarbanes-Oxley.

**Bibliography**


Seetharam, Gul, and Lynn. "Litigation risk and audit fees: Evidence from UK firms crosslisted on U.S.exchanges."

### TABLE 1: Audit fees for Wipro.

<table>
<thead>
<tr>
<th>Year</th>
<th>Local audit firm</th>
<th>KPMG</th>
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<tbody>
<tr>
<td>2001</td>
<td>Rs. 3 million</td>
<td>-</td>
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<tr>
<td>2002</td>
<td>Rs. 3 million</td>
<td>-</td>
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<tr>
<td>2003</td>
<td>Rs. 6.5 million</td>
<td>-</td>
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<tr>
<td>2004</td>
<td>Rs. 7.1 million</td>
<td>-</td>
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<tr>
<td>2005</td>
<td>Rs. 4.2 million</td>
<td>-</td>
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<tr>
<td>2006</td>
<td>Rs. 7 million</td>
<td>-</td>
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<tr>
<td>2007</td>
<td>Rs. 13 million</td>
<td>Rs.48 million(total fees:Rs.69 mill)</td>
</tr>
<tr>
<td>2008</td>
<td>Rs. 24 million</td>
<td>Rs.62.2 million(total fees:Rs.85 mill)</td>
</tr>
<tr>
<td>2009</td>
<td>Rs.19 million</td>
<td>Rs.75 million(total fees: Rs.115 mill)</td>
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### TABLE 2: A comparison of Clause 49 and SOX.

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<thead>
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<tr>
<td></td>
<td>• CEO &amp; CFO</td>
<td>• CEO &amp; CFO</td>
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<tr>
<td></td>
<td>Financial statements</td>
<td>Financial statements</td>
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<td></td>
<td>Effectiveness of internal controls</td>
<td>Effectiveness of internal controls</td>
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<td></td>
<td>Legal transactions</td>
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<tr>
<td></td>
<td>Inform audit committee of any significant changes in the above.</td>
<td></td>
</tr>
</tbody>
</table>
|                | • Auditor or Company Secretary Compliance with corporate governance. | • Auditor
|                | • All critical accounting practices used and alternative treatments that have been discussed with management. |
| DISCLOSURES    | To be completed             |                        |
| DIRECTOR       |                            |                        |
| INDEPENDENCE   |                            |                        |
| BOARD          |                            |                        |
| REQUIREMENTS   |                            |                        |
| AUDIT          |                            |                        |
| COMMITTEE      |                            |                        |
| COMPOSITION    |                            |                        |
| AUDIT          |                            |                        |
| COMMITTEE      |                            |                        |
| ROLE AND       |                            |                        |
| POWERS         |                            |                        |