



12-2004

## Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms

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### Recommended Citation

Bradshaw, M. T., Bushee, B. J., & Miller, G. S. (2004). Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms. *Journal of Accounting Research*, 42 (5), 795-841. <http://dx.doi.org/10.1111/j.1475-679X.2004.00157.x>

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## Accounting Choice, Home Bias, and U.S. Investment in Non-U.S. Firms

### Abstract

This paper examines the relation between accounting choice and U.S. institutional investor ownership in non-U.S. firms. We predict that U.S. investors exhibit home bias in their preference for accounting methods conforming to U.S. Generally Accepted Accounting Principles (GAAP) because such methods are more familiar, reduce information processing costs, and are perceived as higher quality. We find that firms exhibiting higher levels (changes) of U.S. GAAP conformity have greater levels (changes) of U.S. institutional ownership. Lead-lag regressions suggest that increases in U.S. GAAP conformity precede increases in U.S. investment, but changes in U.S. institutional holdings do not precede changes in accounting methods. We also find that the positive relation between U.S. GAAP conformity and U.S. investment holds regardless of a firm's visibility to U.S. investors (e.g., American Depositary Receipt listing, stock index membership, analyst following, firm size). However, we find that U.S. GAAP conformity has a significantly greater impact among firms already visible to U.S. investors.

### Disciplines

Accounting

## **Accounting Choice, Home Bias, and US Investment in Non-US Firms**

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December 2003

We thank Sid Balachandran, Mary Barth, John Core, John Hand, Ole-Kristian Hope, Christian Leuz, Tom Lys, Maureen McNichols, Jim Ohlson, Krishna Palepu, Scott Richardson, Cathy Schrand, Abbie Smith (editor), Irem Tuna, Joe Weber, Tim Yoder, an anonymous reviewer, and workshop participants at Carnegie-Mellon University, Columbia University, the Harvard Business School IMO conference, the Harvard Business School International Seminar Series, London Business School, New York University, Northwestern University, Pennsylvania State University, Stanford University, the University of California-Berkeley Accounting Research Talks, University of Pennsylvania, University of Texas, and Washington University – St. Louis for helpful comments and suggestions. We also thank Paul Michaud and Sarah Woolverton for programming assistance with the Worldscope data and Anne Karshis and Brian Lempel for general research assistance. We are grateful for the funding of this research by the Harvard Business School and the Wharton School.

## **Accounting Choice, Home Bias, and US Investment in Non-US Firms**

### **ABSTRACT**

This paper examines the relation between accounting method choice and investment by US institutional investors in non-US firms. Such a relation could be driven by two factors. First, “home bias” in US investment could result in preferences for accounting practices familiar to US investors. The use of accounting methods consistent with US GAAP reduces information processing costs for US investors, allowing for more thorough analyses and increasing the credibility of the financial information. Second, many sources consider US GAAP to be one of the highest quality sets of financial reporting standards in the world. Thus, US investors likely perceive firms that use accounting methods allowed under US GAAP as having higher accounting quality. We find that firms with higher degrees of conformity with US GAAP have greater levels of US institutional ownership. These associations are exhibited in levels and changes, and are robust to the inclusion of a number of control variables for other determinants of institutional investment. Lead/lag regressions suggest that increases in US GAAP conformity attract a higher level of US institutional investment in future periods, but changes in US institutional holdings do not lead to changes in accounting methods. In partition analyses, we find that the positive relation between US GAAP conformity and US institutional investment holds regardless of a firm’s ADR status or other proxies for visibility (e.g., stock index listing, analyst following, and firm size). However, the relation is significantly stronger in the subsamples of ADR firms and more visible firms, suggesting that US GAAP conformity has greater impact among firms already somewhat visible to US investors.

## **1. Introduction**

This paper examines the relation between accounting method choice and investment by US institutional investors in non-US firms. This relation could be driven by at least two factors. First, prior research examining the relatively low level of investment made outside of domestic markets suggests that informational factors, such as low visibility of the firm to foreign investors and lower credibility of the financial information, are a potential source of this “home bias” (Ahearne, et al. [forthcoming], Suh [2001]). As a primary source of information regarding the firm, the accounting system impacts how outsiders perceive and use the firm’s financial information. Greater conformity with accounting practices familiar to foreign investors reduces information processing costs, which allows for more thorough analyses and thus increases the credibility of the financial information (Barth et al. [1997], Sunder [2002]). Second, many sources consider US Generally Accepted Accounting Principles (GAAP) to be one of the highest quality sets of financial reporting standards in the world (Dye and Sunder [2001], Ashbaugh and Davis-Friday [2002], Bradshaw and Miller [2003], Krishnan [2003]). Thus, it is likely that investors, particularly those from the US, perceive firms that use a large number of accounting methods allowed under US GAAP as having higher accounting quality. Based on these two factors, we predict that US institutional investors exhibit a preference for firms using accounting methods that conform to US GAAP.

We find a higher level of US institutional ownership in non-US firms that use a greater number of accounting methods that conform to US GAAP. This association exists in both levels and changes. We partition the sample based on the visibility of the firm to US investors (e.g., ADR cross-listing) and find that the association holds regardless of firm visibility, but is significantly stronger for more visible firms. Lead/lag regressions provide evidence that

increases in conformity with US GAAP are positively associated with future increases in US institutional investment, but changes in US institutional ownership do not lead to changes in accounting methods.

We collect data on accounting method choices for non-US firms from the Worldscope database. We examine the 13 accounting choices identified by Bradshaw and Miller [2003] as having some options allowed under US GAAP and some not. Note that we are interested in choices made within the set of permissible local standards that also conform to US GAAP, rather than the complete adoption of US GAAP. We compute a “US GAAP conformity ratio” as the fraction of accounting choices that conform to US GAAP. To ensure that our results are not driven by lack of disclosure, we compute the conformity ratios based both on the total number of choices and on the number of *disclosed* choices. Because flexibility in accounting choices varies across countries, we adjust individual firm ratios by the median level for the firm’s country.

We use the Spectrum database to identify US institutional investment in non-US firms. We focus our analysis on institutional investors because they are less likely than retail investors to be impacted by any institutional frictions that inhibit international investing. Further, US institutions have become the largest source of capital in the world, extensive data exists on their holdings in non-US firms and, as sophisticated investors, they are the class of US investors most likely to base their investment decisions on a detailed analysis of financial statements. We measure US institutional investment in three ways: (i) an indicator variable for the existence of any investment, (ii) the log of the number of institutional owners, and (iii) the percentage of ownership by institutions. We also country-adjust these variables and all control variables to ensure that country-specific factors do not drive the results. Thus, our analyses examine within-country relations between accounting choice and US investment in non-US firms.

We use cross-sectional levels and contemporaneous changes analyses to examine the relation between conformity with US GAAP and US institutional holdings in the firm. In all specifications, we find a significant positive association between the US GAAP conformity ratios and investment by US institutions. For contemporaneous changes, we find that increases in the conformity ratios are associated with increases in US investment, but decreases in conformity are unrelated to changes in investment. This result suggests that US GAAP conformity is an important factor in choosing to invest in a firm, but once a US institution has invested in, and developed a familiarity with, a non-US firm, its sales decisions are based on factors other than accounting choice, such as firm performance metrics. We also estimate lead/lag regressions to investigate the causality of the association. We provide evidence that increases in conformity with US GAAP lead to future increases in US institutional ownership, consistent with the results for contemporaneous changes, but that changes in US institutional ownership do not have an impact on future conformity with US GAAP. Finally, we confirm that all of these results hold with industry-adjustments and with country fixed-effects models.

Clearly, for accounting choice to impact investment, potential investors must first be interested enough in the firm to analyze the company's financial statements. Prior research indicates that one of the primary causes of the home bias phenomenon is the inability of many foreign firms to attract the initial attention of investors. Proxies for greater firm visibility, such as firm size, inclusion in a stock index, analyst following, and having an ADR listing, have all been shown to increase US investment in a firm (Kang and Stulz [1997], Covrig, et al. [2001], Edison and Warnock [2003]). We examine the impact of each of these items on the association between accounting choice and US investment. We find that each of these visibility attributes significantly increases the impact of US GAAP conformity on US investment. Despite the

requirement that cross-listed ADR firms provide a reconciliation of their home-country GAAP to US GAAP, we find that listing an ADR and US GAAP conformity act as complements.

Additionally, we find that US GAAP conformity ratios still have a statistically significant impact on US investment for firms lacking these visibility attributes.

We also examine whether our within-country results are robust to country-level factors such as legal tradition (common law versus code law), the level of overall disclosure, the degree of statutory flexibility in accounting choices, and earnings quality. We find that, in every partition of these factors, the relation between the level of US institutional ownership and US GAAP conformity is significant. Thus, the within-country association between US investment and accounting choices is robust to different levels of these country-level factors.

Our findings contribute to the literature in several ways. First, we show that changes in accounting methods precede changes in investment, suggesting that accounting choice impacts foreign investment decisions. This is the first study that we are aware of to directly examine this relation. Second, our evidence that diversity in accounting choices reduces international investment contributes to the substantial debate regarding the benefits of international harmonization of accounting standards. Our study suggests that reducing this diversity could reduce barriers to cross-country investment. Third, we show that accounting choice has greater impact once attention has been drawn to the firm through another mechanism. While prior research attributes most of the informational issues of international underinvestment to a lack of knowledge that the firms exists (consistent with Merton [1987]), our results indicate that the informational issues that impact international investment choices are multileveled and at least partially due to reporting decisions made by the firm's managers.



Our findings and contributions are subject to several caveats. First, under Rule 13(f), US institutions are only required to list holdings in non-US firms that trade as ADRs. We find that many institutions also list holdings in non-US firms that are not traded in the US, but these disclosures are voluntary and almost certainly incomplete. Thus, we cannot determine the magnitude of home bias in our sample. As long as institutions are not strategic in their reporting, this incomplete data should add noise, but not bias, to our tests. To ensure the incomplete reporting does not affect our results, we confirm that our results hold in both ADR and non-ADR subsamples. However, if institutions systematically report (omit) investments in firms that use (do not use) US GAAP methods, then our results would suggest that US GAAP conformity is associated with a reporting bias rather than an investment preference. Second, our data limits us to studying investors in only one country—the US. Single-country studies are common in the international investment literature (e.g., Kang and Stulz [1997] is based completely on Japanese data). Moreover, the US is the most common country studied (e.g., Foerster and Karolyi [1999], Ahearne et. al. [forthcoming], Doidge et. al. [forthcoming] and Pinkowitz et. al. [2002]). However, it is possible that our results do not generalize to investors in other countries, particularly if their local accounting standards are of low quality and our results simply reflect a general preference for higher quality standards, like US GAAP.

In the next section, we motivate our predictions about the relation between accounting choice and US investment. Section 3 provides a description of the sample and variables used in the empirical tests and reports descriptive statistics. Section 4 reports results of our analyses and Section 5 provides a summary and conclusion.

## **2. Motivation and hypotheses**

### **2.1 Accounting choice and home bias**

Prior research documents a pervasive “home bias” in investment portfolios, in which investors overweight portfolios with firms domiciled in their home countries and underweight portfolios with firms located outside of their home countries (French and Poterba [1991], Cooper and Kaplanis [1994], Tesar and Werner [1995], Lewis [1999]). While institutional factors such as restrictions on foreign investments account for a portion of the home bias, the literature in this area concludes that the majority of the bias stems from informational issues, including lack of knowledge that the firm exists, an inability to monitor the firm, and poor quality or low credibility of financial information (Kang and Stulz [1997], Ahearne, et al. [forthcoming], Covrig, et al. [2001], Suh [2001], Edison and Warnock [2003]). This home bias indicates that non-US firms attract relatively low investment from US institutions. Given the magnitude of capital controlled by US institutions, this lower level of available capital could have economic impacts on firms desiring external capital. For example, firms with fewer foreign investors typically face a higher cost of capital because the economy-specific risk is borne primarily by in-country investors (Foerster and Karolyi [1999], Doidge, et al. [forthcoming]).

Prior literature finds that international differences in accounting standards are highly related to differences in information environments. For example, market-based tests indicate that German firms that prepare financial reports using either US or IAS GAAP, both of which are designed to communicate to external stakeholders, have lower information asymmetries than firms that prepare their reports using German GAAP (Leuz and Verrecchia [2000]). Adopting US GAAP or IAS also has been shown to make firms more likely to be a target for international mergers and acquisitions (Ashbaugh and Davis-Friday [2002]). In a study of international disclosure practices, Hope [2003a] shows that firms providing detailed disclosures of the accounting method choices used in preparing their financial statements have more accurate

analysts' forecasts. These findings suggest that an understanding of the accounting choices being employed can assist outsiders in interpreting the firm's accounting information.

Foreign investors are likely to find financial information more useful if a firm uses accounting methods that are familiar to these investors and discloses those choices prominently. Such conformity with foreign practice allows outside investors to use their current expertise to analyze and evaluate the accounting information.<sup>1</sup> A greater understanding of accounting choices underlying financial data reduces informational issues and, thus, could reduce home bias frictions among investors familiar with the accounting methods being employed.

## **2.2 Accounting Choice and Preferences for Higher Quality Financial Information**

Prior research suggests that institutional investors exhibit a preference for high quality financial information when making international investments. Gillian and Starks [2003] argue that the decision by CalPERS to eliminate investments in Indonesia, Malaysia and Thailand is due in part to financial transparency. Further, Mitton [2002] provides evidence that firms with higher quality disclosures were less impacted by the East Asian financial crises, suggesting that voluntary disclosures helped to insulate them from concerns regarding their domestic institutional structures. As the accounting system is an important aspect of a firm's information environment, foreign investors likely prefer accounting choices perceived to be high quality.

Many sources consider US GAAP to be among the highest quality sets of financial reporting standards in the world, frequently classifying it as one of the few globally accepted accounting standards (Dye and Sunder [2001], Ashbaugh and Davis-Friday [2002], Dechow and Schrand [2003], Glaum and Street [2003], Krishnan [2003]). Additionally, US GAAP is widely accepted by non-US exchanges around the world (Bradshaw and Miller [2003]). Given the high-

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<sup>1</sup> Barth, Clinch and Shibano [1997] make a similar argument when considering the impact of international variation in accounting standards. They provide a model that shows that harmonizing accounting standards will reduce costs of acquiring foreign expertise, thus facilitating international investment.

quality status accorded to US GAAP, US investors are likely to perceive accounting choices allowed under US GAAP as creating higher quality financial statements.

Practitioner surveys provide anecdotal evidence of such a preference. Gavin, Anderson & Company, an international IR consulting firm, interviewed 48 US portfolio managers, analysts, and research associates from 37 different institutions regarding factors that influence international investment. Every investor polled stated that US GAAP is very important or important in making investment decisions (Bank of New York [2002]). Similarly, McKinsey's [2002] survey of factors impacting international investment included the fact that 90% of global investors surveyed would prefer one set of global standards. Among North American respondents, 76% favored US GAAP as this standard.<sup>2</sup>

Based on the discussion of accounting choice and on home bias in section 2.1 and the discussion in this section regarding a preference for quality accounting, we predict that firms employing accounting methods that conform more closely to US GAAP will have a higher level of investment from US institutions:

*Hypothesis 1: The amount of ownership by US institutional investors in a firm is positively associated with the degree of conformity of the firm's accounting choices with US GAAP.*

### **2.3 Accounting choice, visibility, and ADRs**

While familiar accounting methods can make information more understandable to foreign investors, outside investors must first be interested in reviewing the firm's financial statements for accounting to influence investment decisions. Prior research suggests that firms that list an American Depository Receipt (ADR), are included in a stock index, have large analyst

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<sup>2</sup> Interestingly, while 59% of Latin American respondents favored US GAAP, 78% of Western European and 65% of Asian respondents favored IAS. Similarly, a KPMG survey of European firms found that their assessment of the quality of IAS and US GAAP was dependent on the type of GAAP they employ, leading KPMG to conclude "... it is likely that individual responses were influenced by a respondent's familiarity with their own adopted GAAP" [KPMG 2000]. Combined, this survey evidence suggests that respondents are more favorably inclined towards the GAAP with which they are most familiar, consistent with the arguments made in section 2.1 regarding home bias.

following, or are simply large in size attract more foreign investment (Kang and Stulz [1997], Ahearne, et al. [forthcoming], Covrig, et al. [2001], Edison and Warnock [2003]). Accordingly, we expect that conformity of accounting method choice with US GAAP will be more strongly associated with US institutional investment for firms that have these attributes and, thus, are more likely to be reviewed by a large number of US institutions:

*Hypothesis 2: The positive association between the amount of ownership by US institutional investors in a firm and the degree of its accounting choice conformity with US GAAP will be greater for firms that are more visible to US investors.*

This hypothesis is potentially confounded in the case of firms with ADRs. In addition to attracting attention to the firm, listing as an ADR has an impact on the accounting information provided by the firm. ADR firms are required to file a form 20-F that reconciles their local GAAP information to US GAAP for selected financial statement categories. This requirement provides US investors with some accounting information that is similar to that which they normally use in making investment decisions. Moreover, subsequent to an ADR listing, firms' accounting information in their home-country financial statements exhibits properties more similar to US GAAP firms than to non-ADR firms in their home-country (Lang, et al. 2003). This finding suggests that listing an ADR results in changes in the accounting information environment similar to those that we predict will increase US investment. Finally, an exchange-traded ADR listing also subjects the firm to SEC regulatory oversight, which can boost the confidence of investors using financial statement information.<sup>3</sup> Using this argument, Edison and Warnock [2003] provide evidence consistent with an absence of home bias in emerging market

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<sup>3</sup> The degree to which such oversight actually occurs is an open empirical question. Siegel [2002] examines a group of Mexican firms cross-listed on US exchanges and finds that "US law enforcement neither deterred nor punished" the expropriation of billions of dollars. Further, he provides evidence that very few SEC actions have ever been taken against foreign registrants. On the Stanford Securities listing of class action law suits, only 14 of the over 1,500 lawsuits listed as of May 2002 involve foreign registrants.

firms that list as an ADR. Thus, an ADR listing likely impacts the quality of financial information provided (at least for US investors) and the credibility of that information.

However, there are several reasons the form 20-F may not act as a substitute for accounting choice in the primary financial statements. First, the 20-F filed by ADR firms does not provide a full set of US GAAP financial statements. Second, the reconciliations are only provided annually, whereas most firms provide quarterly or semi-annual financial reports. Third, the 20-F is frequently not provided in as timely of a manner as the initial earnings announcement. Finally, management's supplementary disclosures, such as the MD&A, will be focused on explaining trends and expectations for the information provided in the primary statements, not the 20-F. These features of the 20-F reconciliation suggest that it provides a partial and less timely solution for investors using accounting information to monitor ADR firms.

The above discussion indicates that our predicted relation between US investment and accounting choice is likely impacted by the presence of an ADR for the firm, but the exact direction of this impact is difficult to predict. If accounting choices are only effective in mitigating underinvestment once the ADR has garnered attention for the firm and/or increased the credibility of the information the firm is providing, then the ADR listing and accounting method choice would serve as complements in attracting US investment. On the other hand, if an ADR listing draws attention to the firm *and* the 20-F provides sufficient accounting information to overcome any remaining informational issues, the accounting choice in the domestic statements of ADR firms should not be associated with the magnitude of investment by US institutions (i.e., accounting method choice and ADRs are substitutes). We investigate these various possibilities by performing separate analyses of firms with and without ADRs.

Combined, our summary of prior literature and related predictions suggest the following investment model for US institutions investing internationally. First, US institutions choose a subset of firms to analyze. We expect that characteristics such as country, industry, size, and growth play an important role in identifying this subset. In addition, the home bias literature suggests the subset is related to informational factors that initially attract US investor attention, such as an ADR listing, analyst following, and inclusion on a country index.

Regardless of how this initial subset is constructed, the second step is to analyze these companies. Accounting is a primary input into such analyses. Accordingly, the accounting choices that generate the financial statement information become important at this point in the investment process if the buy-side analyst views accounting choices more similar to US GAAP as higher quality, more familiar, more credible, and/or lower cost to analyze. Even if the primary analyst is entirely comfortable with non-US GAAP choices, accounting choice would still matter if the analyst knows they must provide their analysis to a superior, such as a US-based fund manager, who is more comfortable with US GAAP. In either case, accounting choice impacts the ability to use accounting information in analyzing a firm, and thus, the final investment decision. Note that, although we argue accounting choice plays a primary role in the analysis underlying that investment decisions, we do not expect that accounting choice is the first-order determinant of investment in non-US firms.

### **3. Sample and Descriptive Statistics**

#### **3.1 Sample**

Our sample consists of 89,078 firm-year observations between 1989 and 1999. This sample represents all firms with nonmissing market, financial statement, and accounting choice

data that are not domiciled in either the United States or Canada.<sup>4</sup> We refer to this sample as the “full sample.” We are able to obtain US institutional investor holdings data for 4,798 firm-year observations in this sample between 1989 and 1999. For the remainder of the firms in the full sample, we assume that US institutional holdings are zero. To ensure that this assumption does not bias our results, we also perform our analysis on the sample of 4,798 observations with at least one US institutional investor. We refer to this sample as the “restricted sample.”

We obtain market, financial statement, and accounting choice data from Worldscope. This database covers most large firms traded on the world capital markets and collects financial statement data from regulatory agencies (such as the Japanese Ministry of Finance) and from the companies directly.<sup>5</sup> Worldscope also retrieves some data from sources such as stock exchanges (e.g., market price information) and other data services such as ExShare (e.g., dividends, mergers, restructurings, etc.). The earliest data available on Worldscope are from 1980; however, we use data starting in 1989 due to limited data availability in earlier years.

We obtain data on analyst following from I/B/E/S. Worldscope provides I/B/E/S tickers, which allow us to download the number of analysts providing a one-year-ahead earnings forecast as of December and match the data to the Worldscope data. We obtain data on ADR securities from the May 2002 listing on the Bank of New York Depository Receipt web site.

We collect data on US institutional holdings from the Thomson Financial Spectrum database. We match the Spectrum data to the Worldscope data using CUSIPs when available on

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<sup>4</sup> We exclude Canadian firms from our sample due to the Multijurisdictional Disclosure System in place between the US and Canada during part of our sample period and due to the high level of conformity between US and Canadian GAAP.

<sup>5</sup> As of 1999, Worldscope covered over 95% of the total value of worldwide capital markets, representing 22,000 companies in 53 countries. Worldscope employs multilingual corporate data analysts that meet accounting and financial qualifications. These analysts undergo extensive training prior to making substantive contributions to the actual database. As of 1999, Worldscope employed over 300 people in four primary collection centers (Bangalore, India; Holbury, U.K.; Shannon, Ireland; and Manila, Philippines).



Worldscope. For firms with missing CUSIPs, we attempt to match with name matching algorithms. Finally, we attempt to hand match the remaining firms.

The Spectrum data is based on the Form 13-F quarterly holdings information filed with the SEC. Rule 13(f) requires institutions managing more than \$100 million in equity to file a quarterly report with the SEC of all equity holdings greater than 10,000 shares or \$200,000 in market value. This rule does not require firms to include securities traded on markets outside the US. Thus, with the exception of exchange-traded ADR shares, institutions voluntarily report holdings in securities of non-US firms.<sup>6</sup> As a result, our data likely understates institutional investment in some non-US firms and, thus, cannot quantify the extent of home bias in our sample. However, the focus of our study is to explain the cross-sectional variation in reported investments to examine the relation between accounting choice and US investment. Bias may occur only if the decision to report a security on a 13-F is *systematically* related to the degree of US GAAP conformity. For example, if institutions that ignore accounting choices systematically fail to report foreign holdings, while institutions that use accounting choice systematically report foreign holdings, our results would overweight the importance of accounting choice. Even in this case, accounting choice would still matter for many institutions and our conclusions would still hold. Alternatively, if institutions do not actually use accounting choice in making the investment decision, but for some reason only report holdings in firms with relatively high US GAAP conformity in their accounting choices, our results would suggest that institutions believe accounting choice is important in justifying investments, but not in actually making the investments. We do not believe either reporting bias is likely driving our results.

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<sup>6</sup> A review of the Spectrum data shows that 75% of the non-US firms in our sample represent direct holdings in securities traded on foreign exchanges, as evidenced by CINS numbers (instead of CUSIP's) and the "ORD" indicator to denote ordinary shares (as opposed to ADR shares). In Section 4.5, we verify that our results are present in both ADR and non-ADR subsample to ensure that voluntary reporting is not driving our results.

## 3.2 Variables

Table 1 provides definitions of all variables used in the empirical tests. We use three different measures of US institutional ownership. First, we define an indicator variable, DIH, to equal one if a firm has at least one US institutional owner and to equal zero if we were unable to find any US institutional owner. Next, we measure the percentage ownership of US institutions in the firm (PIH), defined as total market value of shares owned by US institutions divided by the total market value of the firm. This construct is the most commonly used proxy for institutional ownership (see, e.g., Bushee [1998], [2001]; Gompers and Metrick [2001]). A drawback of this measure is that it requires data on total shares outstanding or total market value, which is missing for some firms in our sample.<sup>7</sup> Finally, we use the log of the number of US institutional investors that have nonzero holdings in the stock (LNIH). This measure has been also used in prior research as a proxy for institutional following (e.g. O'Brien and Bhushan, [1990], Walther [1997]) and has the advantage that it does not require data on total shares outstanding. In addition, in the presence of restrictions on foreign ownership magnitudes, differing levels of free float across countries, and/or large block investments, this measure can provide a cleaner proxy for US institutional interest in a stock than PIH does.

We measure conformity with US GAAP based on accounting method choice data from Worldscope. Following Bradshaw and Miller [2003], we obtain data on 13 accounting method choices and identify whether each choice is allowable under US GAAP. The Appendix provides a listing of the 13 accounting choices we use, the method(s) classified as conforming with US

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<sup>7</sup> Computing this measure is confounded when firms have multiple share classes. If market value is available for all share classes, we simply sum the market value of all share classes as the denominator. If price is missing but shares outstanding is reported, we divide total shares held by US institutions in all share classes by total shares outstanding in all classes. We must do this for approximately 10% of the sample. For 5% of sample firms, total shares outstanding is missing and we must delete the observation from the test. In the case of ADRs, we use the appropriate translation factors, which are embedded in the Spectrum data on price and shares outstanding.

GAAP, and a tabulation of the overall conformity with US GAAP for all non-US and non-Canada firm-years from 1989-1999.<sup>8</sup> Our goal in using these 13 choices is to create a proxy for the overall conformity of the firm's accounting choices with those allowed in the US. We do not view these 13 choices as representing either a comprehensive list of all choices or as the 13 choices that investors would view as most important. Rather, they are as comprehensive a set of accounting choices as the Worldscope data allow us to compute.

We compute two measures of conformity with US GAAP. RATIO1 is calculated as the percentage of the 13 accounting method choices that conform to US GAAP. The numerator of this ratio includes only choices that are disclosed *and* consistent with US GAAP. As a consequence, nondisclosure of any accounting choice is treated as not consistent with US GAAP. Even if the firm were using methods consistent with US GAAP, the lack of disclosure would result in US investors being unaware of this choice. Accordingly, RATIO1 equates nondisclosure with disclosure of a non-consistent accounting method in measuring the degree to which firm is conveying financial information that is familiar to U.S. investors. However, nondisclosure can result from non-applicability (e.g., accounting for research and development). Moreover, Hope [2003a] finds disclosure of accounting choices *per se* can impact a firm's information environment. Thus, we compute a second conformity measure (RATIO2) that does not "penalize" for nondisclosure. RATIO2 is calculated as the percentage of the *disclosed* accounting choices that conform to US GAAP. Both ratios are bounded by the interval [0,1], but

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<sup>8</sup> The accounting method choices selected represent those for which there is at least one method that can be identified as inconsistent with US GAAP. For example, we do not include the accounting method choice for depreciation, because almost all possible depreciation methods coded by Worldscope are acceptable under US GAAP. Unlike Bradshaw and Miller [2003], we do not consider price-level adjustments to be conformant with US GAAP because, even though they are technically allowed in the case of a hyperinflationary period, they would not be observed in the US during our sample period. However, our results are virtually identical if we consider these adjustments to be conformant with US GAAP.

RATIO2 will mechanically have a higher sample mean because we are limiting the calculation to the number of *disclosed* accounting method choices, rather than dividing by the full set of 13.

We confirm the validity of our US GAAP conformity ratios by examining ADR reconciling items. Firms sponsoring ADRs on US exchanges are required to reconcile local GAAP to US GAAP, and Worldscope provides both sets of data. If RATIO1 and RATIO2 capture the “closeness” of non-US firms’ local financial reporting to US GAAP, then firms with higher (lower) conformity ratios should exhibit lower (higher) ADR reconciling adjustments. For all firms with available data on Worldscope, we compute the absolute value of the reconciling adjustments for operating income, net income, and total assets as the difference between each line item from the local GAAP financial statements and the amount from the ADR filing, scaled by the firm’s market value (all amounts in US\$). All correlations between the conformity ratios and the reconciling adjustments are negative and significant, confirming that our ratio variables capture meaningful differences in financial statements between non-US and US GAAP.<sup>9</sup> Moreover, Bradshaw and Miller [2003] examine a sample of non-US firms that voluntarily adopt US GAAP for local reporting. Using the same 13 accounting choices, they document a significant increase in the conformity ratios upon adoption of US GAAP. They also document a structural shift in the behavior of accounting system outputs for US GAAP adopters. They demonstrate that, before adoption of US GAAP, the sample firms exhibit large negative correlations between accruals and cash flows, statistically equivalent to correlations for matched foreign firms. However, after adoption of US GAAP, the large negative correlations attenuate for the sample firms, becoming statistically equivalent to those of matched US firms. These findings further validate the accounting choice data.

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<sup>9</sup> The Spearman (Pearson) correlations of the RATIO variables with the absolute value of reconciling adjustments for operating income, net income, and total assets range between -0.17 and -0.22 (-0.05 and -0.21). All of the correlations except one are significant at or below the 0.001 level.

We include a number of variables to control for other factors that likely explain US institutional ownership in non-US firms. We use five variables to proxy for the degree of visibility and richness of the information environment of non-US firms. We include an indicator variable (ADR) for whether the firm has an American Depository Receipt listed on a US exchange (i.e., Level II or III ADRs), which make these firms more visible to US investors than non-US firms not listed in the US and which subject the firm to SEC review (Ahearne, et al. [forthcoming]). We also include the log of the number of years the firm has had a Level II or Level III ADR listed on a US exchange (ADRTIME). We add an indicator variable for whether a firm is listed on any stock index (DSI), either on its home country exchange or on another non-US exchange (e.g., FT-SE 100, Nikkei 225, Hang Seng). Presumably, US investors seeking to invest in a certain country will begin their search with firms listed on a major stock index in the country (Covrig, et al. [2001]).<sup>10</sup> Because Khanna et al. [2003] find that “US disclosure practices” are associated with US product market interactions, we include an indicator variable for the presence of US sales (USSALES) using Worldscope segment data. If a firm does not disclose segment data, we assume the firm has no US sales.<sup>11</sup> Finally, we include the log of the number of analysts providing forecasts of the firm’s earnings (LNAL). Prior research finds that this measure is associated with institutional following both in the US and internationally due to

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<sup>10</sup> This variable is only available for the most current year of Worldscope data. We set this indicator equal to one (zero) for all years a firm is in the sample if it is listed (not listed) on an index in the most recent year. Thus, this measure is likely a noisy measure of index membership in the early sample years. However, our main results are not sensitive to the inclusion of this variable.

<sup>11</sup> Geographic segments are only identifiable for 11% of the Worldscope segment sales data. We assume that any identifier including the US comprises US sales, but this is a noisy measure because the US is often combined with other areas in the segment definition, such as Canada, Mexico, South America, Australia, and even Thailand. For this reason, we do not use the magnitude of US sales; however, if we do use this measure, the RATIO variables remain significant. The results are also not sensitive to our assumption that no segment disclosures mean no US sales; if we restrict the sample to only firms disclosing segment data, the RATIO variables remain significant. Finally, in addition to using a US sales measure, concurrent research also examines an indicator for US assets (Khanna et al. [2003]). In the Worldscope data, only 15 firms report US assets but no US sales, so the US assets measure is subsumed by US sales in our sample.

the contribution of analysts to a firm's visibility and information environment (O'Brien and Bhushan [1990], Covrig, et al. [2001]).<sup>12</sup>

We also include a number of variables to control for well-documented preferences of institutional investors for size, growth, performance, and risk characteristics among US firms. Institutions tend to invest more in larger firms because of liquidity, information environment, and fiduciary concerns (Kang and Stulz [1997], Bushee [2001], Gompers and Metrick [2001]). We proxy for firm size using the log of the firm's market value of equity in US dollars (LMVUS). Fiduciary concerns also can lead institutions to have preferences for firms with better accounting performance and lower risk (Bushee [2001]). We proxy for accounting performance with sales growth over the prior year (SGR) and with return on equity (ROE). We proxy for risk with the leverage ratio, debt-to-assets (DTA). We use this measure instead of beta or systematic risk because of their limited availability on Worldscope. Institutions tend to adopt consistent investment styles based on growth and income attributes, so we also include three proxies for firm fundamentals: the earnings-price ratio (EP), the book value-price ratio (BP), and dividend yield (DP) (Bushee [2001]).<sup>13</sup> Prior research documents an institutional investor preference for firms with recent strong market performance (Bushee [2001], Gompers and Metrick [2001]), so we include the firm's raw return over the prior year (RET). Finally, we include an indicator for whether the firm is audited by a Big 5 auditing firm or their predecessors (BIG5) to control for US investor preferences for assurance services from auditing firms with strong reputations in the US (Aggarwal, et al. [2002]).

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<sup>12</sup> O'Brien and Bhushan [1990] model the number of analysts and the number of institutions as a simultaneous system of equations. We do not use such an approach in this paper because analyst following is not a main focus of the paper and because the limited set of financial variables available on Worldscope would make simultaneous equations modeling problematic. We exclude LNAL from the analysis and find no differences in inferences for our main variables of interest.

<sup>13</sup> These three ratios, as well as ROE and DTA, are likely to be affected by both a firm's economics and its accounting choices. In the latter case, including these ratios potentially biases against us finding a relation between US institutional ownership and a firm's accounting choices.

### 3.3 Descriptive Statistics

Panel A of Table 2 presents mean and median values of the variables used in our empirical analyses.<sup>14</sup> Column 1 presents values for the full sample. In our sample, 5.4% of the firm-year observations in our sample have any US institutional ownership and the mean number of institutions per firm is 1.12. Conformity with US GAAP is fairly low across the full sample. The mean value of RATIO1 shows that only 42.1% of the accounting choices, on average, are consistent with US GAAP. The mean value of RATIO2 is 71.2%, suggesting that nondisclosure of accounting choices explains a significant part of the low mean for RATIO1. Only 1.7% of the full sample has an exchange listed ADR and 52.3% are listed on a non-US stock index. These full sample statistics indicate that Worldscope covers a broad set of firms and does not overtly skew its coverage toward firms with a significant US presence.

Columns 2 and 3 of Panel A compare firms without any US institutional ownership to our restricted sample (i.e., firms with at least one US institutional investor). The mean (median) number of US institutions per non-US firm is 21 (4), which is far below the comparable number for US firms: 113 (58) (from Walther [1997]). Similarly, the mean percentage of US institutional ownership is only 3.4% in non-US firms, compared to 36-39% in the US (as reported in Walther [1997] and Bushee [2001]). While some of these differences may be attributable to the voluntary nature of non-ADR reporting on form 13-F, the large magnitude of the differences is consistent with the common finding of relatively low foreign investment by US investors.<sup>15</sup> The degree of conformity with US GAAP is significantly higher in the restricted

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<sup>14</sup> For variables with extreme outliers (e.g., LMVUS, SGR, ROE, DTA, EP, BP, DP, RET), we winsorize the extreme 1% of each tail. We also estimated all of the models using ranked values of all continuous variables. The RATIO variables remained statistically significant in each model using this specification.

<sup>15</sup> Given the lack of mandatory reporting of US holdings in non-US firms, it is difficult to find reliable data on how much US investment there is in non-US firms. However, Pinkowitz et al. [2002] report that 91.3% of all equity investment by US investors is in US firms and, in 1999, only 7% of mutual funds on Spectrum reported

sample than in the sample with no US institutional ownership, providing univariate support for the prediction that US investors prefer firms with higher conformity with US GAAP. US institutions also invest more heavily in ADR firms, firms listed on a stock index, and firms with Big 5 auditors. Finally, US institutions exhibit preferences for firms with greater analyst following, larger market cap, higher sales growth and ROE, and higher stock returns, consistent with evidence from US data.

The last two columns of Panel A compare firms that have exchange-listed ADRs to firms that only trade on non-US exchanges. ADR firms attract significantly more US institutional ownership, with 87% (4%) of ADR (non-ADR) firms having at least one US institutional investor. The US GAAP conformity ratios are significantly higher for ADR firms, but still far below one. These two findings indicate the importance of controlling for ADRs when examining the relation between US institutional ownership and US GAAP conformity. Almost all ADR firms tend to be listed on a stock index and audited by Big 5 firms. They also have significantly greater analyst following, firm size, accounting performance, and market performance.

Panel B of Table 2 presents the number of firms in each country represented in our full sample, as well as statistics on mean institutional ownership, percent of firms with ADRs and stock index membership, mean US GAAP conformity ratios, and the standard deviation of conformity ratios for each country. Japan and the UK have the largest representation in the sample, followed by France, Germany, and Australia. Average US GAAP conformity varies significantly across countries from a low of 19% (51%) for RATIO1 (RATIO2) to a high of 59% (94%). Similarly, there is a high degree of variation in the standard deviation of the RATIO

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“International” as an investment objective. Thus, it is likely that the percentage of non-US firms with some US investment is not a great deal higher than what we report in our sample.



variables across countries, reflecting differences in flexibility of accounting choices across countries. We examine the impact of these differences on our tests in a later section.

Panel C of Table 2 presents a correlation matrix for the variables used in our analysis. There are a few highly correlated pairs of variables in our data, namely ADR – ADRTIME, LMVUS – DSI, LMVUS – LNAL, ROE – EP, and EP – DP. Multicollinearity diagnostics using variance inflation factors on yearly regressions suggest that these correlations do not adversely affect our analyses (i.e., all VIF's are less than three).

## 4. Results

### 4.1 Levels analysis

We test the hypothesis that US investment in non-US firms is associated with a higher degree of US GAAP conformity by regressing our measures of US institutional investment on the US GAAP conformity ratios and control variables. We use the following model for our tests:

$$IH_{it} = \alpha_t + \beta_{1t}RATIO_{it} + \beta_{2t}ADR_{it} + \beta_{3t}ADRTIME_{it} + \beta_{4t}DSI_{it} + \beta_{5t}USSALES_{it} + \beta_{6t}LNAL_{it} + \beta_{7t}LMVUS_{it} + \beta_{8t}SGR_{it} + \beta_{9t}ROE_{it} + \beta_{10t}DTA_{it} + \beta_{11t}EP_{it} + \beta_{12t}BP_{it} + \beta_{13t}DP_{it} + \beta_{14t}RET_{it} + \beta_{15t}BIG5_{it} + \varepsilon_t \quad (1)$$

where  $IH$  = indicator for US institutional ownership ( $DIH$ ), log of number of US institutional investors ( $LNIH$ ), or percentage of US institutional ownership ( $PIH$ );  $RATIO$  =  $RATIO1$  or  $RATIO2$ ;  $i$  = firm and  $t$  = year.

When  $DIH$  is the dependent variable, we estimate equation (1) using a logistic regression; for  $LNIH$  and  $PIH$ , we use OLS. We estimate each regression twice: once with  $RATIO1$  and once with  $RATIO2$ . To mitigate the influence of cross-sectional correlation, we estimate the regressions yearly and report mean coefficients across years, with significance levels based on a standard error computed from the distribution of the yearly coefficients ([Fama and Macbeth 1973](#)). We adjust the standard errors using the serial correlation adjustment in [Abarbanell and Bernard \[2000\]](#). For the  $RATIO$  variables, the significance tests are based on one-tailed p-

values. Two-tailed tests are used for all other variables. As a control for correlated omitted variables associated with legal, economic, or cultural factors, we adjust every continuous variable for the median level of the variable within the country (dropping any country-year with fewer than three observations). Thus, our results should be interpreted as explaining cross-sectional variation *within* countries rather than *across* countries.<sup>16</sup>

Table 3 presents results for our levels analysis. The first six columns present results for the full sample, in which firms with no Spectrum data are assumed to have no US institutional investment. For all three measures of US institutional ownership—indicator, number, and percent—and for both US GAAP conformity measures, the coefficient on the US GAAP conformity ratio is positive and significant, with five (one) coefficients significant at the 0.01 (0.05) level. These results strongly support our first hypothesis that US investors prefer to invest in firms exhibiting greater conformity with US GAAP in their accounting choices.

The control variables indicate that this result is robust to a number of significant determinants of US institutional investment. The results show that US institutions invest more heavily in non-US firms that trade as ADRs and have been listed as such for a long time. US institutions also prefer larger firms with higher ROE, higher leverage (DTA), lower EP ratio, lower recent raw returns, and a Big 5 auditor. In addition, the number of US institutions is associated with the presence of US sales. Interestingly, the relation between institutional following and analyst following is positive for the indicator variable and the number of institutions, consistent with O'Brien and Bhushan [1990], but negative for the percentage of institutional ownership (a similar pattern is found for sales growth). This result suggests that US institutions take larger positions in firms with lower analyst following, perhaps as a result of

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<sup>16</sup> We also estimated all of our analyses using unadjusted variables with fixed or random effects for country. Our results are significant at similar levels under these approaches.

specialized or focused information gathering activities by institutions. The coefficient on stock index membership also changes sign based on the specification, which could be due to fact that this variable is only available for the most recent year. To confirm that these results are not driven by multicollinearity with the RATIO variables, we omitted them from the regression and found no significant differences in results (not reported).

One potential drawback with the full sample results is that the relation between US GAAP conformity and US institutional ownership could be driven solely by the presence, rather than the magnitude, of US institutional ownership due to the large number of zero observations for US institutional following. As a result, we estimate equation (1) with LNIH and PIH as dependent variables in the restricted sample of firms, which consists of firms with at least one US institutional investor.<sup>17</sup> The last four columns of Table 3 present results from this regression. Consistent with the full sample results, the four coefficients on the US GAAP conformity ratios are all positive and highly significant (p-value < 0.01). The coefficient of 0.9884 (0.0809) on RATIO1 in the LNIH (PIH) regression indicates that a change of six accounting choices (i.e., a change of 0.46 in the ratio) would result in a 1.6 (3.8%) increase in the number (percentage) of US institutional owners. These numbers are small in absolute terms, but represent a meaningful increase in US institutions relative to the means and medians in Table 2. Thus, the degree of conformity with US GAAP in accounting choices has a significant influence on not only the presence, but the magnitude, of investment by US institutional investors.

While many of the control variables exhibit the same relation with US institutional ownership in the restricted sample, there are some notable differences. The relations between the number of US institutions and number of analysts, sales growth, and leverage flip signs in the

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<sup>17</sup> We perform the median-adjustment of the variables based on the full sample of firms, rather than within the restricted sample, because of the dramatically smaller number of firms per country in this sample. Because of this approach, the intercept is larger in magnitude in the restricted sample than in the full sample.

restricted sample. A similar reversal exists for the relation between the percentage of institutional ownership and firm size. Thus, conditional on a non-US firm having some basic attribute that attracts US institutional investors (such as an ADR), US institutions favor less followed, lower dividend yield firms among this set. Regressions omitting the US GAAP conformity ratios reveal that these relations still hold, indicating that the differences between samples is not driven by the inclusion of the conformity ratios (not reported).

#### ***4.1.1 Sensitivity analyses***

We perform a number of robustness checks to examine how pervasive these results are across countries and years (not reported). First, we examine whether countries with a small number of observations influence the results. We drop all countries with fewer than 200 observations and continue to find a significant relation between the RATIO variables and US institutional ownership. Moreover, this relation is significantly positive in each of the five largest countries in the sample: Japan, United Kingdom, France, Germany, and Australia. The results are also significant when these five countries are dropped from the sample. In examining the coefficients from the yearly regressions, we find that the relation between the RATIO variables and US investment is positive in all 11 years for all specifications. Interestingly, the magnitude and significance of the coefficients on the conformity ratios are stronger in the latter half of the sample (1995-99). This finding suggests that deviations from US GAAP have become more important as accounting systems have moved toward greater harmonization.

To ensure that no single accounting choice is driving the results, we sequentially estimate the regressions dropping one of the 13 items from RATIO1 and RATIO2 each time. For RATIO2, the item is removed from both the numerator and denominator. We estimate these regressions on both the full and restricted samples for both LNIH and PIH, yielding a total of 104

regressions. In only two of the 104 regressions is the coefficient on the RATIO variable not significantly greater than zero at the 0.05 level, and in one of those two cases, the coefficient is significant at the 0.10 level. Thus, the evidence suggests that the RATIO variables are not driven by one specific accounting choice.

We also investigate whether analyses using individual accounting choices or subsets of choices would be feasible. In the full sample, the mean (median) bivariate correlation between individual choices is 0.71 (0.70) and all bivariate correlations are greater than 0.50. Moreover, the Cronbach's alpha for the RATIO1 index is 0.96, substantially above Nunnally's [1978] suggested value of 0.70 for a reliable index. Thus, the high multicollinearity among individual items would prevent us from obtaining meaningful results by including all 13 choices separately. Based on this, we estimate a factor analysis on the 13 choices to explore whether there are any common factors among the choices. The first eigenvalue was 4.72 and the second eigenvalue was 0.76, suggesting there is one factor. The scree plot also suggests one factor. The proportion of the variance explained by the first factor is 89 percent, which does leave the possibility open for a second factor. We force a two-factor solution and examine both an orthogonal and oblique rotation. In both cases, the groups of the items in each factor seem essentially arbitrary and suggest no obvious underlying construct. Thus, the data strongly suggest that there are not meaningful subsets of choices within the RATIO variables.

Next, we estimate the LNIH and PIH models in the full and restricted samples replacing the RATIO1 variable with each accounting choice individually. In 45 of the 52 regressions, the coefficient on the individual accounting choice is positive and significant at the 0.05 level; in only two regressions is a coefficient negative. We ranked these coefficients within each model to check whether US investors consistently place higher weights on any given choice. The

ranking differed greatly by sample and dependent variable, suggesting that US investors are not fixating on one accounting choice. Rather, because of the high correlations among the accounting choices, each one proxies, to some extent, for the closeness of the firm's accounting to US GAAP.

We also examine two additional controls that are only available for small subsets of the Worldscope data. First, we include the percent of a firm's stock that is closely held. Second, we proxy for financing requirements using the absolute value of the net external financing cash flows during the year, which include both debt and equity flows. We include these variables as controls in the regressions for the full sample only. Both measures of US institutional ownership (LNIH and PIH) are negatively related to the level of closely-held ownership, as would be expected. LNIH is negatively related to the external financing variable, suggesting that this variable is proxying for debt, rather than equity, activity. In each case, the RATIO variables retain their significance levels after the inclusion of these two controls. Thus, our results are robust to a number of other potential explanations.

Finally, a firm's decision to adopt a given accounting method is likely driven by many factors, some of which may be related to doing business in the United States and/or other issues that would impact US investment. This suggests that an analysis that jointly models accounting choice and US investment would be useful. Unfortunately, it is difficult to create a functional form for the decision regarding even one accounting choice, let alone the 13 included in this paper. As an alternative, we appeal to the findings in Bradshaw and Miller [2003], who examine the more extreme decision of non-US firms formally adopting US GAAP. They compare US GAAP firms with a matched sample of firms from their home country and find the US GAAP firms are more likely to have a US security, are larger, and more likely to be audited by a big 5

firms. We have included all characteristics Bradshaw and Miller [2003] find as significant as either control variables in the main analyses or as a portion of the sensitivity tests mentioned above. In all cases, our results regarding the US GAAP conformity ratio remain significant.

## 4.2 Changes analysis

To provide additional assurance that our levels results are not driven by a correlated omitted variable and to gauge the sensitivity of US investment to changes in accounting choices, we test the relation between contemporaneous changes in US GAAP conformity and in US institutional investment using the following model:

$$\begin{aligned}
 CIH_{it} = & \alpha_t + \beta_{1t} CRATIO_{it} + \beta_{2t} CADR_{it} + \beta_{3t} ADRTIME_{it-1} + \beta_{4t} DIH_{it} + \beta_{5t} CUSSALES_{it} + \\
 & \beta_{6t} CLNAL_{it} + \beta_{7t} CLMVUS_{it} + \beta_{8t} CSGR_{it} + \beta_{9t} CROE_{it} + \beta_{10t} CDTA_{it} + \beta_{11t} CEP_{it} + \quad (2) \\
 & \beta_{12t} CBP_{it} + \beta_{13t} CDP_{it} + \beta_{14t} CRET_{it} + \beta_{15t} CBIG5_{it} + \beta_{16t} CSHARES_{it} + \varepsilon_t
 \end{aligned}$$

where all variables starting with “C” represent one-year changes in the variable,  $CIH$  = change in log of number of US institutional investors ( $CLNIH$ ) or change in percentage of US institutional ownership ( $CPIH$ );  $CRATIO$  =  $CRATIO1$  or  $CRATIO2$ ;  $DIH$  = 1 if firm has at least one institutional investor and zero otherwise;  $i$  = firm and  $t$  = year.

We again estimate the regression separately for  $CRATIO1$  and  $CRATIO2$ . All regressions are estimated yearly with country-adjusted continuous variables and the standard errors are adjusted for serial correlation using the Abarbanell and Bernard [2000] approach.<sup>18</sup> We drop the stock index indicator variable because it is identical for all years. We replace it with an indicator for at least one US institutional investor ( $DIH$ ) to control for the numerous zero changes that are due to zero ownership. The  $DIH$  variable is dropped in the restricted sample results. Because the yearly change in the  $ADRTIME$  variable would not be meaningful, we use the prior level of the variable to proxy for any effect of listing time. Finally, we add the change

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<sup>18</sup> In the presence of significant negative serial correlation among yearly coefficients, which occasionally occurs with changes variables, this approach can lead to downward-biased standard errors. As a check, we estimated every model in the paper without the adjustment for serial correlation. In every case, the coefficients on the  $CRATIO$  variables that are significant with the correction are also significant without the correction. Thus, there is no case in which an insignificant  $CRATIO$  coefficient is made significant through the serial correlation adjustment.

in shares outstanding (CSHARES) as a proxy for new equity issuances. Managers wishing to raise new equity may have incentives to expand the supply of potential investors by conforming their accounting to US GAAP to attract more US investors.<sup>19</sup>

Panel A of table 4 presents results for changes in the variables for both samples and for both conformity ratios. The requirement of an extra year of data reduces the sample size to 79,644 (4,616) for the full (restricted) sample in these analyses. In the full sample, the coefficients on the changes in US GAAP conformity ratios are positive and significant at or below the 0.05 level for both ratios and both measures of institutional ownership. In addition, the coefficients on the changes in conformity ratios for the restricted sample are positive and significant in all but one regression (the relation between CLNIH and CRATIO1). These results suggest that US institutions change their holdings in response to changes in the degree of conformity with US GAAP, providing additional strong support for our hypothesis that US investors are attracted to firms using accounting choices consistent with US GAAP.<sup>20</sup>

The results for the control variables suggest that few of the significant relations found in levels hold in one-year changes. The notable exceptions are analyst following and firm size, both of which are significantly positively related to US institutional ownership in contemporary changes. Again, unreported results indicate that the control variable relations exist in the absence of the CRATIO variables.

Next, we examine whether these results are present for both increases and decreases in US GAAP conformity ratios. This analysis is based on the presumption that buying and selling

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<sup>19</sup> The number of yearly observations with changes in ADR listing, US sales, and Big 5 status are generally less than 5%. To ensure that this extreme imbalance in values does not affect our results, we estimate the regressions with the change variables omitted and with them replaced by levels indicators (i.e. ADR, USS, BIG5). We also drop the ADRTIME variable from the specification because it flips sign between contemporaneous and future changes and we replace the signed CSHARES variable with the absolute value measure. None of these alternative specifications change any of our inferences on the US GAAP conformity ratios.

<sup>20</sup> We also estimated these regressions with two-year changes in all of the variables and found similar results.



decisions are intrinsically asymmetric; the decision to buy involves assessing a large population of potential firms and choosing among them, while the decision to sell is based on assessing the much smaller population of firms currently in the investment portfolio. We expect accounting choice to be one factor among many (growth, liquidity, returns etc.) that impacts the initial decision of US institutions to invest in a non-US firm. However, a change in this accounting choice is not as likely to precipitate the selling of a currently-held stock unless the other items that led to the original purchase have changed in the same manner. Further, it is likely that the US institution has developed some familiarity with the non-US firm while holding the company's stock, and the additional information provided by conforming accounting choices may no longer be as important in monitoring the firm. Prior research provides evidence of this asymmetry. Bushee and Noe [2000] finds that institutions exhibit asymmetric reactions to changes in disclosure practices; increases in institutional ownership accompany increases in disclosure quality, but decreases in disclosure quality are not associated with decreases in institutional ownership.

Panel B of Table 4 presents results of a piecewise regression in which the change in the US GAAP conformity ratio is decomposed into positive and negative changes in the ratio.  $CRATIO1^+$  ( $CRATIO1^-$ ) is set equal to  $CRATIO1$  if it is greater than (less than or equal to) zero and set equal to zero otherwise ( $CRATIO2$  is decomposed similarly). Thus, the coefficients can be interpreted as the slopes for positive and negative values of the variables, respectively. The results indicate that increases in US GAAP conformity are positively associated with changes in US institutional ownership in all specifications, with the coefficient significantly different from zero in seven of the eight specifications. Conversely, decreases in US GAAP conformity are positively associated with changes in US institutional ownership in only five of the eight

specifications, with none of the coefficients significantly different than zero. Thus, US institutions appear to use US GAAP conformity as a screen in their investment decisions, but do not significantly reduce their holdings in response to a later reduction in US GAAP conformity.

One potential explanation for this result is that we include the zero changes with the negative changes in US GAAP conformity. We estimated the regression with the zero changes included with the positive changes in US GAAP conformity and found that the increases in conformity continued to be significant and the reductions remained insignificant. Another potential explanation is that we use country-adjusted variables (although the decomposition into positive and negative changes is based on the raw change). Using unadjusted variables yields virtually identical results. Finally, we examined two-year changes in the variables and found the same results. Thus, the asymmetric response of US institutions to changes in US GAAP conformity ratios appears to be a robust result.

### **4.3 Lead-Lag analyses**

Our maintained hypothesis is that US institutional investors respond to accounting choices made by non-US firms. The evidence in the levels and changes analyses supports this prediction. However, it is possible that the prior results reflect managers of non-US firms changing their accounting choices in response to investment by US institutional investors, or that the results reflect both effects. In either case, it would still indicate that US investors prefer US GAAP. To provide evidence on causality, we examine lead-lag regressions to test whether changes in conformity ratios lead to future changes in US institutional ownership and whether changes in US institutional ownership lead to future changes in conformity ratios. Following the results in Panel B of Table 4, we decompose changes in US GAAP conformity ratios into positive and negative changes.

Panel A of Table 5 presents results of regressions of one-year future changes in the number and percent of US institutional ownership on prior one-year changes in the US GAAP conformity ratios and control variables. For parsimony, we report only results from the full sample; results for the restricted sample are similar. The requirement of an extra year of data for this test reduces the sample size to 67,264. The results indicate that increases in both conformity ratios are significantly positively related to future changes in both the number of institutional investors and the percentage of institutional ownership.<sup>21</sup> Thus, changes in accounting choices lead to future changes in the following of US institutional investors.

Panel B of Table 5 presents results of regressions of one-year future changes in the US GAAP conformity ratios on prior one-year changes in the number and percent of US institutional ownership. We use the same control variables as in the future change in institutional ownership regression, as Bradshaw and Miller [2003] use similar variables to explain the adoption of US GAAP. To be consistent with Panel A, we decompose changes in institutional following into positive and negative changes. In these regressions, all of the coefficients on the changes in US institutional ownership are insignificantly different from zero. If we use continuous changes in institutional following rather than the piecewise specification, the coefficients are all insignificant (not reported). Thus, we find no evidence of a positive relation between changes in US institutional ownership and future changes in US GAAP conformity ratios, suggesting that managers do not change accounting choices in response to changes in the presence of US institutional investors. This finding is not surprising given the evidence in Table 2 that US

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<sup>21</sup> If we use the continuous CRATIO variables instead of the piecewise specification, the coefficients on both CRATIO1 and CRATIO2 continue to be significant in the future change in percentage ownership regressions but are no longer significant in the future change in number of institutions regressions.

institutions generally have a very small ownership position in non-US firms, and hence are not in a strong position to enact changes in policy through corporate governance activities.<sup>22</sup>

#### **4.4 Industry-adjusted analyses**

Another possible alternative explanation for a positive relation between US GAAP conformity and US institutional investment is that US institutions tend to invest only in certain industries in foreign countries, and these industries use accounting methods that more closely conform to US GAAP. To check this explanation, we define industries at the 2-digit SIC code level and estimate all of the regressions with all continuous variables adjusted by the median for the firm's industry, instead of the firm's country. Table 6 presents results for the industry-adjusted analysis for the full sample. Because the coefficients on the control variables are virtually identical when RATIO2 is included instead of RATIO1, we present the full model for RATIO1 and only the coefficient on RATIO2. The first two columns replicate the levels analysis in Table 3. Consistent with Table 3, both RATIO1 and RATIO2 are significantly positively associated with the level of US institutional ownership. The next two columns replicate the contemporaneous changes analysis in Panel B of Table 4 and the last two columns replicate the future changes in US institutional ownership analysis of Table 5. Again, the industry-adjustment does not affect our primary conclusions, as increases in the US GAAP conformity ratios are significantly positively associated with current and future increases in US institutional ownership. These results also hold in the restricted sample (not reported).

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<sup>22</sup> It is possible that changes in conformity ratios lead to future changes in analyst following or ADR listing, which contemporaneously attract more US institutions. To insure the use of lagged control variables is not driving the results, we estimate all of the tests in Table 5 using future changes in control variables (i.e., changes in control variables concurrent with the changes in dependent variables). The CRATIO variables continue to significantly explain future changes in US institutional ownership at the same significance levels. The changes in US institutional ownership variables remain insignificant in the FCRATIO regressions.

We also check whether our results are robust to joint adjustment for country and industry. First, we include industry fixed effects in addition to the country-adjusted variables. In a separate analysis, we adjust all variables for the median level of firms in the same industry in the same country, dropping any country-industries with fewer than three observations. We perform this analysis only on the full sample due to the large loss in observations. In every case, our results for the US GAAP conformity ratios remained significant at or below the 0.10 level. Thus, industry investment patterns do not explain our results.

#### **4.5 Analyses on subsamples of firms based on ADR status and on visibility proxies**

In this section, we examine the relation between US GAAP conformity ratios and US institutional investment in subsamples of firms based on ADR status and on proxies for the visibility of the non-US firms to US investors. Given the importance of visibility to US investors in mitigating home bias, we expect that the relation between accounting choice and US investment will be stronger for samples of firms that are more visible to US investors, and hence more likely to be in US investors' potential investment set. We perform subsample analyses on four separate partitions to proxy for visibility: 1) ADR vs. no ADR, 2) listing on a stock index vs. no listing, 3) high analyst following (top decile in a given year) vs. low following, and 4) large firms (top decile in a given year) vs. small firms.<sup>23</sup> We estimate regressions of US institutional ownership on RATIO1 and the controls (see equation (1)) for both subsamples in each partition and report the coefficients and tests of significant differences from zero in Table 7. Then, we estimate a SUR model to test whether the coefficients are significantly different from each other in the two subsamples. This significance test is reported in the "DIFF" column. We repeat this procedure for RATIO2, and again only report the coefficient on this variable instead

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<sup>23</sup> Because the distribution of analyst following and firm size is highly skewed, we use only the top decile as a proxy for high analyst following and large firms to ensure meaningful differences between the two groups.

of repeating all of the controls. To ensure a sufficient number of observations in each subsample in our yearly regressions, we perform this estimation on the full sample.

Panel A of Table 7 presents results for the partition based on ADR status. For both the LNIH and PIH regressions, the coefficients on the US GAAP conformity ratio are significantly positive, suggesting that accounting choices are related to US institutional investment regardless of whether the firm trades in the US as an ADR or not. Moreover, the coefficients on the conformity ratios are significantly *greater* in the ADR firm subsample, indicating that the relation between accounting choice and US investment is stronger when the firm lists as an ADR in US. The coefficient of 2.1342 (0.1165) on RATIO1 in the LNIH (PIH) regression in the ADR subsample indicates that, once an institution has become highly visible to US investors, a change of six accounting choices would result in a 2.7 (5.4%) increase in the number (percentage) of US institutional owners. Consistent with our second hypothesis, these results suggests that accounting choices complement the visibility, accounting reconciliation, and/or SEC review aspects of the ADR listing in attracting more US institutional investment.<sup>24</sup>

Panels B, C, and D of Table 7 report results for the partitions based on listing on a stock index, high analyst following, and large firm size, respectively. For each of these visibility proxies, the coefficients on the US GAAP conformity ratios are significantly positive in both subsamples for both measures of US institutional investment. Thus, conformity with US GAAP is an important determinant of US investment regardless of how visible the firm is to US investors. Moreover, for each of the visibility proxies, the coefficient on the conformity ratios is

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<sup>24</sup> About 3% of the firm-year observations in the non-ADR subsample are firms that have a non-exchange-traded ADR security offered in the US market. These securities include Level I ADRs, which are not reviewed by the SEC, and Rule 144A and Reg S private placements. If we exclude these firms from the non-ADR subsample, we obtain similar results. If we include these firms in the ADR subsample, all of the coefficients on the RATIO variables remain significant, but the magnitudes are smaller. This suggests that non-exchange-traded ADRs provide less visibility to US institutions than exchange-traded ADRs.

again significantly greater in the higher visibility subsample, supporting our second hypothesis that accounting choice complements visibility in attracting US investment.<sup>25</sup>

Overall, the results suggest that the degree of conformity with US GAAP in a non-US firm's accounting choices is an important, incremental factor in mitigating home bias and attracting a higher level of investment by US institutional investors. Moreover, accounting choice conformity provides a larger incremental effect for firms that are already visible to US investors through an ADR, listing on a stock index, high analyst following, or large size.

#### **4.6 Analyses on subsamples of firms based on country-level factors**

Prior research has documented significant differences across countries in terms of legal traditions, levels of disclosure, and amount of earnings management (La Porta, et al. 1998, [Leuz, et al. 2003](#)). In addition, countries differ in the degree to which their statutory accounting rules allow conformity to US GAAP. Our within-country analysis should control for these differences. Nevertheless, we estimate our regressions within subsamples of countries partitioned on these dimensions. These analyses are primarily descriptive as it is not obvious how these country-level factors should impact the within-country relation between US investment and US GAAP conformity. However, it is important to document that our within-country results are robust to these important country-level differences.

First, we divide our sample countries into code law versus common law legal traditions using the classification in La Porta, et al. [1998]. Ball, et al. [2000] argue that common law systems are more shareholder-based, solving information asymmetries by public disclosure, whereas code law systems are more stakeholder-based, providing a larger role for private communication. In our setting, greater US GAAP conformity could improve timeliness of

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<sup>25</sup> We also estimate the changes specification (equation (2)) for all of these partitions. For both one- and two-year changes in all variables, the coefficients on the CRATIO variable in the high visibility subsample are always significantly greater than the coefficients in the low visibility subsample at the 0.10 level (not reported).

information in code law countries, whereas in common law countries, US GAAP conformity would be more of a familiarity issue for US investors. Table 8 reports results of our levels analysis in the code and common law partitions. For parsimony, we only report results for the full sample with LNIH as the dependent variable; similar results are obtained in the restricted sample and with PIH as the dependent variable. The coefficients on both RATIO1 and RATIO2 are significant in all subsamples in both partitions. Thus, US institutional ownership is associated with US GAAP conformity regardless of the country's legal tradition.

Second, we divide our sample countries into those with high and low disclosure regimes, based on the mean CIFAR score (as reported in Hope [2003b]). It is possible that transparency is a substitute for accounting choice so that the US GAAP conformity ratios are less (more) important in countries that have more (less) transparent mandatory and voluntary disclosure regimes. Table 8 shows that the coefficients on RATIO1 and RATIO2 are positive and significant in both partitions. Interesting, the RATIO variables have significantly greater coefficients in the high disclosure countries, suggesting that accounting choice complements other forms of corporate transparency in attracting US investment.

Third, we partition countries based on differences in statutory GAAP flexibility, which could influence the potential degree of conformity with US GAAP. Hope [2003a] provides some evidence that disclosure of accounting choice is more useful to analysts when more potential choices exist. To proxy for statutory flexibility, we classify any country with a standard deviation of RATIO1 above the median level for all countries to be a high flexibility country. Table 8 reports that the coefficients on both RATIO1 and RATIO2 are again significant in both partitions. We repeated the analyses based on the standard deviation of RATIO2 and on country means of RATIO1 and RATIO2 and found identical results. Thus, US institutional ownership is



associated with US GAAP conformity regardless of the degree of flexibility allowed by the countries' local GAAP.

Finally, we examine whether country-level properties of accounting quality, specifically the amount of earnings management, influence the sensitivity of US investors to accounting choice. Leuz, et al. [2003] argues that the pervasiveness of earnings management in a country is decreasing in the amount of outside investor protection. Thus, US GAAP conformity could be proxying for the ability of non-US managers to extract private control benefits through earnings management. We use the aggregate country-level earnings management scores from Leuz, et al. [2003] to split our sample countries at the median into "high" and "low" earnings management countries. Table 8 reports that RATIO1 and RATIO2 are significant in both partitions. The coefficients on the RATIO variables are significantly larger in the low earnings management countries, suggesting that accounting choices are more important where the accounting numbers are more reliable.

## **5. Conclusions**

In this paper, we investigate the relation between accounting method choice and investment by US institutions for a group of non-US firms. We find that firms employing accounting methods that are consistent with US GAAP attract more US institutional investors and have a higher level of investment by US institutions. This relation exists for a broad cross-section of firms after controlling for items previously documented as being related to investment. However, its magnitude is greater once some other mechanism, such as an ADR listing, being part of a stock index, high analyst following and/or large size, attracts US investors' attention to the firm. Finally, we find evidence that a change towards accounting choices consistent with US

GAAP leads to a subsequent increase in investment by US institutions, but we find no evidence that US institutional investment leads to a change in accounting choices.

Our analyses are subject to several caveats. First, SEC Rule 13(f) does not require firms to report holdings in non-US securities traded on non-US exchanges. We believe that a significant number of funds voluntarily report their non-US holdings and that the voluntary reporting choice is random, which simply adds noise to our tests. However, it is possible that institutional investors condition their voluntarily reporting decision on the accounting choices of the company issuing the security. In that case, our results would suggest that, while investing decisions are not sensitive to accounting choices, reporting decisions are sensitive. Second, our study only examines US investors. As with any study using only one country to study international effects, it is possible that our results do not generalize to investors in other countries. This threat to generalizability is likely even higher due to the feeling by many that US GAAP is among the highest quality sets of accounting standards, which suggests US investors are more biased in favor of their home standards than would be investors in other countries. This suggests that it would be interesting for future literature to undertake similar studies both in countries where the home GAAP is considered high quality (such as the UK or Sweden), and in those where the home GAAP is not designed to provide high quality external equity valuation information (such as the Germany or France). Finally, it is possible that some firms choose US GAAP accounting as part of a more comprehensive strategy to attract US institutional investors (i.e. targeted disclosure, road shows, etc.), and that some of the investment we observe is due to the omitted disclosure strategy variable. Ideally, we would control for these other targeting mechanisms in our regressions, but we are unable to observe many of these activities given their private nature and the lack of archival data. However, if true, this argument suggests that

mangers view accounting choices as a key part of attracting US investors, consistent with our arguments.

Our findings contribute to the literature in several ways. First, we show that accounting method choices lead US investment, suggesting that accounting choice impacts foreign investment decisions. This is the first study that we are aware of to directly examine this relation. Second, our finding that diversity in accounting choices impacts the level of foreign investment provides information to the debate regarding whether attempts to internationally harmonize accounting will impact cross-border capital flows. Third, we contribute to the home bias literature by demonstrating that the accounting choice of managers impacts the ability of firms to attract international capital. We expand on this contribution by showing that accounting method choice is more effective at impacting international investment once attention has been drawn to the firm through another mechanism. While prior research attributes most of the informational issues of home bias to a lack of knowledge that the firms exists, our results indicate that the informational issues that impact home bias are multileveled and at least partially due to reporting decisions made by the firm's managers.

## Appendix

### Accounting Method Choices and Overall Conformity of Non-U.S. Firm Choices with US GAAP (1988-1999)

<i>Accounting Method Choice</i>	<i>Consistent with US GAAP</i>	<i>Not consistent with US GAAP</i>	<i>% Consistent</i>	<i>% Not consistent</i>	<i>% Not disclosing</i>
1. Accounting for goodwill	<ul style="list-style-type: none"> <li>• Amortized</li> <li>• Amortized and/or taken to reserves</li> </ul>	<ul style="list-style-type: none"> <li>• Not amortized, expensed when incurred</li> <li>• Written off at management discretion</li> <li>• Taken to reserves</li> </ul>	27.8%	21.2%	51.0%
2. Accounting for other intangibles/deferred charges	<ul style="list-style-type: none"> <li>• Amortized</li> </ul>	<ul style="list-style-type: none"> <li>• Capitalized, not amortized</li> <li>• Expensed when incurred</li> <li>• Capitalized, written off at management discretion</li> <li>• Taken to reserves</li> </ul>	54.6%	4.5%	40.9%
3. Accounting for long term financial leases	<ul style="list-style-type: none"> <li>• Capitalized and amortized</li> </ul>	<ul style="list-style-type: none"> <li>• Expensed</li> <li>• Some capitalized and some expensed</li> </ul>	20.6%	1.5%	77.9%
4. Accounting method for long term investments less than 20%	<ul style="list-style-type: none"> <li>• Cost</li> <li>• Lower of cost and intrinsic value</li> </ul>	<ul style="list-style-type: none"> <li>• Equity</li> <li>• Market value</li> </ul>	55.9%	2.3%	41.8%
5. Accounting method for long term investments 21-50%	<ul style="list-style-type: none"> <li>• Equity</li> <li>• Equity but consolidated where significant influence</li> <li>• Equity and cost depending on significant influence</li> </ul>	<ul style="list-style-type: none"> <li>• Cost</li> <li>• Cost but consolidated where significant influence</li> <li>• Equity and proportional consolidation</li> </ul>	38.7%	22.0%	39.3%
6. Accounting method for long term investments greater than 50%	<ul style="list-style-type: none"> <li>• All subsidiaries are consolidated</li> <li>• Consolidation for significant subsidiaries - others are on an equity basis</li> <li>• Consolidation for significant subsidiaries, others are on a cost basis</li> </ul>	<ul style="list-style-type: none"> <li>• Domestic subsidiaries consolidated - others on a cost basis</li> <li>• Domestic subsidiaries consolidated - others on a equity basis</li> <li>• Foreign subsidiaries consolidated - others on a cost basis</li> <li>• Foreign subsidiaries consolidated - others on a equity basis</li> <li>• No consolidation - cost basis (parent company only)</li> <li>• No consolidation - equity basis (parent company only)</li> </ul>	74.4%	23.4%	2.2%
7. Deferred taxes recorded	<ul style="list-style-type: none"> <li>• Yes</li> </ul>	<ul style="list-style-type: none"> <li>• No - taxes paid as incurred</li> </ul>	53.1%	23.2%	23.7%
8. Treasury stock location on balance sheet	<ul style="list-style-type: none"> <li>• Deduction from shareholders' equity</li> </ul>	<ul style="list-style-type: none"> <li>• Long term investment</li> <li>• Other asset</li> <li>• Current assets</li> </ul>	17.4%	11.8%	70.8%

**Appendix (continued)**

**Accounting Method Choices and Overall Conformity of Non-U.S. Firm Choices with US GAAP (1988-1999)**

9. Financial statements cost basis	<ul style="list-style-type: none"> <li>• Historical cost entirely</li> </ul>	<ul style="list-style-type: none"> <li>• Historical cost with price-level adjustment or revaluation of specific accounts</li> <li>• Historical cost with supplementary current cost financial information</li> <li>• Current cost statements entirely</li> <li>• Modified historical cost with supplemental current cost financial information</li> <li>• Current cost with supplemental historical cost financial information</li> </ul>	74.9%	11.4%	13.7%
10. Funds definition on statement of changes in financial position	<ul style="list-style-type: none"> <li>• Cash</li> <li>• Modified cash</li> <li>• Prior to 1989, other definitions acceptable under APB 19</li> </ul>	<ul style="list-style-type: none"> <li>• Working capital</li> <li>• Modified working capital</li> <li>• Unique definition</li> <li>• Net borrowings</li> <li>• Net liquid assets</li> </ul>	29.0%	36.4%	34.6%
11. Marketable securities valuation	<ul style="list-style-type: none"> <li>• Lower of cost or market</li> <li>• Historical cost</li> <li>• Subsequent to 1993, current market value and cost with periodic valuation acceptable under SFAS115</li> </ul>	<ul style="list-style-type: none"> <li>• Current market value</li> <li>• Moving average</li> <li>• Weighted average</li> <li>• Periodic average</li> <li>• Cost with periodic revaluation</li> </ul>	34.8%	11.7%	53.5%
12. Research and development costs	<ul style="list-style-type: none"> <li>• Expensed currently</li> <li>• For computer companies in SIC codes 5054, 7371, or 7372, Capitalized and amortized later or Some expensed some capitalized are consistent with US GAAP</li> </ul>	<ul style="list-style-type: none"> <li>• Capitalized and amortized later</li> <li>• Expensed and capitalized later</li> <li>• Some expensed - some capitalized</li> </ul>	20.8%	5.2%	74.0%
13. Starting line of statement of changes in financial position	<ul style="list-style-type: none"> <li>• Net income, bottom line</li> <li>• Prior to 1989, Net income before minority interest, Net income before extraordinary items, and other definitions were acceptable under APB 19.</li> </ul>	<ul style="list-style-type: none"> <li>• Net income before net allocations to reserves</li> <li>• Net income before minority interest and taxes</li> <li>• Unique</li> <li>• Sales</li> <li>• Sales plus other operating income</li> <li>• Operating income</li> <li>• Net income before interest</li> <li>• Cash receipts</li> <li>• Operating income before depreciation</li> <li>• Other</li> </ul>	23.9%	41.3%	34.8%

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**Table 1**  
Variable Definitions

Variable	Definition
DIH	Indicator variable equal to 1 if the firm has at least one US institutional investor during the year
PIH	Percentage ownership by U.S. institutions in the firm, defined as total market value of shares owned by U.S. institutions divided by the total market value of the firm (average of four quarters during the year)
LNIIH	Log of the number of U.S. institutional investors that have nonzero holdings in the firm (average of four quarters during the year)
RATIO1	Number of accounting method choices consistent with US GAAP divided by 13 (the total number of choices examined)
RATIO2	Number of accounting method choices consistent with US GAAP divided by the total number of method choices disclosed
ADR	Indicator variable equal to 1 if there is a sponsored American Depository Receipt trading on a U.S. exchange (level II or III)
ADRTIME	Log of the number of years that the firm has had an exchange-traded ADR listed in the US market
DSI	Indicator variable equal to 1 if the firm's stock is part of any stock market index (e.g., FT-SE 100, Nikkei 225, Hang Seng, etc.)
USSALES	Indicator variable equal to 1 if the firm discloses US segment sales and zero if the firm doesn't disclose either segment sales or US segment sales
LNAL	Log of number of analysts providing earnings forecasts during December
LMVUS	Log of market value of the company based on year-end price and shares outstanding, converted to \$US using the year-end exchange rate
SGR	The one-year growth in net sales, calculated as $[(\text{current year sales}/\text{last year sales})-1]$
ROE	Return on equity, calculated as (net income after preferred dividends/beginning common equity)
DTA	The debt-to-total assets ratio, calculated as $[(\text{long-term debt} + \text{short-term debt} + \text{current portion long-term debt})/\text{total assets}]$
EP	Earnings-to-price ratio, calculated as (earnings per share/year-end market price)
BP	Book-to-market ratio, calculated as (book value per share/year-end market price)
DP	Dividend yield, calculated as (dividends per share/year-end market price)
RET	Total one-year raw return (including all dividends and other distributions)
BIG5	Indicator variable equal to 1 if the firm's auditor is one of the Big 5 (or their predecessors)

All variables except DSI are measured annually between the years 1989 and 1999. DSI is only available for the latest year in the sample; this value is applied to each year the firm is in the sample. DIH, PIH, and LNIIH are obtained from the Thompson Financial Spectrum Database of institutional holdings. This database has all of the quarterly holdings of US institutional investors required to file a SEC form 13-f. In about 10% of the cases, market value data is not available for the computation of PIH and total shares outstanding is used instead (which is an approximation in the case of multiple share classes). For another 5% of the observations, total shares outstanding is also not available and PIH is coded as missing. In all cases, appropriate adjustments are made for the market value of ADR share classes. NAL is obtained from the I/B/E/S database of analyst forecasts. ADR listings are obtained from the Bank of New York website. All other variables are collected from the Worldscope database. These variables are defined by Worldscope, which, similar to other commercial databases, occasionally makes slight adjustments in certain countries or industries to properly incorporate country-specific differences in accounting practices.

**Table 2**  
Descriptive Statistics

<i>Panel A: Means and Medians</i>			NIH = 0	NIH > 0	Diff	No ADR	ADR	Diff
Variable		Full Sample						
DIH	Mean	0.054	0.000	1.000	n/a	0.040	0.874	**
	Median	0.000	0.000	1.000	n/a	0.000	1.000	**
NIH	Mean	1.115	0.000	20.698	n/a	0.480	38.076	**
	Median	0.000	0.000	4.000	n/a	0.000	16.000	**
PIH	Mean	0.002	0.000	0.034	n/a	0.001	0.055	**
	Median	0.000	0.000	0.003	n/a	0.000	0.013	**
RATIO1	Mean	0.421	0.413	0.549	**	0.418	0.570	**
	Median	0.385	0.385	0.538	**	0.385	0.538	**
RATIO2	Mean	0.712	0.707	0.787	**	0.710	0.800	**
	Median	0.714	0.714	0.800	**	0.714	0.800	**
ADR	Mean	0.017	0.002	0.274	**	0.000	1.000	n/a
	Median	0.000	0.000	0.000	**	0.000	1.000	n/a
ADRTIME	Mean	0.027	0.001	0.483	**	0.000	1.621	**
	Median	0.000	0.000	0.000	**	0.000	1.609	**
DSI	Mean	0.523	0.504	0.856	**	0.515	0.978	**
	Median	1.000	1.000	1.000	**	0.000	1.000	**
USSALES	Mean	0.011	0.009	0.031	**	0.010	0.043	**
	Median	0.000	0.000	0.000	**	0.000	0.000	**
NAL	Mean	5.842	5.277	15.767	**	5.674	15.594	**
	Median	3.000	3.000	15.000	**	3.000	15.000	**
LMVUS	Mean	5.162	5.035	7.389	**	5.120	7.561	**
	Median	5.183	5.081	8.062	**	5.148	8.276	**
SGR	Mean	0.102	0.101	0.113	**	0.101	0.148	**
	Median	0.058	0.057	0.075	**	0.057	0.095	**
ROE	Mean	0.084	0.083	0.112	**	0.084	0.133	**
	Median	0.076	0.075	0.105	**	0.075	0.124	**
DTA	Mean	0.246	0.245	0.259	**	0.246	0.259	**
	Median	0.222	0.221	0.251	**	0.222	0.252	**
EP	Mean	0.029	0.029	0.038	**	0.029	0.045	**
	Median	0.043	0.043	0.047	**	0.043	0.050	**
BP	Mean	0.858	0.868	0.685	**	0.862	0.646	**
	Median	0.666	0.677	0.529	**	0.670	0.507	**
DP	Mean	0.021	0.021	0.022	*	0.021	0.022	*
	Median	0.016	0.015	0.018	**	0.015	0.019	**
RET	Mean	0.070	0.067	0.123	**	0.068	0.202	**
	Median	0.011	0.007	0.073	**	0.009	0.146	**
BIG5	Mean	0.693	0.682	0.886	**	0.689	0.947	**
	Median	1.000	1.000	1.000	**	1.000	1.000	**
Number of firm-years		89,078	84,280	4,798		87,573	1,505	
Number of firms		12,934	11,952	982		12,628	306	

\*\* , \* Subsamples significantly different from zero at the 0.01, 0.05 level, respectively (two-tailed).

**Table 2 (continued)**  
Descriptive Statistics

*Panel B: Descriptive Statistics by Country*

	N	Means					Standard Deviation			
		DIH	NIH	PIH	ADR	DSI	RATIO1	RATIO2	RATIO1	RATIO2
Argentina	216	0.301	11.171	0.028	0.125	0.296	0.382	0.789	0.136	0.160
Australia	2661	0.123	1.559	0.003	0.039	0.179	0.423	0.730	0.137	0.152
Austria	753	0.037	0.070	0.000	0.000	0.101	0.366	0.741	0.188	0.186
Belgium	1209	0.010	0.024	0.000	0.000	0.009	0.407	0.775	0.196	0.201
Brazil	934	0.073	0.988	0.003	0.022	0.202	0.443	0.735	0.126	0.105
Chile	525	0.173	4.392	0.011	0.152	0.276	0.499	0.784	0.154	0.131
China	385	0.078	0.436	0.001	0.026	0.096	0.452	0.861	0.107	0.113
Columbia	146	0.089	0.664	0.002	0.068	0.205	0.376	0.719	0.142	0.158
Czech	181	0.033	0.116	0.001	0.000	0.033	0.367	0.673	0.148	0.196
Denmark	1725	0.014	0.467	0.001	0.006	0.009	0.343	0.639	0.147	0.169
Egypt	11	0.364	0.818	0.013	0.000	0.636	0.189	0.522	0.126	0.260
Finland	899	0.053	1.584	0.003	0.026	0.065	0.396	0.681	0.161	0.171
France	5844	0.034	0.728	0.001	0.013	0.051	0.451	0.764	0.189	0.184
Germany	4885	0.036	0.476	0.000	0.002	0.045	0.396	0.778	0.173	0.157
Greece	837	0.005	0.125	0.000	0.004	0.018	0.211	0.730	0.098	0.215
Hong Kong	2296	0.121	0.887	0.001	0.002	0.180	0.395	0.662	0.116	0.116
Hungary	115	0.130	1.478	0.003	0.017	0.270	0.352	0.739	0.258	0.264
India	1719	0.049	0.167	0.001	0.002	0.113	0.236	0.507	0.097	0.147
Ireland	629	0.084	3.132	0.011	0.083	0.137	0.349	0.627	0.118	0.125
Indonesia	702	0.017	0.479	0.000	0.010	0.026	0.482	0.848	0.157	0.130
Israel	156	0.333	8.833	0.044	0.115	0.269	0.590	0.896	0.143	0.061
Italy	2114	0.051	0.461	0.000	0.016	0.063	0.559	0.804	0.144	0.117
Japan	22605	0.044	0.345	0.000	0.010	0.070	0.476	0.706	0.170	0.190
Luxembourg	151	0.113	2.755	0.008	0.033	0.060	0.324	0.724	0.205	0.230
Mexico	586	0.353	11.454	0.027	0.193	0.454	0.403	0.712	0.133	0.128
Morocco	8	0.125	0.125	0.000	0.000	0.125	0.288	0.714	0.178	0.120
Malaysia	2634	0.023	0.052	0.000	0.000	0.042	0.470	0.711	0.122	0.096
Norway	1070	0.064	1.377	0.005	0.029	0.101	0.400	0.760	0.170	0.170
Netherlands	1744	0.127	8.596	0.010	0.054	0.153	0.423	0.730	0.156	0.163
New Zealand	436	0.057	1.528	0.002	0.023	0.055	0.478	0.814	0.125	0.129
Pakistan	485	0.000	0.000	0.000	0.000	0.016	0.286	0.620	0.097	0.158
Peru	156	0.167	4.615	0.011	0.038	0.250	0.350	0.711	0.150	0.159
Philippines	547	0.084	1.272	0.005	0.015	0.168	0.458	0.941	0.140	0.109
Poland	179	0.067	0.196	0.001	0.000	0.112	0.380	0.819	0.167	0.149
Portugal	548	0.044	1.192	0.003	0.031	0.044	0.421	0.707	0.176	0.200
Russia	39	0.333	4.179	0.016	0.103	0.333	0.201	0.614	0.207	0.393
South Africa	1802	0.099	0.860	0.002	0.022	0.148	0.360	0.677	0.132	0.121
South Korea	1831	0.018	0.535	0.001	0.007	0.067	0.483	0.640	0.132	0.125
Slovakia	38	0.053	0.132	0.000	0.000	0.132	0.306	0.699	0.229	0.192
Singapore	1468	0.037	0.373	0.002	0.000	0.069	0.475	0.719	0.133	0.103
Spain	1467	0.051	2.607	0.002	0.014	0.059	0.429	0.734	0.168	0.175

**Table 2 (continued)**  
Descriptive Statistics

*Panel B: Descriptive Statistics by Country (continued)*

	N	Means					Standard Deviation			
		DIH	NIH	PIH	ADR	DSI	RATIO1	RATIO2	RATIO1	RATIO2
Sri Lanka	76	0.013	0.013	0.000	0.000	0.066	0.350	0.652	0.149	0.187
Sweden	1532	0.061	1.751	0.003	0.031	0.081	0.311	0.719	0.166	0.188
Switzerland	1887	0.022	0.619	0.000	0.008	0.055	0.432	0.679	0.256	0.242
Taiwan	1018	0.041	0.337	0.000	0.009	0.116	0.576	0.935	0.104	0.103
Thailand	1340	0.009	0.129	0.002	0.000	0.037	0.363	0.897	0.138	0.154
Turkey	339	0.012	0.027	0.000	0.000	0.103	0.192	0.618	0.150	0.288
U.K.	16041	0.051	1.682	0.002	0.021	0.061	0.352	0.635	0.104	0.111
Venezuela	84	0.345	4.155	0.009	0.024	0.702	0.524	0.856	0.127	0.115
Zimbabwe	25	0.000	0.000	0.000	0.000	0.000	0.357	0.690	0.138	0.156
Min	8	0.000	0.000	0.000	0.000	0.000	0.189	0.507	0.097	0.061
Max	22605	0.364	11.454	0.044	0.193	0.702	0.590	0.941	0.258	0.393

*Panel C: Correlation Matrix*

	LNIH	PIH	RATIO1	RATIO2	ADR-	ADR-	US-	US-	US-	US-	US-	US-	US-	US-	US-	US-	US-	US-
	LNIH	PIH	RATIO1	RATIO2	ADR	TIME	DSI	SALES	LNAL	LMVUS	SGR	ROE	DTA	EP	BP	DP	RET	BIG5
LNIH	1	0.55	0.18	0.09	0.62	0.57	0.13	0.05	0.20	0.28	0.01	0.05	0.03	0.01	-0.09	-0.01	0.04	0.09
PIH	0.99	1	0.08	0.05	0.31	0.26	0.04	0.02	0.04	0.08	0.03	0.03	0.01	0.00	-0.04	-0.02	0.02	0.04
RATIO1	0.17	0.17	1	0.70	0.13	0.12	0.19	0.09	0.33	0.31	0.04	0.04	0.12	0.00	-0.09	-0.04	0.03	0.09
RATIO2	0.10	0.10	0.69	1	0.07	0.07	0.07	0.05	0.16	0.16	0.04	0.01	0.08	-0.01	-0.02	-0.02	0.01	0.06
ADR	0.49	0.48	0.11	0.07	1	0.80	0.12	0.04	0.12	0.18	0.02	0.03	0.02	0.01	-0.05	-0.01	0.03	0.07
ADRTIME	0.47	0.46	0.10	0.06	0.88	1	0.10	0.04	0.11	0.16	0.00	0.02	0.01	0.01	-0.04	-0.01	0.02	0.06
DSI	0.16	0.16	0.18	0.06	0.12	0.11	1	0.02	0.28	0.40	0.03	0.10	-0.03	0.06	-0.15	0.00	0.08	0.10
USSALES	0.05	0.05	0.08	0.05	0.04	0.04	0.02	1.00	0.07	0.07	0.00	0.02	0.01	0.00	-0.02	0.00	0.00	0.02
LNAL	0.23	0.23	0.32	0.15	0.13	0.11	0.31	0.06	1	0.60	0.03	0.17	0.02	0.09	-0.22	0.07	0.06	0.09
LMVUS	0.28	0.28	0.30	0.16	0.16	0.14	0.42	0.06	0.62	1	0.10	0.27	-0.05	0.18	-0.37	0.04	0.22	0.17
SGR	0.02	0.02	0.06	0.05	0.02	0.01	0.06	0.00	0.08	0.14	1	0.24	0.01	0.16	-0.14	-0.02	0.18	0.00
ROE	0.05	0.04	0.06	0.01	0.04	0.03	0.10	0.02	0.21	0.27	0.30	1	-0.22	0.73	-0.33	0.29	0.31	0.01
DTA	0.04	0.04	0.15	0.08	0.02	0.02	-0.02	0.02	0.04	-0.05	0.00	-0.20	1	-0.22	0.07	-0.12	-0.11	0.00
EP	-0.02	-0.02	0.00	-0.01	-0.01	-0.01	0.01	0.01	0.07	0.05	0.16	0.67	-0.17	1	-0.11	0.45	0.22	-0.02
BP	-0.10	-0.09	-0.10	-0.02	-0.06	-0.05	-0.14	-0.02	-0.24	-0.35	-0.19	-0.42	0.02	0.07	1	0.08	-0.32	-0.04
DP	0.00	0.00	-0.02	-0.02	-0.01	-0.01	0.00	0.00	0.07	0.04	0.00	0.26	-0.11	0.53	0.16	1	-0.02	0.00
RET	0.04	0.04	0.02	0.01	0.03	0.03	0.09	0.00	0.07	0.23	0.21	0.31	-0.11	0.12	-0.31	-0.02	1	0.00
BIG5	0.10	0.10	0.09	0.05	0.07	0.07	0.10	0.02	0.10	0.16	0.01	0.01	0.00	-0.01	-0.04	0.00	0.00	1

Panel A presents means and medians of all variables defined in Table 1. The Full Sample includes all firms with nonmissing Worldscope data for all of the variables obtained from that source. Any observation not found on Spectrum or I/B/E/S is assumed to have zero US institutional ownership or analyst following, respectively. The “NIH=0” (“NIH > 0”) column represents the subsample of firms with zero (nonzero) ownership by US institutional investors. The “No ADR” (“ADR”) column represents the subsample of firms without (with) an ADR listed on a US exchange (i.e. level II or III ADR). The “Diff” column indicates whether the means or medians are significantly different from each other across the two subsamples. The significance test is two-tailed and is based on a t-statistic for the means and a z-statistic for the medians. Panel B presents the number (N) of firm-year observations from each country in the full sample as well as means for each of the variables listed in the top row. Panel C presents correlations among the variables defined in Table 1. Pearson (Spearman) correlations are reported above (below) the diagonal. Because the full sample has 89,078 observations, all correlation coefficients greater than 0.01 in absolute value are significantly different from zero at or below the 0.05 level.

**Table 3**

Regression of US Institutional Ownership on US GAAP Conformity Ratios and Control Variables

$$IH_{it} = \alpha_t + \beta_{1t}RATIO_{it} + \beta_{2t}ADR_{it} + \beta_{3t}ADRTIME_{it} + \beta_{4t}DSI_{it} + \beta_{5t}USSALES_{it} + \beta_{6t}LNAL_{it} + \beta_{7t}LMVUS_{it} + \beta_{8t}SGR_{it} + \beta_{9t}ROE_{it} + \beta_{10t}DTA_{it} + \beta_{11t}EP_{it} + \beta_{12t}BP_{it} + \beta_{13t}DP_{it} + \beta_{14t}RET_{it} + \beta_{15t}BIG5_{it} + \varepsilon_t$$

	Full Sample						Restricted Sample			
	DIH		LNIH		PIH		LNIH		PIH	
INTERCEPT	-5.2540***	-5.2689***	0.0417***	0.0395***	0.0008**	0.0008**	0.4086***	0.4129***	0.0270*	0.0277**
RATIO1	1.5343***		0.1226**		0.0052***		0.9884***		0.0809***	
RATIO2		1.2216***		0.0305**		0.0032***		0.8279***		0.0798***
ADR	4.2723***	4.2863***	1.9383***	1.9422***	0.0467***	0.0468***	1.0307***	1.0352***	0.0366**	0.0365**
ADRTIME	1.8593***	1.8642***	0.2797***	0.2823***	0.0011***	0.0012***	-0.0389	-0.0319	-0.0013	-0.0005
DSI	0.1008	0.1246	-0.0297***	-0.0278***	-0.0008***	-0.0007***	-0.4331***	-0.4332***	-0.0264**	-0.0264**
USSALES	0.3071	0.3732	0.0826**	0.0904**	0.0017	0.0020	0.1060	0.1137	0.0032	0.0035
LNAL	0.2364***	0.2725***	0.0121***	0.0152***	-0.0005*	-0.0004	-0.0114	0.0059	-0.0159***	-0.0145***
LMVUS	0.7699***	0.7803***	0.0426***	0.0441***	0.0004***	0.0005***	0.3254***	0.3409***	-0.0053	-0.0040
SGR	-0.2945	-0.3148	-0.0160**	-0.0154**	0.0015**	0.0015**	0.1138	0.1211*	0.0334***	0.0348***
ROE	0.5691***	0.5582***	0.1215***	0.1220***	0.0059***	0.0059***	1.6302***	1.6795***	0.0917***	0.0974***
DTA	0.0051***	0.0060***	0.0003***	0.0004***	0.0000	0.0000	-0.0038***	-0.0035***	-0.0001	-0.0001
EP	-1.2943**	-1.2376**	-0.1653***	-0.1644***	-0.0056***	-0.0056***	-1.8081**	-1.8554**	-0.0387	-0.0443
BP	0.1360	0.1312	0.0114**	0.0118**	0.0000	0.0000	0.1768	0.1943	0.0005	0.0018
DP	-1.5101	-1.9047	-0.0423	-0.0850	-0.0212***	-0.0227***	-6.3687**	-6.4710**	-0.5945**	-0.6057**
RET	-0.4157***	-0.4191***	-0.0140**	-0.0146**	-0.0005**	-0.0005**	-0.0494	-0.0496	-0.0047	-0.0051
BIG5	0.5661***	0.5864***	0.0171***	0.0182***	0.0004**	0.0004**	0.0287	0.0284	0.0054	0.0053

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for RATIO1 and RATIO2, two-tailed for other variables).

This table presents results from regressions of US institutional ownership variables (DIH, LNIH, PIH) on US GAAP conformity ratios and control variables. All variables are defined in Table 1. All continuous variables are adjusted for the median value of the variable in the firm's country. Logistic (OLS) regressions are used when DIH (LNIH, PIH) is the dependent variable. Regressions are estimated for each year in the sample (1989-99) and mean coefficients are reported for each variable. Significance tests are based on a standard error computed from the distribution of yearly coefficients, adjusted for serial correlation. One-tailed tests are used to test the significance of the hypothesized positive sign on RATIO1 and RATIO2. Two-tailed tests are used for all of the control variables. The Full Sample (89,078 observations) includes all firms with nonmissing Worldscope data for all of the variables obtained from that source. Any observation not found on Spectrum or I/B/E/S is assumed to have zero US institutional ownership or analyst following, respectively. The Restricted Sample (4,798) only includes firms with at least one US institutional owner.

**Table 4**

Regression of Changes in US Institutional Ownership on Changes in US GAAP Conformity Ratios and Control Variables

$$CIH_{it} = \alpha_t + \beta_{1t} CRATIO_{it} + \beta_{2t} CADR_{it} + \beta_{3t} ADRTIME_{it-1} + \beta_{4t} DIH_{it} + \beta_{5t} CUSSALES_{it} + \beta_{6t} CLNAL_{it} + \beta_{7t} CLMVUS_{it} + \beta_{8t} CSGR_{it} + \beta_{9t} CROE_{it} + \beta_{10t} CDTA_{it} + \beta_{11t} CEP_{it} + \beta_{12t} CBP_{it} + \beta_{13t} CDP_{it} + \beta_{14t} CRET_{it} + \beta_{15t} CBIG5_{it} + \beta_{16t} CSHARES_{it} + \varepsilon_t$$

Panel A: Continuous Change in Conformity Ratios

	Full Sample				Restricted Sample			
	CLNIH		CPIH		CLNIH		CPIH	
INTERCEPT	-0.0016	-0.0018*	0.0000	0.0000	0.2241**	0.2228**	0.0010	0.0012
CRATIO1	0.0133**		0.0007***		0.4084		0.0119***	
CRATIO2		0.0131**		0.0005**		0.4219*		0.0091**
CADR	-0.0368	-0.0354	-0.0012	-0.0012	0.0377	0.0306	-0.0026	-0.0026
ADRTIME	-0.0554***	-0.0531***	-0.0005**	-0.0004	-0.0435*	-0.0407	-0.0004	-0.0004
DIH	0.2945***	0.2922***	0.0015	0.0016				
CUSSALES	-0.0021	-0.0020	-0.0004	-0.0004	-0.0122	-0.0094	-0.0014	-0.0015
CLNAL	0.0057***	0.0059***	0.0000	0.0000	0.1876***	0.1956***	-0.0003	0.0013
CLMVUS	0.0095***	0.0100***	0.0004***	0.0004***	0.2219***	0.2293***	0.0061***	0.0067***
CSGR	-0.0016	-0.0014	0.0000	0.0001	-0.0715	-0.0507	0.0005	0.0014
CROE	0.0000	-0.0013	-0.0004*	-0.0004*	0.2499	0.2281	-0.0052*	-0.0032
CDTA	0.0000	0.0000	0.0000**	0.0000***	0.0002	-0.0003	0.0001**	0.0001**
CEP	-0.0001	-0.0008	-0.0005**	-0.0004	-0.2060	-0.4409	-0.0129***	-0.0162***
CBP	0.0040**	0.0043**	0.0001	0.0001	0.1757**	0.1720**	0.0034	0.0031
CDP	-0.0331	-0.0237	0.0048**	0.0048**	-2.1431	-1.5049	0.0273	0.0376
CRET	-0.0019	-0.0022	-0.0003***	-0.0003***	-0.0217	-0.0293	-0.0043***	-0.0048***
CBIG5	0.0006	0.0003	-0.0001	-0.0001	-0.0165	-0.0256	-0.0006	-0.0010
CSHARES	0.0142	0.0126	0.0003	0.0003	0.2954	0.1648	0.0167	0.0141

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for CRATIO1 and CRATIO2, two-tailed for other variables).

**Table 4 (continued)**

Regression of Changes in US Institutional Ownership on Changes in US GAAP Conformity Ratios and Control Variables

*Panel B: Piecewise Change in Conformity Ratios*

	Full Sample				Restricted Sample			
	CLNIH		CPIH		CLNIH		CPIH	
INTERCEPT	-0.0019**	-0.0018*	0.0000	0.0000	0.2178**	0.2169**	0.0009	0.0010
CRATIO1 <sup>+</sup>	0.0254***		0.0008***		0.4630		0.0151***	
CRATIO1 <sup>-</sup>	-0.0079		0.0003		0.1483		0.0034	
CRATIO2 <sup>+</sup>		0.0128**		0.0006**		0.4284*		0.0143**
CRATIO2 <sup>-</sup>		-0.0096		0.0000		0.3881		-0.0044
CADR	-0.0356	-0.0340	-0.0012	-0.0012	0.0442	0.0306	-0.0025	-0.0027
ADRTIME	-0.0539***	-0.0515***	-0.0005**	-0.0004	-0.0401	-0.0393	-0.0004	-0.0004
DIH	0.2921***	0.2897***	0.0015	0.0016				
CUSSALES	-0.0017	-0.0015	-0.0004	-0.0004	-0.0122	-0.0109	-0.0014	-0.0013
CLNAL	0.0057***	0.0060***	0.0000	0.0000	0.1891***	0.1931***	-0.0003	0.0013
CLMVUS	0.0092***	0.0098***	0.0004***	0.0004***	0.2137***	0.2249***	0.0060***	0.0066***
CSGR	-0.0020	-0.0017	0.0000	0.0001	-0.0722	-0.0511	0.0005	0.0015
CROE	0.0000	-0.0013	-0.0004*	-0.0004*	0.2550	0.2376	-0.0053*	-0.0037
CDTA	0.0000	0.0000	0.0000**	0.0000***	0.0007	0.0001	0.0001**	0.0001**
CEP	-0.0012	-0.0018	-0.0004**	-0.0004	-0.1821	-0.4638	-0.0122***	-0.0155***
CBP	0.0036**	0.0038**	0.0001	0.0001	0.1784*	0.1680**	0.0036	0.0031
CDP	-0.0237	-0.0153	0.0048**	0.0048**	-2.3168	-1.4661	0.0231	0.0357
CRET	-0.0018	-0.0022	-0.0003***	-0.0003***	-0.0134	-0.0279	-0.0041***	-0.0048***
CBIG5	0.0005	0.0003	-0.0001	-0.0001	-0.0053	-0.0185	-0.0005	-0.0010
CSHARES	0.0139	0.0121	0.0002	0.0003	0.2916	0.1727	0.0166	0.0142

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for CRATIO1 and CRATIO2, two-tailed for other variables).

This table presents results from regressions of changes in US institutional ownership variables (CLNIH, CPIH) on changes in US GAAP conformity ratios and control variables. All variables (except DIH) are one-year changes in the variables defined in Table 1. CRATIO<sup>+</sup> (CRATIO<sup>-</sup>) equals CRATIO if it is positive (nonpositive) and zero otherwise. All continuous variables are adjusted for the median value of the variable in the firm's country. Regressions are estimated for each year in the sample (1989-99) and mean coefficients are reported for each variable. Significance tests are based on a standard error computed from the distribution of yearly coefficients, adjusted for serial correlation. One-tailed tests are used to test the significance of the hypothesized positive sign on CRATIO1 and CRATIO2. Two-tailed tests are used for all of the control variables. The Full Sample (79,644 observations) includes all firms with nonmissing Worldscope data for all of the variables obtained from that source. Any observation not found on Spectrum or I/B/E/S is assumed to have zero US institutional ownership or analyst following, respectively. The Restricted Sample (4,616 observations) only includes firms with at least one US institutional owner.

**Table 5****Lead-Lag Regressions of Changes in US Institutional Ownership on Changes in US GAAP Conformity Ratios and Control Variables**

<i>Panel A: Future Changes in Institutional Ownership</i>					<i>Panel B: Future Changes in Conformity Ratios</i>				
	FCLNIH		FCPIH			FCRATIO1		FCRATIO2	
INTERCEPT	0.0075***	0.0078***	0.0000	0.0000	INTERCEPT	0.0116***	0.0116***	0.0104***	0.0104***
CRATIO1 <sup>+</sup>	0.0289**		0.0016**		CLNIH <sup>+</sup>	-0.0006		0.0024	
CRATIO1 <sup>-</sup>	-0.0949		-0.0037		CLNIH <sup>-</sup>	0.0035		0.0043	
CRATIO2 <sup>+</sup>		0.0188**		0.0013**	CPIH <sup>+</sup>		-0.1752		-0.1573
CRATIO2 <sup>-</sup>		-0.0228		-0.0001	CPIH <sup>-</sup>		-0.0711		0.0646
CADR	0.1841	0.1843	0.0067	0.0067	CADR	0.0010	0.0000	-0.0015	-0.0020
ADRTIME	0.0388***	0.0389***	0.0001	0.0001	ADRTIME	0.0000	-0.0004	-0.0005	-0.0009
DIH	-0.0241	-0.0238	0.0000	0.0000	DIH	-0.0003	-0.0001	-0.0035	-0.0022
CUSSALES	-0.0016	-0.0016	0.0003	0.0003	CUSSALES	-0.0023	-0.0024	-0.0033**	-0.0035**
CLNAL	0.0071*	0.0072*	0.0000	0.0000	CLNAL	0.0024	0.0023	0.0016	0.0017
CLMVUS	0.0044	0.0044	0.0002	0.0002	CLMVUS	0.0035**	0.0036**	-0.0001	-0.0001
CSGR	0.0021	0.0021	-0.0001	-0.0001	CSGR	0.0000	0.0001	0.0011	0.0011
CROE	0.0210*	0.0206*	0.0003	0.0003	CROE	0.0046	0.0046	0.0072	0.0071
CDTA	0.0001	0.0001	0.0000	0.0000	CDTA	0.0000	0.0000	-0.0001	-0.0001
CEP	-0.0182	-0.0176	0.0005	0.0005	CEP	0.0080**	0.0081**	0.0077	0.0079
CBP	-0.0083***	-0.0083***	-0.0002	-0.0002	CBP	-0.0014	-0.0014	-0.0029	-0.0029
CDP	-0.0376	-0.0372	-0.0007	-0.0007	CDP	0.0184	0.0179	-0.0372*	-0.0383*
CRET	-0.0043*	-0.0044*	0.0000	0.0000	CRET	-0.0018**	-0.0017**	-0.0002	-0.0002
CBIG5	0.0014	0.0016	0.0005**	0.0005**	CBIG5	0.0043**	0.0043**	0.0028	0.0028
CSHARES	-0.0198	-0.0203	-0.0004	-0.0004	CSHARES	0.0003	0.0004	0.0121**	0.0121**

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for CRATIO1 and CRATIO2, two-tailed for other variables).

Panel A of the table presents results from regressions of one-year-ahead future changes in US institutional ownership variables (FCLNIH, FCPIH) on prior one-year changes in US GAAP conformity ratios and control variables. Panel B of the table presents results from regressions of one-year ahead future changes in US GAAP conformity ratios (FCRATIO1, FCRATIO2) on prior one-year changes in US institutional ownership and control variables. All variables are one-year changes in the variables defined in Table 1. CRATIO<sup>+</sup> (CRATIO<sup>-</sup>) equals CRATIO if it is positive (nonpositive) and zero otherwise. All continuous variables are adjusted for the median value of the variable in the firm's country. Regressions are estimated for each year in the sample (1989-99) and mean coefficients are reported for each variable. Significance tests are based on a standard error computed from the distribution of yearly coefficients, adjusted for serial correlation. One-tailed tests are used to test the significance of the hypothesized positive sign on CRATIO1 and CRATIO2 variables. Two-tailed tests are used for all of the control variables. The regressions are estimated for the Full Sample (67,264 observations), which includes all firms with nonmissing Worldscope data for all of the variables obtained from that source.



**Table 6**

Industry-adjusted Regressions of US Institutional Ownership on US GAAP Conformity Ratios and Control Variables in Full Sample

	Levels (Tbl. 3)			Contemporary Changes (Tbl. 4)		Lead-Lag Changes (Tbl. 5)	
	LNIH	PIH		CLNIH	CPIH	FCLNIH	FCPIH
INTERCEPT	0.0424***	0.0006**	INTERCEPT	-0.0026*	0.0000	0.0072***	0.0000
RATIO1	0.0664***	0.0029**	CRATIO1 <sup>+</sup>	0.0289***	0.0009***	0.0291***	0.0017***
ADR	1.8930***	0.0438***	CRATIO1 <sup>-</sup>	-0.0169	-0.0001	-0.0348	-0.0015
ADRTIME	0.5773***	0.0043***	CADR	-0.0375	-0.0012	0.1812	0.0067
DSI	-0.0353***	-0.0008***	ADRTIME	-0.0543***	-0.0005**	0.0391***	0.0001
USSALES	0.0789**	0.0018	DIH	0.2926***	0.0015	-0.0246	0.0000
LNAL	0.0243***	-0.0002	CUSSALES	-0.0016	-0.0004	-0.0018	0.0003
LMVUS	0.0339***	0.0003**	CLNAL	0.0069**	0.0000	0.0101***	0.0001**
SGR	0.0004	0.0018*	CLMVUS	0.0105***	0.0003***	0.0084*	0.0002
ROE	0.1535***	0.0065***	CSGR	-0.0032	0.0000	0.0006	-0.0001
DTA	-0.0001	0.0000	CROE	-0.0012	-0.0004*	0.0200*	0.0003
EP	-0.2104***	-0.0059***	CDTA	0.0001	0.0000**	0.0001	0.0000
BP	0.0255***	0.0005**	CEP	-0.0043	-0.0004*	-0.0221	0.0004
DP	0.5473***	-0.0133**	CBP	0.0047***	0.0001	-0.0049	-0.0002
RET	0.0009	0.0000	CDP	-0.0115	0.0037**	-0.0145	-0.0007
BIG5	0.0108***	0.0004***	CRET	-0.0019	-0.0003***	-0.0046**	0.0001
			CBIG5	0.0005	-0.0001	0.0013	0.0005**
			CSHARES	0.0119	0.0002	-0.0224	-0.0004
RATIO2	0.0381*	0.0046**	CRATIO2 <sup>+</sup>	0.0137**	0.0007***	0.0168*	0.0011**
			CRATIO2 <sup>-</sup>	-0.0007	-0.0010	-0.0175	-0.0002

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for RATIO variables, two-tailed for other variables).

This table presents results from regressions of US institutional ownership variables on US GAAP conformity ratios and control variables with all continuous variables adjusted for the median value of the variable in the firm's industry, defined with 2-digit SIC codes. No adjustment is made for the firm's country. LNIH, CLNIH, and FCLNIH (PIH, CPIH, FCPIH) are the level, one-year change, and future one-year change in the log number of institutional investors (percent of institutional ownership), respectively. All variables are defined in Table 1, and all variables starting with "C" are one-year changes in the variables. CRATIO<sup>+</sup> (CRATIO<sup>-</sup>) equals CRATIO if it is positive (nonpositive) and zero otherwise. Regressions are estimated for each year in the sample (1989-99) and mean coefficients are reported for each variable. Significance tests are based on a standard error computed from the distribution of yearly coefficients, adjusted for serial correlation. One-tailed tests are used to test the significance of the hypothesized positive sign on RATIO1, RATIO2, and the CRATIO variables. Two-tailed tests are used for all of the control variables. The Full Sample includes all firms with nonmissing Worldscope data for all of the variables obtained from that source. Any observation not found on Spectrum or I/B/E/S is assumed to have zero US institutional ownership or analyst following, respectively. The sample sizes are as follows: 89,078 observations in the levels test, 79,644 observations in the contemporaneous changes test, and 67,264 observations in the lead-lag changes test.

**Table 7**

Regressions of US Institutional Ownership on US GAAP Conformity Ratios and Control Variables in Firm Visibility Subsamples

	<i>Panel A: Partition based on ADR listing</i>						<i>Panel B: Partition based on Stock Index membership</i>					
	LNIH			PIH			LNIH			PIH		
	ADR	NO ADR	DIFF	ADR	NO ADR	DIFF	INDEX	NO INDEX	DIFF	INDEX	NO INDEX	DIFF
INTERCEPT	2.5083**	0.0484***	**	0.1886*	0.0007***	*	-0.0133***	0.0440***	***	0.0001	0.0008**	***
RATIO1	2.1342***	0.1453***	***	0.1165***	0.0036***	***	0.1744***	0.0761***	***	0.0073***	0.0034**	***
ADR							1.8780***	2.0624**		0.0428***	0.1873*	
ARDTIME							0.5872***	0.2823***	***	0.0038***	0.0016**	
DSI	-1.0687*	-0.0125***	*	-0.1499*	-0.0005***	*						
USSALES	0.1148	0.0981**		0.0022	0.0020		0.0775**	0.1099		0.0010	0.0035	
LNAL	-0.0849	0.0161***		-0.0204***	-0.0003*	***	0.0107***	0.0099***		-0.0007***	-0.0005	
LMVUS	0.3209***	0.0489***	***	0.0063	0.0005***		0.0559***	0.0308***	**	0.0004*	0.0005***	
SGR	-0.3970*	-0.0249***	*	0.0427*	0.0004**	*	-0.0182	-0.0189**		0.0020**	0.0007	
ROE	1.8309**	0.0597***	**	0.1435**	0.0029***	**	0.1018***	0.1326***		0.0070***	0.0039***	***
DTA	-0.0127**	0.0005***	**	-0.0001	0.0000		0.0003***	0.0002		0.0000	0.0000	
EP	-1.7337*	-0.1104***	*	-0.1452**	-0.0029***	**	-0.1843***	-0.1469***		-0.0099***	-0.0024*	**
BP	0.1132	0.0152***		-0.0027	0.0001		0.0197**	0.0050*	*	0.0000	0.0000	
DP	2.4292	-0.1382		-0.7696*	-0.0093***	*	0.2220	-0.2545**		-0.0199*	-0.0191***	
RET	-0.2746*	-0.0166***	*	-0.0150*	-0.0004*	*	-0.0112	-0.0178**		-0.0005	-0.0004	
BIG5	0.0270	0.0188***		-0.0105	0.0005***		0.0333***	0.0077***	***	0.0003*	0.0004**	
RATIO2	1.6275**	0.0567**	**	0.1004***	0.0027***	***	0.0554**	0.0270**	**	0.0037***	0.0031**	

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for RATIO1 and RATIO2, two-tailed for other variables).

**Table 7 (continued)**

Regressions of US Institutional Ownership on US GAAP Conformity Ratios and Control Variables in Firm Visibility Subsamples

	<i>Panel C: Partition based on Analyst Following</i>						<i>Panel D: Partition based on Firm Size</i>					
	LNIH			PIH			LNIH			PIH		
	HIGH	LOW	DIFF	HIGH	LOW	DIFF	LARGE	SMALL	DIFF	LARGE	SMALL	DIFF
INTERCEPT	0.0827	0.0208***		0.0070	0.0006***		-0.1836	0.0167***		0.0018	0.0006***	
RATIO1	0.6872***	0.0566***	***	0.0218***	0.0035***	***	0.7211***	0.0329***	***	0.0301**	0.0029***	**
ADR	1.9335***	1.6858***	**	0.0458***	0.0463***		1.8431***	1.6438***	***	0.0354***	0.0594***	***
ARDTIME	0.3572***	0.2325***	**	0.0011	0.0010***		0.2573***	0.2401***		-0.0002	0.0037***	*
DSI	-0.1559*	-0.0096***	*	-0.0034**	-0.0006**	**	-0.1189	-0.0082***		-0.0022	-0.0007***	
USSALES	0.1731	0.0371**		0.0000	0.0024		0.3132**	0.0270	**	0.0057	0.0006	
LNAL	-0.0846***	-0.0033	***	-0.0041***	-0.0006*	***	0.0758***	0.0023	***	-0.0039	-0.0003***	
LMVUS	0.1763***	0.0207***	***	0.0015*	0.0002*		0.1357*	0.0138***		0.0015	0.0002***	
SGR	-0.0701	0.0023		0.0030	0.0015*		-0.0718	0.0040		0.0051	0.0012***	
ROE	1.0002***	0.0127	***	0.0413***	0.0023*	***	1.6001***	0.0162***	***	0.0507***	0.0029***	***
DTA	0.0005	0.0002***		0.0000	0.0000		-0.0004	0.0002***		0.0000	0.0000	
EP	-1.3448***	-0.0383***	***	-0.0478***	-0.0019	***	-1.7945***	-0.0439***	***	-0.0788***	-0.0020***	***
BP	0.0897	0.0008		0.0033***	-0.0002	***	0.0039	0.0005		-0.0020	0.0000	
DP	1.4641	-0.0657		-0.0465***	-0.0167***	**	5.2194**	-0.0842	**	0.0233	-0.0186***	
RET	-0.0219	-0.0129***		-0.0005	-0.0005		-0.0622	-0.0142***		-0.0022*	-0.0004*	
BIG5	0.0526**	0.0106***	*	-0.0007	0.0003*		0.1455***	0.0103***	***	-0.0003	0.0004*	
RATIO2	0.3525**	0.0299***	**	0.0178***	0.0025***	***	0.3207***	0.0180***	***	0.0199**	0.0023***	**

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for RATIO1 and RATIO2, two-tailed for other variables).

This table presents results from regressions of US institutional ownership variables (LNIH, PIH) on US GAAP conformity ratios and control variables. All variables are defined in Table 1. All continuous variables are adjusted for the median value of the variable in the firm's country. Regressions are estimated for each year in the sample (1989-99) and mean coefficients are reported for each variable. Significance tests are based on a standard error computed from the distribution of yearly coefficients, adjusted for serial correlation. One-tailed tests are used to test the significance of the hypothesized positive sign on RATIO1 and RATIO2. Two-tailed tests are used for all of the control variables. The "DIFF" column presents tests of significant differences between coefficients across the two subsamples, based on the distribution of coefficients from yearly SUR regressions. Only the coefficients on the RATIO2 variable are reported for regressions using that variable; coefficients on all other variables are similar to the reported RATIO1 specification. All regressions are estimated on the Full Sample, which includes all firms with nonmissing Worldscope data for all of the variables obtained from that source. Panel A partitions the sample based on firms with exchange-listed ADRs (1505 observations, 306 firms) and firms without such ADRs (87,573 obs, 12,628 firms). Panel B partitions the sample based on firms listed on a stock index (46,601 obs, 6,612 firms) and firms not listed (42,477 obs, 6,322 firms). Panel C partitions the sample based on firms with high analyst following (top decile in each year) (9,385 obs., 2,072 firms) and all other firms (79,693 obs., 12,474 firms). Panel D partitions the sample based on large firms (top decile in each year) (7,336 obs., 1,420 firms) and all other firms (81,742 obs., 12,445 firms).

**Table 8**

Regressions of Number of US Institutional Investors on US GAAP Conformity Ratios and Control Variables in Country Subsamples

	Country Legal Tradition			Country Mean CIFAR Score			Country Variance of RATIO1			Country Earnings Management		
	Code Law	Common Law	DIFF	HIGH	LOW	DIFF	HIGH	LOW	DIFF	HIGH	LOW	DIFF
INTERCEPT	0.0298***	0.0677***	***	0.0743***	0.0314***	***	0.0332***	0.0617***	***	0.0291***	0.0858***	**
RATIO1	0.1315***	0.1472***		0.2268***	0.0951***	***	0.1402***	0.1119**		0.0997***	0.2275***	***
ADR	2.0631***	1.6783***	***	1.7626***	2.1707***	***	2.0500***	1.6593***	**	2.0005***	1.7989***	*
ARDTIME	0.2624***	0.3359***		0.4046***	0.2550***	**	0.2482***	0.3955***	**	0.2682***	0.4196***	
DSI	-0.0189**	-0.0474***	***	-0.0399**	-0.0222***		-0.0215**	-0.0457***	**	-0.0252***	-0.0443**	
USSALES	0.0723*	0.0759		0.0269	0.2316*	**	0.0840*	0.0388		0.0895**	0.0433	
LNAL	0.0121***	0.0083**		0.0078***	0.0116***		0.0101***	0.0123**		0.0148***	0.0119**	
LMVUS	0.0336***	0.0577***	***	0.0580***	0.0291***	***	0.0364***	0.0539***	***	0.0345***	0.0545***	***
SGR	-0.0010	-0.0361**	**	-0.0205**	-0.0039		-0.0086	-0.0227*		-0.0156**	-0.0340**	
ROE	0.0336	0.1771***	***	0.1723***	0.0149	***	0.0606	0.1471***		0.0555*	0.1595***	***
DTA	0.0000**	0.0010***	***	0.0006***	0.0002***	*	0.0001	0.0009***	**	0.0000	0.0012***	***
EP	-0.0862	-0.1953***	***	-0.2111***	-0.0616*	**	-0.1087**	-0.1770***		-0.0673**	-0.1982***	**
BP	0.0156**	0.0006	**	0.0012	0.0135*		0.0192***	-0.0062*	***	0.0113**	0.0089***	
DP	0.2394*	-0.4121	***	-0.4872*	0.5199**	***	0.1607	-0.3044	**	0.0909	-0.5217***	***
RET	-0.0041	-0.0314**		-0.0270**	-0.0055	**	-0.0029	-0.0310**		-0.0008	-0.0282**	**
BIG5	0.0210***	0.0020	***	0.0015	0.0197***	**	0.0223***	0.0019	***	0.0220***	-0.0176***	***
RATIO2	0.0224**	0.0799**	*	0.1036**	0.0172**	*	0.0281*	0.0733**		0.0155*	0.0719***	**

\*\*\*, \*\*, \* Significantly different from zero at the 0.01, 0.05, and 0.10 level, respectively (one-tailed for RATIO1 and RATIO2, two-tailed for other variables).

This table presents results from regressions of the log number of US institutional investors (LNIH) on US GAAP conformity ratios and control variables. All variables are defined in Table 1. All continuous variables are adjusted for the median value of the variable in the firm's country. Regressions are estimated for each year in the sample (1989-99) and mean coefficients are reported for each variable. Significance tests are based on a standard error computed from the distribution of yearly coefficients, adjusted for serial correlation. One-tailed tests are used to test the significance of the hypothesized positive sign on RATIO1 and RATIO2. Two-tailed tests are used for all of the control variables. The "DIFF" column presents tests of significant differences between coefficients across the two subsamples, based on the distribution of coefficients from yearly SUR regressions. Only the coefficients on the RATIO2 variable are reported for regressions using that variable; coefficients on all other variables are similar to the reported RATIO1 specification. All regressions are estimated on the Full Sample, which includes all firms with nonmissing Worldscope data for all of the variables obtained from that source. Panel A partitions the sample based on firms in code law countries (57,310 obs., 8,073 firms) and firms in common law countries (31,768 obs., 4,861 firms), using the La Porta [1998] classification. Panel B partitions the sample based on firms in countries with high mean CIFAR disclosure scores (42,452 obs., 6,815 firms) and firms in countries with low mean CIFAR disclosure scores (35,366 obs., 5,967 firms), using the 1993-95 average scores in Hope [2003b]. Panel C partitions the sample based on firms in countries with a high standard deviation of RATIO1 (46,062 obs., 8,091 firms) and firms in countries with a low standard deviation of RATIO1 (43,016 obs., 10,046 firms). Panel D partitions the sample based on the median country-level aggregate earnings management score reported in Leuz, et al. [2003]. The HIGH (LOW) partition has 46,679 obs. and 6,397 firms (37,613 obs, 5,430 firms); the sample for this test is smaller because the Leuz, et al. score is not available for all countries.