

Capital Market Development and Confidence in Disclosure Quality

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ABSTRACT: Using a survey-based measure that directly captures beliefs about disclosure quality (*SFARS*) in a panel with over 1,000 country-year observations, this study examines macro-level capital market consequences of confidence in disclosure quality. Supporting construct validity, *SFARS* is associated with prior measures of disclosure quality, tends to decline around accounting scandals, and tends to increase around corporate reforms. Evidence from panel regressions controlling for country effects, prior levels of market development, and other plausible determinants suggests that more positive beliefs about disclosure quality are associated with credit market development, but inferences associated with equity market development are sensitive to empirical specification and variable definitions. Additional analyses find little support for the effects of *SFARS* on capital market development varying with other macroeconomic or institutional features.

JEL Classifications: G1; G3; K2; M4.

Keywords: confidence; disclosure quality; international accounting; equity market development; credit market development.

I. INTRODUCTION

The primary goal of securities regulation and enforcement is to facilitate well-developed capital markets that allow for capital allocation and capital formation in a fair, efficient, and transparent manner (IOSCO 2010; SEC 2013). Securities regulators achieve these outcomes in large part by requiring disclosures to increase transparency and promote investor confidence.¹ Arthur Levitt, former chairman of the SEC, links confidence in disclosure quality to capital market development, suggesting that “high quality standards give investors confidence in the credibility of financial reporting—and without investor confidence, markets cannot thrive” (Levitt 1998).

This paper examines the link between confidence in disclosure quality and the degree to which capital markets thrive, focusing on market-level proxies for credit and equity market development. Confidence in disclosure quality is defined as the expectation that firms in general will provide more and/or better information (i.e., information that is more accurate and less biased). This allows market participants to expect lower future uncertainty and information asymmetry, which should increase their willingness to engage in information-sensitive financial transactions, reduce their need to price protect *ex ante*, and

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Supplemental material can be accessed by clicking the link in Appendix B.

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¹ “The laws and rules that govern the securities industry in the United States derive from a simple and straightforward concept: all investors . . . should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the SEC requires public companies to disclose meaningful financial and other information to the public.” (SEC 2013).

facilitate incentive provision and monitoring that enable the separation of ownership and control (Gipper, Leuz, and Maffett 2016; Guiso, Sapienza, and Zingales 2008; Pagano and Roell 1998).

Capital market development depends on aggregate actions taken by market participants. Because economic actions are guided by beliefs, I use a direct measure of beliefs about disclosure quality. Specifically, I use country-year averages of local executives' ratings of the strength of financial auditing and reporting standards (*SFARS*), taken from the World Economic Forum's Executive Opinion Surveys (EOS), as the main proxy for confidence in disclosure quality.²

Two sets of analyses examine the correlates of *SFARS* to establish construct validity. In support of such validity, *SFARS* is positively associated with several previously-used proxies for financial reporting, auditing, and disclosure quality, including the cross-sectional CIFAR index, disclosure indices related to prospectuses and self-dealing transactions, the use of big-N auditors, accruals-based earnings quality proxies, and earnings response coefficients. The second set of analysis proceeds in two steps. First, I estimate a model to predict changes in *SFARS* attributable to prior changes in *SFARS* (e.g., mean reversion), macroeconomic characteristics, and institutional features. Changes in *SFARS* are not conditionally autocorrelated, although they are associated with previous increases in stock market capitalization, decreases in the number of listed firms and stock trading volume, and increases in GDP, GDP growth, and two of six institutional quality proxies examined. After estimating this regression, I searched for events in the country-years with the 55 largest absolute residuals from the regression. The goal was to identify the types of events associated with large "unexpected" changes in *SFARS*. I categorized the events into eight categories and estimated a regression tree to partition the 55 observations in a way that best explained the unexpected changes in *SFARS*. Broadly, large unexpected decreases in *SFARS* are associated with accounting scandals (e.g., Italy's Parmalat scandal of 2003), civil unrest (e.g., Algeria in 2011), other governance changes (e.g., Guatemala's 2004 political transition), and other scandals (e.g., Brazil's 2014 scandal revelations). Large increases are associated with civil calm (e.g., the 2014 reelection of Evo Morales as president of Bolivia), capital market reforms (e.g., Korea's 2006 banking reforms), corporate reforms (e.g., the passage of the Sarbanes-Oxley Act of 2002 in the U.S.), or other events (e.g., Namibian land expropriation in 2004). Changes in foreign direct investment and political stability also help explain large unexpected changes in *SFARS*, conditional on underlying events. Overall, this preliminary analysis implies *SFARS* is a reasonable proxy for confidence in disclosure quality while providing additional evidence on potential drivers of changes in *SFARS*.

In the main analysis examining whether confidence in disclosure quality is associated with capital market development, I use five frequently-used measures of capital market development. These capture equity market size, equity market trading activity, and credit market size (e.g., Acemoglu and Johnson 2005; Djankov, McLiesh, and Shleifer 2007; Levine, Loayza, and Beck 2000; Levine and Zervos 1998). The intersection of *SFARS* and the market development proxies yields a panel of over 1,100 country-year observations over a 15-year period. The broad panel availability of the *SFARS* measure allows this study to examine the incremental association between *SFARS* and future levels of capital market development, controlling for existing levels of market development, country-level effects, global trends, and other features, such as macroeconomic state variables that also vary within-country. Compared to prior studies exploiting mainly cross-sectional variation (Djankov et al. 2007; Spamann 2010), inference based on this incremental association is much less subject to confounds related to reverse causality and omitted country-level factors, although the use of country-year observations limits the inferences to relatively short-window interactions between confidence in disclosure quality and capital market development.

In univariate correlations, *SFARS* is positive and significantly associated with each of the capital market development proxies. However, much of this correlation could be driven by other factors mentioned above. To address potential confounds, I estimate regressions of current capital market development indicators on lagged *SFARS*, lagged levels of capital market development, country and year fixed effects, and current values of macroeconomic and institutional quality proxies (e.g., regulatory quality, the rule of law, and corruption), in both levels and changes, as well as a number of alternative specifications. These regressions show that confidence in disclosure quality is positive and significantly associated with subsequent improvements in credit market size, but associations with subsequent equity market development proxies are sensitive to empirical choices related to variable definitions, sample selection, and the set of control variables included.

The results provide reasonably strong support for prior results indicating a positive relation between disclosure quality and credit market development (Djankov et al. 2007), but only mixed support for prior results showing positive relations between disclosure quality and equity market development (Djankov, La Porta, Lopez-de-Silanes, and Shleifer 2008; La Porta, Lopez-de-Silanes, and Shleifer 2006; La Porta, López-de-Silanes, Shleifer, and Vishny 1998). The lack of a significant association

² The term "auditing and reporting standards" is used because it is consistent with the questions asked in the EOS. It is not meant to refer to specific written standards (e.g., the Financial Accounting Standards Board's Accounting Standards Codification, the International Accounting Standards Board's International Accounting Standards, or Public Company Accounting Oversight Board Auditing Standards). Respondents' perceptions of standards' strength are likely to incorporate general practices and enforcement above and beyond simply the written standards.

between confidence in disclosure quality and equity market capitalization is, however, consistent with recent evidence in [Khan, Li, Rajgopal, and Venkatachalam \(2016\)](#), of a near-zero average effect of FASB standards on affected firms' stock market values.³

Additional analyses examine potential cross-sectional variation in the associations between *SFARS* and capital market development. For instance, background institutions related to the rule of law or minority investor protections can be complementary or substitutive with *SFARS* in facilitating capital market development. I test for interactive effects between *SFARS* and characteristics related to existing capital market development, institutional quality, macroeconomic development, and existing *SFARS*—the latter capturing potential nonlinearities in the main effects of interest. For the most part, coefficients on the interactions between *SFARS* and proxies for these characteristics are not significantly different from zero, suggesting limited interactions between *SFARS* and background market, institutional, or economic characteristics.

II. RELATED LITERATURE AND BACKGROUND

Several studies examine the determinants and implications of disclosure quality (see [Leuz and Wysocki \[2016\]](#) for a review focused on regulation). These studies generally use either specific regulatory changes (e.g., the mandatory adoption of IFRS), firm-level auditor choices (e.g., [Daske, Hail, Leuz, and Verdi 2008](#)), or cross-sectional measures available at a single point in time, including the CIFAR index (e.g., [La Porta et al. 1998](#); [Levine et al. 2000](#)), PwC's Opacity Index ([Gelos and Wei 2005](#)), S&P Transparency scores ([Khanna, Palepu, and Srinivasan 2004](#)), disclosure measures based on disclosures in prospectuses ([La Porta et al. 2006](#)), and disclosure rules promulgated by exchanges ([Frost, Gordon, and Hayes 2006](#)). Many of these studies rely on mechanisms involving improvements in market participants' confidence in disclosure quality, but do not directly examine this mechanism. In contrast, this study focuses on this mechanism but places less emphasis on any particular category of event that may affect such confidence.

Several studies based on cross-sectional regressions have shown that legal protections for investors, accounting and disclosure quality, and resources available to securities regulators are associated with capital market development ([Djankov et al. 2007](#); [Jackson and Roe 2009](#); [La Porta et al. 2006](#); [La Porta et al. 1998](#); [Spamann 2010](#)). As [Holthausen \(2009\)](#) points out, inferring causality from cross-country analyses is difficult because it is impossible to rule out reverse causality. Cross-sectional analyses cannot distinguish disclosure quality facilitating capital market development from disclosure quality emerging as a result of development ([Isidro, Nanda, and Wysocki 2016](#); [Leuz and Wysocki 2016](#)). Furthermore, only so many controls can be included in samples with 30–50 cross-sectional country-level observations, and focusing on samples with only relatively developed capital markets limits the potential to analyze capital markets in smaller, emerging economies that have a large potential to benefit from capital market development.

Addressing concerns related to inferences from purely cross-sectional measures, [Djankov et al. \(2007, 2008\)](#) construct time-varying indices. Their evidence suggests that better information, if available to investors, facilitates capital market development. However, these studies focus on specific types of information availability: the index in [Djankov et al. \(2008\)](#) focuses on disclosure related to specific self-dealing transactions that can allow managers to expropriate value from shareholders and debtors; and the index in [Djankov et al. \(2007\)](#) focuses on the availability of information about firms' and individuals' creditworthiness provided by private credit bureaus and public credit registries. Studies in the accounting and finance literatures also construct country-year and firm-year earnings-based proxies for accounting quality, such as earnings smoothing, earnings predictability, and timely loss recognition ([Bhattacharya, Daouk, and Welker 2003](#); [Leuz, Nanda, and Wysocki 2003](#); [Lang, Lins, and Maffett 2012](#)). [Gipper et al. \(2016\)](#) and [Ghosh and Moon \(2005\)](#) use the magnitude of earnings response coefficients as a proxy for investor confidence in earnings. In contrast, this study uses a proxy that directly captures confidence and is more closely related to firms' periodic reports of ongoing financial performance and condition than the measures from [Djankov and coauthors](#).⁴

Regarding firm-specific outcomes, disclosure quality has been linked to share liquidity, idiosyncratic volatility, and synchronicity ([Christensen, Hail, and Leuz 2016](#); [Daske et al. 2008](#)). Using the adoption of IFRS as a positive shock to disclosure quality, [Leuz and Verrecchia \(2000\)](#) and [Daske et al. \(2008\)](#) show that the adoption of IFRS is associated with increased liquidity, and [Naranjo, Saavedra, and Verdi \(2016\)](#) show IFRS adoption is associated with corporate financing choices.⁵ [Jin and Myers \(2006\)](#) find a negative cross-sectional relation between disclosure transparency and synchronicity, which they argue reflects the degree of firm-specific information in prices ([Morck, Yeung, and Yu 2000](#)).

³ In contrast to [Khan et al. \(2016\)](#), [Bird, Karolyi, and Ruchti \(2016\)](#) find positive aggregate market responses to events related to the introduction of new accounting standards.

⁴ Country-year correlations between *SFARS* and the firm-level proxies for disclosure quality examined in Table 5 are generally stronger and more significant than those between the self-dealing disclosure index and the same disclosure quality proxies (not reported).

⁵ Prior studies disagree about the degree to which IFRS adoption and other shocks are confounded by concurrent institutional changes and reverse causality ([Barth and Israeli 2013](#); [Christensen, Hail, and Leuz 2013](#); [Leuz and Wysocki 2016](#)).

Daske et al. (2008) and Leuz and Wysocki (2008, 2016) highlight the paucity of research relating *market-level* outcomes to disclosure quality. The distinction is important for two reasons. First, market-level outcomes capture externalities potentially omitted from firm-level studies. Second, firm-level outcomes can reflect substitution or transfer effects. In other words, firm-level outcomes related to valuation and capital provision can be driven by reallocation of capital within an economy, while market-level outcomes require aggregate growth. The analysis here helps address this gap in the literature specifically by providing evidence on the associations between confidence in disclosure quality and macro-level capital market development, in a broad sample of countries, while controlling for numerous potentially-confounding sources of variation.

Giannetti and Wang (2016) show that U.S. state-level stock market participation (a facet of market development highlighted by Levitt [1998]) reacts negatively to the revelation of corporate fraud in the state, with households reducing holdings in both fraudulent and non-fraudulent firms. Even households that experienced no direct losses from holding fraudulent firms reduced their holdings. Giannetti and Wang's (2016) evidence gives credence to a causal channel from confidence in disclosure quality to capital market development. They suggest that fraud revelation broadly decreases confidence in the information firms provide, and that this decrease in confidence causes households to divest from stock markets.⁶

Overall, when investors have greater confidence in disclosure quality, they expect better information, which increases their willingness to engage in financial transactions and reduces their need to price protect (Gipper et al. 2016; Guiso et al. 2008). Expectations of better information can reduce perceived uncertainty, potentially leading to less discounting of future risky cash flows. Additionally, greater confidence in disclosure quality can reduce perceived information asymmetry. This suggests a more level playing field between investors and managers, between directors and management, and across investor types. The reduction in perceived information asymmetry can mitigate expected losses due to agency problems and loosen financial constraints caused by investors price protecting.

For creditors, expectations of better contractible information provided by mandatory disclosures can also improve the expected state-contingent allocation of control rights, lowering the need to price protect at origination (Zhang 2008). Lower price protection in credit markets should translate into more loans being granted and expansions in credit markets. For equity-market investors, lower price protection should be associated with more trading activity, because price protection acts as a transaction cost when impounded into bid-ask spreads. Lower price protection should also facilitate higher valuations, access to capital, and public listing. These should all lead to larger domestic stock markets. Based on these mechanisms, consistent with prior literature linking institutional features to capital market development (Djankov et al. 2008; La Porta et al. 2006; La Porta et al. 1998), I hypothesize that confidence in disclosure quality is positively associated with capital market development.

However, the directional implications are not necessarily straightforward. A downside of greater confidence in disclosure quality is that interventions improving such confidence may be costly and impair capital market development. For example, the Sarbanes-Oxley Act of 2002, passed in the wake of the corporate scandals of the early 2000s, imposed significant disclosure and governance requirements on publicly listed firms (Zhang 2007). These costly requirements may have caused some firms to delist, resulting in smaller and less active capital markets. For creditors, private information facilitates relationship-based lending (Dang, Gorton, Holmstrom, and Ordenez 2014; Petersen and Rajan 1994). Interventions that increase confidence in disclosure quality can lower the returns to private information acquisition and make relationship-based lenders less willing to participate. In the short-term at least, this can lead to less credit being provided by banks and other relationship-based creditors.

Furthermore, whether the association is stronger between disclosure confidence and equity or credit market development is an open question. Equity is more information-sensitive than debt, suggesting a stronger relation between disclosure confidence and equity market development. However, equity valuations, the benefit of listing, and the volume of trade depend on expected growth that may not be well captured by corporate disclosures. Collateral valuation and debt covenants can be improved by more informative disclosures, providing a plausibly stronger role for disclosure confidence in credit markets. Furthermore, equity markets may be more prone to short-term booms and busts than credit markets, weakening the time-series associations between disclosure confidence and equity market development relative to credit market development.

⁶ Guiso et al. (2008) show that trust, a construct closely related to confidence, is also associated with stock market participation and household allocations to risky assets. They show this both for generalized trust and for trust related to financial advice from a specific banker/broker, in cross-sections based on various surveys. Guiso, Sapienza, and Zingales (2009) show that bilateral trust is associated with cross-border investment. Christensen, Maffett, and Vollon (2018) provide evidence that two introductions of European capital markets regulation were positively associated with household equity ownership, and that the effects were negatively related to existing bilateral cultural trust.

III. VARIABLE DEFINITIONS, DESCRIPTIVE STATISTICS, AND CONSTRUCT VALIDITY

Definition and Source of *SFARS*

The measure of confidence in disclosure quality, *SFARS*, comes from the Executive Opinion Survey (EOS) conducted by the World Economic Forum (WEF), which is used as an input to and reported in the WEF's annual Global Competitiveness Reports (GCR). The EOS, administered during the first quarter of each year, collects survey responses from thousands of executives through a network of the WEF's partner institutions. Most respondents are CEOs or at a similar executive level.⁷ As such, respondents are expected to be sophisticated market participants, but their perspectives may not generalize to those of investors or intermediaries.

Since 2002, the EOS has asked respondents to rate the strength of financial auditing and reporting standards related to company financial performance in the respondents' countries on a scale from 1 (extremely weak) to 7 (extremely strong—the best in the world). Each annually-published GCR provides country-year averages of the responses to these questions, whose wording varies only slightly from year to year, as shown in Table 1. *SFARS* for a country-year is defined as the average response to this question, as reported by the GCR. Christensen et al. (2016) use *SFARS* values from 2002–2003 as a secondary proxy for regulatory quality related to transparency and market abuse. Bushee and Friedman (2016) use *SFARS* values as part of a proxy for the quality of disclosure standards, which also includes proxies based on disclosure counts. Here, I use *SFARS* as a measure of market participants' confidence in disclosure quality, broadly defined. This definition is consistent with the use of the survey responses in prior work, a reasonable non-accountant executive's interpretation of the survey questions, and the correlations and plots presented below.⁸

Values for *SFARS* from 2006 to 2016 are downloadable from the data platform on the GCR website.⁹ Pre-2006 values were hand collected from the appendices of published GCRs. Because the WEF does not make the raw survey data available, *SFARS* values are the WEF-reported country-year averages. Reported country-year scores prior to 2006 were computed simply as equal-weighted averages. In 2007 the GCR began reporting country-year scores as moving averages based on responses from the current and prior years' surveys. Surveys from each year are weighted to emphasize current-year responses while taking into account the country-specific number of responses in each year.¹⁰ In 2008, the GCR began computing country-year averages using a weighting process based on respondents' firms' sectors (Agriculture, Manufacturing industry, Non-manufacturing industry, and Services), where the weight applied to responses is based on the sector's contribution to GDP. Reported scores since 2008 are computed as a moving average of sector-weighted responses. t-tests for differences in means find no difference in the mean level or change in *SFARS* in 2008 relative to the other sample years.

Based on the timing of the surveys, *SFARS* taken from the GCR in year t is matched to independent variables measured in year $t-1$. So, *SFARS* taken from the 2010 GCR is matched to 2009 values of GDP, capital market development, etc. In other words, the 2009 value for *SFARS* for each country is taken from the 2010 GCR, which itself is based on a weighted average of responses from surveys administered in early 2009 and 2010. The WEF uses the same matching procedure in calculating their Global Competitiveness Index in that they match surveys from year t to hard data (e.g., GDP) corresponding to year $t-1$.

SFARS evolves slowly, leading to significant autocorrelation (explored further in Tables 6 and 8). The regression analyses presented below address this autocorrelation in two ways. First, standard errors are clustered by country to account for nonzero correlation across country-specific residuals. Second, all models on which inferences are based are estimated with country fixed effects or in changes.

⁷ The 2013 EOS was administered to over 13,000 executives in 148 countries. Respondents come from a range of industries, sectors, and firm sizes. The 2013 GCR is titled "The Global Competitiveness Report 2013–2014," but corresponds to data from 2013 and before, as it was posted online on September 3, 2013. Greater detail on the EOS in each year, including the questions asked and the number and distribution of survey respondents across different types of firms, can be found in each annual GCR. The number of respondents for each country-year survey with data available ranges from 10 to 598 (over 172,000 survey responses overall). The 10th, 25th, 50th, 75th, and 90th percentiles of the distribution of country-year respondents are 43, 64, 85, 101, and 136, respectively.

⁸ Private correspondence from the WEF also supports this interpretation. Transcripts of the relevant emails exchanged between the author and the WEF are available upon request.

⁹ Last checked at <http://reports.weforum.org/global-competitiveness-index/downloads/> on November 1 2016.

¹⁰ The number of respondents in each year was hand-collected from the annual GCRs and used to infer the country-year averages used as inputs to the moving average. The raw correlation between the reported 2-year moving average *SFARS* scores and the inferred annual scores is approximately 99 percent. Country-year standard deviations (*SD*) of responses were provided in the GCRs from 2003, 2004, and 2005. While the univariate correlation between *SFARS* and the reported standard deviation of survey responses for the 309 observations available is negative and significant, the association conditional on the controls used in the main regressions is positive and insignificantly different from zero (i.e., the coefficient on *SD* from a regression of *SFARS* on determinants as in Table 8, augmented with *SD*). Given the limitation using *SD* would place on sample size, it is not used below. Regressing *SD* on $\sqrt{(\# \text{ of survey respondents})}$, country-indicators, and year-indicators also yields an insignificant coefficient on $\sqrt{(\# \text{ of survey respondents})}$. So, even though the number of survey respondents is available for each country-year, it does not help estimate *SD* above and beyond country- and year-indicators.

TABLE 1
Strength of Financial Auditing and Reporting Standards Questions from the World Economic Forum’s Executive Opinion Surveys

EOS Years	Question
2002	Financial auditing and accounting standards in your country are (1 = extremely weak, 7 = extremely strong—the best in the world)
2003	Financial auditing and accounting standards in your country are (1 = extremely weak, 7 = extremely strong, among the best in the world)
2004	Financial auditing and reporting standards regarding company’s financial performance in your country are (1 = extremely weak, 7 = extremely strong—the best in the world)
2005	Financial auditing and reporting standards regarding company financial performance in your country are (1 = extremely weak, 7 = extremely strong—among the best in the world)
2006	Financial auditing and reporting standards regarding company financial performance in your country are (1 = extremely weak, 7 = extremely strong—the best in the world)
2007 and 2008	Financial auditing and reporting standards regarding company financial performance in your country are (1 = extremely weak, 7 = extremely strong, the best in the world)
2009	In your country, how would you assess financial auditing and reporting standards regarding company financial performance? (1 = extremely weak; 7 = extremely strong)
2010 through 2012	In your country, how would you assess financial auditing and reporting standards regarding company financial performance? (1 = extremely weak; 7 = extremely strong)
2013 through 2016	In your country, how strong are financial auditing and reporting standards? (1 = extremely weak; 7 = extremely strong)

Scores are equal-weighted means of country-year responses for 2002–2006. From 2007 on, reported scores are moving averages of the current and prior country-year average responses. From 2008 on, country-year averages are weighted by sector (Agriculture, Manufacturing industry, Non-manufacturing industry, and Services) based on sector contributions to country-year GDP.

The main sample is based on country-years with *SFARS* scores reported in the GCRs. The GCR reports data at the entity-year level, where entities are generally countries, but there are exceptions (e.g., Hong Kong SAR). I use the term “country” for clarity even though the term “entity” might be technically more descriptive. Analyses are conducted at the country-year level except where explicitly indicated.

Definitions of Variables used in the Main Analysis

Proxies for capital market development come from the World Bank’s World Development Indicators data set (WDI): *Stock Market Cap_{k,t}* is the equity market’s total capitalization as a percent of GDP; *Listed Firms_{k,t}* is the number of firms listed on the domestic stock exchange per million population; *Stock Trading Volume_{k,t}* is the value of listed company stock traded during year *t* as a percent of GDP; *Private Credit_{k,t}* is domestic credit provided to the private (non-government) sector in year *t* as a percent of GDP; and *Bank Credit_{k,t}* is domestic credit provided to the private sector by banks only, in year *t* as a percent of GDP. These are common proxies for capital market development used in, for example, [Acemoglu and Johnson \(2005\)](#), [Djankov et al. \(2007\)](#), and [Levine and Zervos \(1998\)](#). For countries that do not have stock markets (as indicated by missing values for *Stock Market Cap_{k,t}* and *Listed Firms_{k,t}*, and no listed firms reported in Compustat), *Stock Market Cap_{k,t}*, *Listed Firms_{k,t}*, and *Stock Trading Volume_{k,t}* are set to 0.¹¹

Macroeconomic controls consist of the following. *GDP_{k,t}* is GDP per capita in year *t* for country *k* measured using current U.S. dollars. *GDP Growth_{k,t}* is the year-on-year percent change in GDP. *Unemployment_{k,t}* is the unemployment rate in percent, and *Inflation_{k,t}* is the annual inflation rate in percent based on the local consumer price index. *FDI_{k,t}* is net foreign direct investment as a percent of GDP. Proxies for institutional quality and governance are *Voice and Accountability_{k,t}*, *Political Stability and Absence of Violence_{k,t}*, *Regulatory Quality_{k,t}*, *Government Effectiveness_{k,t}*, *Rule of Law_{k,t}*, and *Control of*

¹¹ Taiwan, Republic of China, is not included in the WDI dataset. Data for Taiwan comes from the Central Bank of the Republic of China, the Republic of Taiwan’s National Statistics portal (<https://eng.stat.gov.tw>), and the U.N. Conference on Trade and Development. Missing values of *Stock Market Cap*, *Listed Firms*, and *Stock Trading Volume* were coded as 0 because most missing values come from countries without domestic stock markets. Missing values were not replaced with 0 if either *Stock Market Cap*, *Listed Firms*, or Compustat Global indicated the presence of publicly listed firms in a country-year. Overall, approximately 500 country-year missing values of each variable were replaced with 0. Imputing 0 is done primarily to reduce the number of observations lost when using capital market development proxies as controls. Table 10 and Table IA.A (in the Online Appendix) present results without replacing missing values for these variables with 0.

$Corruption_{k,t}$, taken from the World Bank's Worldwide Governance Indicators data set (Kaufmann, Kraay, and Mastruzzi 2010).

To address concerns about common response bias on the EOS, I use *Capacity for Innovation* as an additional control. *Capacity for Innovation* $_{k,t}$, like *SFARS*, is taken from the EOS, so it should be affected by the same survey-level common response bias. Including it as a control therefore mitigates the potential for the coefficient on *SFARS* to be identified based on common response bias, because variation driven by this bias will not be attributable to any single regressor. *Capacity for Innovation* $_{k,t}$ is the country-year average response to "In your country, to what extent do companies have the capacity to innovate? [1 = not at all; 7 = to a great extent]." As such, *Capacity for Innovation* $_{k,t}$ is expected to capture growth expectations that might also influence *SFARS* but be otherwise unrelated to confidence in disclosure quality.¹² Variable definitions are provided in Table 12 in Appendix A.

Descriptive Statistics

Table 2 presents a list of the countries with *SFARS* available, the number of years available, the average country values for *SFARS* and *GDP*, the average number of EOS respondents and listed firms, and each country's legal origin and region. The upper limit of 15 observations per country is based on the number of years for which the EOS included the *SFARS* question as of the time of data collection. South Africa, Finland, and New Zealand have the highest average values of *SFARS*, at 6.35, 6.27, and 6.22, respectively. Myanmar, Angola, and Timor-Leste have the lowest, at 2.47, 2.74, and 2.81, respectively. The number of observations for each country ranges from 1 for Belize to 15 for much of the developed and developing world. Some cross-country comparisons of average *SFARS* values (e.g., the United States' 5.65 compared to South Africa's 6.35) might contradict some priors about the cross-section of disclosure quality. These cross-country differences in means highlight the importance of controlling for country effects that can mitigate variation based on, for example, country-specific respondents' biases, which can influence how capital market participants use information made available through corporate reports, but can also reflect respondents' biases in a way less indicative of investor beliefs.

Descriptive statistics are presented in Table 3. There are 1,893 country-year observations with *SFARS* available. These country-years form the basis of the sample. *SFARS* has a sample mean of 4.70 (on a 1 to 7 scale) and a standard deviation of 0.90. *SFARS* does not appear to be skewed, as the median is also 4.70. Credit market data is available for more country-years than equity market data, and credit markets tend to be larger. About 250–350 country-years in the sample have missing equity-market data (after imputing zeroes for non-existing equity markets, as described above). In contrast, only about 80 country-years with available *SFARS* observations have missing data on the provision of credit to the private sector. Missing observations for the macroeconomic and institutional variables, particularly *Unemployment* and *FDI*, also negatively impact sample size in the analysis below. Additionally, several of the capital market and macroeconomic indicators are skewed, with means substantially greater than medians. Inflation is particularly skewed, primarily because some countries during the sample experience hyperinflation. Zimbabwe had inflation of over 100 percent in every year from 2002 through 2007 (over 24,000 percent in 2007), as compared to the sample median of about four percent annually.

Construct Validity of *SFARS*

The remainder of this section focuses on the construct validity of *SFARS*. I first explore correlations between country-mean *SFARS* and several measures used in prior literature to capture disclosure quality available at the country level. The analysis is at the country-mean level because several of these variables are available only cross-sectionally. These prior measures include the extensively-used CIFAR score (e.g., Bushman, Piotroski, and Smith 2004), the prospectus disclosure index (La Porta et al. 2006), the O-factor opacity index constructed by PricewaterhouseCoopers (Gelos and Wei 2005), the S&P Transparency and Disclosure Survey mean country score (Khanna et al. 2004), and the anti-self-dealing business disclosure index available from the World Bank (Djankov et al. 2008).¹³ Univariate correlations are shown in Table 4. Consistent with *SFARS* capturing

¹² In an unreported regression of $GDP\ Growth_{k,t}$ on $Capacity\ for\ Innovation_{k,t-1}$, with country and year fixed effects, the coefficient on lagged *Capacity for Innovation* is positive and significant at the five percent level, consistent with it capturing growth expectations on average.

¹³ Brown, Preiato, and Tarca (2014) construct proxies for the quality of the audit environment (BPT_AUDIT_k) and the degree of accounting enforcement activity ($BPT_ENFORCE_k$) for cross-sections of approximately 50 countries in years 2002, 2005, and 2008. Based on the 149 country-year observations with data available for *SFARS*, BPT_AUDIT , and $BPT_ENFORCE$, the Pearson correlation between *SFARS* and BPT_AUDIT ($BPT_ENFORCE$) is 0.497 (0.457) with a p-value of less than 0.001. In a regression of *SFARS* on BPT_AUDIT , $BPT_ENFORCE$, country indicators, and year indicators, with standard errors clustered at the country level, neither of the coefficients on the BPT proxies is significantly different from 0 at the 15 percent level or better. This result suggests that most of the covariance between *SFARS* and the BPT measures is attributable to country- or year-level variance that would be absorbed by country- and year-level fixed effects in the main regressions.

TABLE 2
List of Countries and Selected Descriptive Statistics

<u>Country</u>	<u>n</u>	<u>SFARS</u>	<u>Resp.</u>	<u>GDP</u>	<u>Listed Firms</u>	<u>Legal Origin</u>	<u>Region</u>
South Africa	15	6.35	58	5,672	366	English	Africa
Namibia	15	5.49	62	4,064	9	English	Africa
Mauritius	15	5.33	53	6,917	53		Africa
Zimbabwe	15	5.23	45	609	0	English	Africa
Botswana	15	5.08	83	5,544	0	English	Africa
Swaziland	6	4.98	40	3,474	0		Africa
Malawi	11	4.93	63	379	8	English	Africa
Rwanda	7	4.77	64	633	0	French	Africa
Zambia	12	4.71	84	1,283	19	English	Africa
Kenya	14	4.59	109	892	55	English	Africa
Seychelles	4	4.54	47	14,073	1		Africa
Gambia, The	14	4.54	83	483	0		Africa
Ghana	11	4.52	98	1,211	29	English	Africa
Gabon	5	4.34	43	10,383	0		Africa
Senegal	10	4.29	96	1,000	0	French	Africa
Burkina Faso	9	4.18	47	561	0	French	Africa
Nigeria	15	4.17	131	1,585	202	English	Africa
Tanzania	14	4.14	96	626	0	English	Africa
Cape Verde	7	4.00	89	3,510	0		Africa
Côte d'Ivoire	9	4.00	95	1,301	204	French	Africa
Liberia	4	4.00	84	427	0	French	Africa
Sierra Leone	5	3.89	97	686	0	English	Africa
Uganda	14	3.88	98	485	4	English	Africa
Ethiopia	14	3.83	90	324	0	English	Africa
Mozambique	14	3.79	84	447	0	French	Africa
Cameroon	12	3.65	81	1,152	0	French	Africa
Benin	11	3.60	104	731	0	French	Africa
Lesotho	11	3.59	82	954	0	English	Africa
Madagascar	14	3.59	99	380	0	French	Africa
Mali	14	3.48	80	630	0	French	Africa
Burundi	11	3.21	89	214	0	French	Africa
Guinea	4	3.07	68	499	0	French	Africa
Chad	14	2.87	114	751	0	French	Africa
Angola	5	2.74	39	3,751	0	French	Africa
Bahrain	13	5.73	59	20,815	43		Arab States
Qatar	12	5.66	89	74,340	43		Arab States
United Arab Emirates	13	5.31	100	39,958	86	English	Arab States
Saudi Arabia	10	5.30	129	20,229	142	English	Arab States
Oman	10	5.28	102	18,887	127	French	Arab States
Jordan	15	5.12	95	3,380	223	French	Arab States
Kuwait	12	4.88	60	41,604	147	French	Arab States
Tunisia	14	4.85	80	3,594	49	French	Arab States
Egypt	14	4.45	92	2,222	486	French	Arab States
Lebanon	7	4.44	56	8,465	10	French	Arab States
Morocco	15	4.40	89	2,468	67	French	Arab States
Algeria	14	3.37	70	4,032	0	French	Arab States
Libya	7	3.10	52	10,559	0		Arab States
Mauritania	11	2.97	75	1,169	0	French	Arab States
Yemen	5	2.96	56	1,322	0	English	Arab States
New Zealand	15	6.22	47	30,788	150	English	Asia/Pacific
Singapore	15	6.10	133	39,612	460	English	Asia/Pacific
Australia	15	6.08	70	44,299	1766	English	Asia/Pacific
Hong Kong SAR	15	6.06	54	31,459	1289	English	Asia/Pacific

(continued on next page)

TABLE 2 (continued)

<u>Country</u>	<u>n</u>	<u>SFARS</u>	<u>Resp.</u>	<u>GDP</u>	<u>Listed Firms</u>	<u>Legal Origin</u>	<u>Region</u>
Malaysia	15	5.55	86	7,636	929	English	Asia/Pacific
Japan	15	5.40	96	37,214	2513	German	Asia/Pacific
Taiwan, ROC	14	5.39			747	German	Asia/Pacific
India	15	5.15	128	1,052	5210	English	Asia/Pacific
Sri Lanka	15	5.02	92	2,205	254	English	Asia/Pacific
Thailand	15	5.02	74	4,158	516	English	Asia/Pacific
Philippines	15	4.92	75	1,851	244	French	Asia/Pacific
Brunei Darussalam	7	4.85	63	35,698	0		Asia/Pacific
Bhutan	4	4.74	109	2,482	0		Asia/Pacific
Korea, Rep.	12	4.72	114	22,448	1762	German	Asia/Pacific
Pakistan	14	4.41	127	991	609	English	Asia/Pacific
Indonesia	15	4.29	82	2,264	400	French	Asia/Pacific
Kazakhstan	12	4.27	129	8,866	69	Socialist	Asia/Pacific
China	15	4.26	312	3,838	1833	German	Asia/Pacific
Azerbaijan	12	4.09	82	5,091	0	Socialist	Asia/Pacific
Iran, Islamic Rep.	7	3.97	308	6,566	336	English	Asia/Pacific
Nepal	11	3.85	92	557	119	English	Asia/Pacific
Lao PDR	4	3.70	81	1,678	0	French	Asia/Pacific
Mongolia	12	3.68	87	2,666	274	Socialist	Asia/Pacific
Tajikistan	10	3.66	94	733	0		Asia/Pacific
Vietnam	15	3.65	116	1,172	142	French	Asia/Pacific
Kyrgyz Republic	12	3.60	95	905	9	Socialist	Asia/Pacific
Bangladesh	15	3.56	84	683	250	English	Asia/Pacific
Cambodia	12	3.54	86	784	0	French	Asia/Pacific
Syria	5	3.51	115	1,930	0	French	Asia/Pacific
Timor-Leste	9	2.81	37	790	0		Asia/Pacific
Myanmar	3	2.47	78	1,244	0		Asia/Pacific
Finland	15	6.27	45	42,461	144	Scandinavian	Europe
United Kingdom	15	6.10	81	39,430	2298	English	Europe
Sweden	15	6.09	45	47,922	282	Scandinavian	Europe
Norway	15	6.05	55	77,138	185	Scandinavian	Europe
The Netherlands	15	5.99	87	45,204	195	French	Europe
Luxembourg	14	5.97	47	95,194	33		Europe
Austria	15	5.91	88	42,346	94	German	Europe
Germany	15	5.85	88	38,675	676	German	Europe
Malta	14	5.84	60	17,765	18		Europe
Switzerland	15	5.83	81	66,282	256	German	Europe
Denmark	15	5.81	73	52,209	192	Scandinavian	Europe
France	15	5.76	114	37,144	678	French	Europe
Belgium	15	5.72	64	39,934	184	French	Europe
Israel	15	5.71	49	27,242	571	English	Europe
Estonia	15	5.58	86	13,624	15		Europe
Iceland	15	5.50	55	46,957	52		Europe
Ireland	15	5.40	47	49,104	53	English	Europe
Cyprus	13	5.35	95	27,821	23		Europe
Hungary	15	5.10	76	11,684	47	German	Europe
Portugal	15	4.99	92	19,798	55	French	Europe
Lithuania	15	4.92	140	10,876	45		Europe
Spain	15	4.92	91	27,370	3301	French	Europe
Czech Republic	15	4.91	91	16,186	38	German	Europe
Slovenia	15	4.87	91	20,471	92	German	Europe
Slovak Republic	15	4.86	75	14,125	77	German	Europe
Latvia	15	4.85	122	10,812	60	German	Europe
Poland	15	4.82	154	10,421	490	German	Europe
Greece	15	4.62	80	22,770	285	French	Europe

(continued on next page)

TABLE 2 (continued)

<u>Country</u>	<u>n</u>	<u>SFARS</u>	<u>Resp.</u>	<u>GDP</u>	<u>Listed Firms</u>	<u>Legal Origin</u>	<u>Region</u>
Turkey	15	4.50	93	8,110	266	French	Europe
Croatia	15	4.43	79	11,569	113	German	Europe
Macedonia, FYR	14	4.42	93	4,067	40	German	Europe
Bulgaria	15	4.40	119	5,503	370	German	Europe
Italy	15	4.31	88	32,749	290	French	Europe
Montenegro	10	4.29	83	6,593	137		Europe
Georgia	13	4.24	73	2,865	147	Socialist	Europe
Armenia	12	4.23	81	3,004	43	Socialist	Europe
Romania	15	4.21	95	6,800	67	French	Europe
Moldova	7	4.07	119	1,929	0	Socialist	Europe
Albania	12	3.99	84	3,830	0	French	Europe
Serbia	11	3.94	95	5,405	523	German	Europe
Russian Federation	15	3.83	361	8,776	390	Socialist	Europe
Bosnia and Herzegovina	12	3.63	83	3,970	531	German	Europe
Ukraine	15	3.61	109	2,485	33	Socialist	Europe
Canada	15	6.13	96	40,948	3466	English	North America
United States	15	5.65	307	46,916	4821	English	North America
Puerto Rico	8	5.83	67	25,937	0	French	South/Latin America
Barbados	10	5.68	56	15,699	10		South/Latin America
Chile	15	5.37	132	10,376	235	French	South/Latin America
Jamaica	15	5.31	66	4,598	50	English	South/Latin America
Panama	15	4.93	103	7,580	28	French	South/Latin America
Brazil	15	4.91	144	7,747	369	French	South/Latin America
Trinidad and Tobago	15	4.85	103	15,077	4		South/Latin America
Peru	15	4.81	80	4,200	200	French	South/Latin America
Costa Rica	15	4.78	77	6,957	11	French	South/Latin America
Mexico	15	4.76	187	8,577	140	French	South/Latin America
Uruguay	15	4.52	79	9,672	0	French	South/Latin America
Colombia	15	4.51	136	5,031	90	French	South/Latin America
El Salvador	15	4.46	58	3,331	36	French	South/Latin America
Honduras	15	4.27	84	1,838	3	French	South/Latin America
Guatemala	15	4.23	94	2,619	0	French	South/Latin America
Belize	1	4.21	30	4,344	0		South/Latin America
Dominican Republic	15	4.12	64	4,564	0	French	South/Latin America
Ecuador	14	4.04	95	3,993	0	French	South/Latin America
Guyana	11	4.03	81	2,714	9		South/Latin America
Venezuela	15	4.00	48	8,364	49	French	South/Latin America
Nicaragua	15	3.93	72	1,452	0	French	South/Latin America
Argentina	15	3.92	88	8,850	102	French	South/Latin America
Suriname	4	3.89	39	8,980	0		South/Latin America
Paraguay	15	3.62	85	2,724	0	French	South/Latin America
Bolivia	15	3.60	71	1,808	28	French	South/Latin America
Haiti	6	3.22	75	704	0	French	South/Latin America

This table presents a list of countries reported in the Global Competitiveness Report with non-missing *SFARS*. Values reported represent country-means of country-year observations. *n* is the number of country-year observations with non-missing *SFARS*.

Variable Definitions:

SFARS = the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys (EOS);

Resp. = the average number of country-year EOS respondents;

Listed Firms = the average number of listed firms, with missing values replaced by 0;

GDP = gross domestic product per capita in U.S. dollars; and

Legal Origin = taken from [Djankov et al. \(2007\)](#), the list is sorted by geographic region first, then by *SFARS*.

TABLE 3
Descriptive Statistics

Variable	n	Mean	Std. Dev.	25th Pctl	Median	75th Pctl
<i>SFARS</i>	1,893	4.70	0.90	3.98	4.70	5.39
<i>Stock Market Cap</i>	1,549	45.59	98.25	0.00	21.43	55.57
<i>Listed Firms</i>	1,707	19.80	42.60	0.00	3.89	22.17
<i>Stock Trading Volume</i>	1,654	24.90	62.88	0.00	1.74	22.21
<i>Private Credit</i>	1,812	58.35	47.93	22.75	42.82	82.24
<i>Bank Credit</i>	1,812	54.91	43.96	22.13	42.07	75.41
<i>GDP</i>	1,866	8.61	1.54	7.33	8.59	9.95
<i>GDP Growth</i>	1,881	3.91	5.10	1.77	3.82	6.15
<i>Unemployment</i>	1,753	8.66	6.21	4.50	7.10	10.50
<i>Inflation</i>	1,844	19.98	569.09	2.00	3.95	7.38
<i>FDI</i>	1,774	2.51	12.50	0.25	1.91	4.30
<i>Capacity for Innovation</i>	1,893	3.56	0.97	2.82	3.36	4.11
<i>Voice and Accountability</i>	1,815	0.11	0.91	-0.58	0.07	0.94
<i>Political Stability and Absence of Violence</i>	1,815	-0.03	0.90	-0.68	0.02	0.75
<i>Regulatory Quality</i>	1,815	0.25	0.90	-0.43	0.16	1.00
<i>Government Effectiveness</i>	1,815	0.22	0.95	-0.55	0.03	0.97
<i>Rule of Law</i>	1,815	0.12	0.98	-0.66	-0.11	0.89
<i>Control of Corruption</i>	1,815	0.12	1.02	-0.67	-0.20	0.84

This table presents descriptive statistics for the sample. *n* is the number of observations. Std. Dev. is standard deviation. 25th Pctl and 75th Pctl are the 25th and 75th percentiles of the distribution.

Variable Definitions:

SFARS = the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys;

Stock Market Cap = equity market capitalization as a percentage of GDP;

Listed Firms = the number of publicly listed firms per million population;

Stock Trading Volume = the value of listed company stock traded divided by GDP;

Private Credit = domestic credit provided to the private sector (not just from banks) as a percentage of GDP;

Bank Credit = domestic credit provided by the banking sector as a percentage of GDP;

GDP = gross domestic product per capita in U.S. dollars;

GDP Growth = the year-on-year change in GDP in percent;

Unemployment = the unemployment rate in percent;

Inflation = the annual inflation rate in percent based on the local consumer price index;

FDI = foreign direct investment, net inflows, as a percent of GDP;

Capacity for Innovation = the perceived capacity for firms in the country to innovate, based on the World Economic Forum's Executive Opinion Surveys; and

Voice and Accountability, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption* = measures of institutional quality taken from the World Bank's Governance Indicators data set (Kaufmann et al. 2010).

variation in disclosure quality, country-mean *SFARS* values are positive and significantly correlated with $CIFAR_k$, $S\&P\ Transparency_k$, $Prospectus\ Disclosure_k$, and $Self-Dealing\ Disclosure_k$, and negatively correlated with opacity as captured by PwC's opacity index. A benefit of the *SFARS* score over these measures is that the *SFARS* score is available at the country-year level, allowing for time-series variation, and for over 100 countries, representing broader coverage.¹⁴

Second, I examine univariate correlations between *SFARS* and proxies for earnings quality, the fraction of listed firms using Big N auditors to audit their financial statements, the fraction of listed firms choosing to report with "high-quality" accounting standards (i.e., U.S. GAAP or IFRS), and analyst following. These proxies are based on annual firm-level data from Compustat and I/B/E/S. Firm-level data based on fiscal years ending in January through August (September through December) of year *t* are matched with country-level *SFARS* corresponding to year *t* (year *t* + 1). Firm-level data is winsorized at the 1st and 99th percentiles of the global sample, consistent with prior research. Relative to the proxies examined in this section, *SFARS*

¹⁴ Although the *Self-Dealing Disclosure* index (called the Business Disclosure Index by the World Bank) is also available at the country-year level, it focuses on disclosure related to self-dealing transactions only rather than firms' initial and ongoing disclosures related to financial performance, and it is available only from 2005. In a regression of *SFARS* on *Self-Dealing Disclosure*, country indicators, and year indicators, the coefficient on *Self-Dealing Disclosure* is positive but insignificantly different from 0 ($\beta = 0.0029$, t-statistic = 0.25, *n* = 1381).

TABLE 4
Correlations between SFARS and Country-Level Proxies

	1	2	3	4	5	6
1. <i>SFARS</i>						
correlation coefficient	1.0000	0.6099	-0.6397	0.5638	0.4621	0.3053
p-value		< 0.0001	< 0.0001	0.0041	0.0008	0.0001
n	151	41	35	24	49	150
2. <i>CIFAR</i>						
correlation coefficient	0.6883	1.0000	-0.6707	0.6274	0.4176	0.2534
p-value	< 0.0001		0.0012	0.0018	0.0066	0.1147
n	41	41	20	22	41	40
3. <i>PWC Opacity Index</i>						
correlation coefficient	-0.5899	-0.6462	1.0000	-0.5870	-0.3741	-0.1274
p-value	0.0002	0.0021		0.0448	0.0546	0.4727
n	35	20	35	12	27	34
4. <i>S&P Transparency</i>						
correlation coefficient	0.7061	0.6125	-0.6538	1.0000	-0.1302	0.1237
p-value	0.0001	0.0024	0.0211		0.5539	0.5739
n	24	22	12	24	23	23
5. <i>Prospectus Disclosure</i>						
correlation coefficient	0.4397	0.3828	-0.3139	-0.1465	1.0000	0.4933
p-value	0.0016	0.0135	0.1109	0.5046		0.0004
n	49	41	27	23	49	48
6. <i>Self-Dealing Disclosure</i>						
correlation coefficient	0.2917	0.3266	-0.0982	0.0483	0.4398	1
p-value	0.0003	0.0397	0.5807	0.8267	0.0018	
n	150	40	34	23	48	150

This table shows cross-sectional correlations using country-level observations. Pearson (Spearman) correlations are above (below) the diagonal. Each cell in the table contains the correlation with the p-value and number of observations used to compute below.

Variable Definitions:

SFARS = the country-average perceived strength of financial auditing and reporting standards score from the World Economic Forum's Executive Opinion Surveys;

CIFAR = the disclosure score from the Center for Financial Analysis and Research as reported in [Bushman et al. \(2004\)](#);

PWC Opacity Index = the O-Factor score computed by PricewaterhouseCoopers as reported in [Gelos and Wei \(2005\)](#);

S&P Transparency = the mean country transparency score based on Standard and Poor's Transparency and Disclosure Survey as reported in [Khanna et al. \(2004\)](#);

Prospectus Disclosure = the disclosure score related to IPO prospectuses from [La Porta et al. \(2006\)](#); and

Self-Dealing Disclosure = the disclosure score related to self-dealing transactions from the World Bank Business Indicators data set described in [Djankov et al. \(2008\)](#).

makes it possible to capture variation in confidence in disclosure quality that is potentially influenced by observable fundamentals (e.g., GDP), but is not measured using firms' accounting systems.¹⁵

The earnings or accruals quality proxies are calculated as country-year medians of: absolute accruals (*Absolute Accruals_{k,t}*), negative accruals (*Negative Accruals_{k,t}*), timely loss recognition (*TLR_{k,t}*), the [Dechow and Dichev \(2002\)](#) accruals quality measure (*DD AQ_{k,t}*), the [Francis, LaFond, Olsson, and Schipper \(2005\)](#) measure of discretionary accruals quality (*FLOS AQ_{k,t}*), and two discretionary smoothing proxies that [Lang et al. \(2012\)](#) calculate (*SMTH1_{k,t}* and *SMTH2_{k,t}*). Details regarding the construction of the earnings quality proxies can be found in Appendix B. Three additional proxies are the median number of analysts making annual earnings forecasts in the 90 days prior to a firm's annual earnings announcement (*Analyst Following_{k,t}*; from I/B/E/S), the fraction of firms preparing their annual financial statements using U.S. GAAP or IFRS (*High Acct Std*

¹⁵ [Dechow, Ge, and Schrand \(2010\)](#) discuss issues with earnings quality proxies in international settings, including problems related to measurement noise and the effects of institutional heterogeneity. They note that institutional differences can imply that higher values of earnings- and accruals- based proxies could be interpreted differently across countries (i.e., in some cases reflecting harmful opportunism, in other cases reflecting beneficial transparency). While the *SFARS* measure is less susceptible to these criticisms, I use accruals-based proxies as one of several sets of benchmarks against which to assess the construct validity of *SFARS* as a measure of confidence in disclosure quality.

$Frac_{k,t}$; from Compustat), and the fraction of firms employing Big N auditing firms as the primary auditors of their annual reports ($Big\ N\ Frac_{k,t}$; from Compustat). Several proxies not used here exploit stock returns as a benchmark for the information that should be reflected in earnings. These are not used because they require an inappropriate assumption of homogeneous price efficiency across heterogeneously-developed equity markets (see [Holthausen \[2003, Section VI\]](#) for a brief discussion).

Correlations between *SFARS* and proxies for earnings or accruals quality, analyst following, accounting standard adoption, and auditor choice are shown in Table 5. Overall, *SFARS* is associated with higher accruals quality as reflected in lower absolute and signed accruals, higher values of accruals quality proxies based on [Dechow and Dichev \(2002\)](#) and [Francis et al. \(2005\)](#), and less earnings smoothing. *SFARS* is also positively correlated with $Analyst\ Following_{k,t}$, $High\ Acct\ Std\ Frac_{k,t}$, and $Big\ N\ Frac_{k,t}$, suggesting via triangulation both that *SFARS* captures perceptions of greater earnings quality reflected in these measures (even though the measures themselves are not consistently significantly correlated), and that these earnings quality proxies are associated with beliefs that capital market participants hold. In contrast to these correlations, *SFARS* is not significantly correlated with timely loss recognition, suggesting that this measure of conservatism in earnings is not associated, on average, with perceptions of higher-quality disclosures across country-years.

Third, because earnings response coefficients (ERCs) from return-earnings regressions are commonly used as a proxy for investor confidence in earnings disclosures (e.g., [Ghosh and Moon 2005](#)), I test for whether ERCs co-vary with *SFARS* by estimating the following regression:

$$r_{j,t} = \beta_1 * UE_{j,t} + \beta_2 * SFARS_{k,t} * UE_{j,t} + \beta_3 * SFARS_{k,t} + \Gamma \bullet X_{j,t} + \varepsilon_{j,t} \quad (1)$$

In Equation (1), $r_{j,t}$ is the 3-day raw return around the firm's annual earnings announcement (trading days $-1, 0,$ and $+1$, where day 0 is the earnings announcement day according to I/B/E/S); $UE_{j,t}$ is the unexpected earnings per share (EPS) for the firm, defined as I/B/E/S actual EPS minus the median of analyst forecasts of EPS in the 90 days prior to the announcement (keeping only the most recent forecast for any given analyst), scaled by stock price at the end of the most recent month prior to the earnings announcement; and $SFARS_{k,t}$ is *SFARS* for the country-year. $X_{j,t}$ is a vector of controls including year, country, and 2-digit SIC indicators, and the following variables both alone and interacted with $UE_{j,t}$, corresponding to the fiscal year of the announced earnings: return on assets (ROA) defined as net income before extraordinary items divided by beginning total assets; log market value of common equity in U.S. dollars; the book to market ratio; and year-on-year percent revenue growth. All variables are standardized to be mean-zero and unit-variance prior to regression estimation. Standard errors are clustered by year to account for correlation across announcements occurring in the same or similar time-span. Estimating Equation (1) yields a positive and significant coefficient on $SFARS_{k,t} * UE_{j,t}$ ($\beta_2 = 0.01$, t-statistic = 1.94, p-value < 0.10), suggesting that investors react more strongly to earnings in country-years in which market participants have greater confidence in disclosure quality. For reference, the coefficient on $UE_{j,t}$ is positive and statistically significant as well ($\beta_1 = 0.07$, t-statistic = 10.13, p-value < 0.01).

Fourth, I present four time-series anecdotes that relate *SFARS* to accounting scandals and regulatory interventions. Figure 1 shows time-series plots of *SFARS* for the United States, Italy, Ireland, and India from 2001 through 2015 (corresponding to surveys from 2002 through 2016). Their *SFARS* time-series are shown to provide a better understanding of *SFARS*'s potential drivers. The United States is mainly shown for reference, as there were numerous events that plausibly influenced *SFARS* in this time period. From 2001 through 2015, there were several accounting scandals (e.g., WorldCom, Enron, and HealthSouth) in addition to regulatory responses aimed at improving financial auditing and reporting quality (e.g., the Sarbanes-Oxley and Dodd-Frank Acts). Other countries provide starker examples. Italy's *SFARS* score dropped considerably from 2002 to 2003, around the time of the Parmalat accounting scandal. Ireland from 2007 through 2010 shows a decline of similar magnitude, coincident with the Anglo Irish Bank accounting scandal around 2008. This decline also coincides with the global financial crisis and macroeconomic slowdown, illustrating the need to control in subsequent tests for macroeconomic factors that can influence *SFARS* and capital market development. India's time-series of *SFARS* scores shows a modest decline from 2008 to 2010 around the time of the Satyam accounting scandal and a sharp drop around the 2013 Saradha Group Scandal.

Finally, I conduct a more sophisticated analysis of how large unexpected changes in *SFARS* are associated with high-profile events that might reasonably be expected to influence confidence in financial auditing and reporting. To do so, I first estimate a simple model for expected changes in *SFARS*. Independent variables include the prior change in *SFARS* and proxies for changes in capital market development, macroeconomic fundamentals, and institutional quality described above.

As shown in Table 6, changes in *SFARS* are conditionally positively associated with lagged changes in *Stock Market Cap*, concurrent changes in *GDP*, *GDP Growth*, *Voice and Accountability*, and *Government Effectiveness*, and negatively associated with lagged changes in *Listed Firms* and *Stock Trading Volume*. To assess whether the largest unexpected changes in *SFARS* are associated in reasonable ways with high-profile events, I selected the top 55 (5 percent of 1100 observations) absolute values of unexpected changes in *SFARS*, and searched for country-year events that might be associated with such changes, which are the *Reasons* appearing in Table 13 in Appendix A. There are 26 *Reason* classifications, which were based on personal judgments of descriptions found online in informational and news websites (e.g., from the *CIA World Factbook*, the

TABLE 5
Correlations between SFARS and Firm-Level Proxies

Variable	1	2	3	4	5	6	7	8	9	10	11
1. <i>SFARS</i>	1.00	−0.11	0.22	0.00	0.12	0.07	−0.02	0.09	0.37	0.08	0.43
2. <i>Absolute Accruals</i>	−0.07	1.00	0.10	0.03	−0.24	−0.07	0.11	0.00	0.01	−0.05	−0.02
3. <i>Negative Accruals</i>	0.33	0.14	1.00	0.03	0.13	0.09	−0.06	−0.04	0.17	0.17	0.19
4. <i>TLR</i>	−0.05	0.08	−0.09	1.00	−0.03	0.01	0.28	−0.13	−0.02	−0.05	−0.06
5. <i>DD AQ</i>	0.15	−0.30	0.17	−0.10	1.00	0.18	−0.05	−0.09	0.03	0.01	0.05
6. <i>FLOS AQ</i>	0.11	−0.01	0.16	−0.09	0.16	1.00	−0.28	−0.16	0.07	0.14	−0.02
7. <i>SMTH1</i>	0.13	0.01	−0.10	−0.01	0.04	−0.13	1.00	0.40	−0.11	0.03	0.06
8. <i>SMTH2</i>	0.19	−0.08	−0.15	−0.05	0.08	−0.11	0.57	1.00	−0.06	0.09	0.13
9. <i>Analyst Following</i>	0.44	0.04	0.25	−0.04	0.03	0.03	−0.02	−0.01	1.00	0.12	0.21
10. <i>High Acct Std Frac</i>	0.09	−0.12	0.17	−0.17	0.11	0.12	0.11	0.06	0.09	1.00	0.24
11. <i>Big N Frac</i>	0.43	−0.04	0.22	−0.13	0.19	0.02	0.21	0.24	0.21	0.27	1.00

This table shows panel correlations using country-year observations. Pearson product-moment (Spearman rank) correlations are above (below) the diagonal. Country-year medians are medians of firm-year values within country-year, where firms with fiscal years ending in January–August (September–December) of year t are matched to calendar year t ($t-1$). Correlations in bold are statistically significantly different from 0 at the 1 percent level. The number of observations used to compute the correlation in each cell is reported in the Online Appendix Table IA.H.

Variable Definitions:

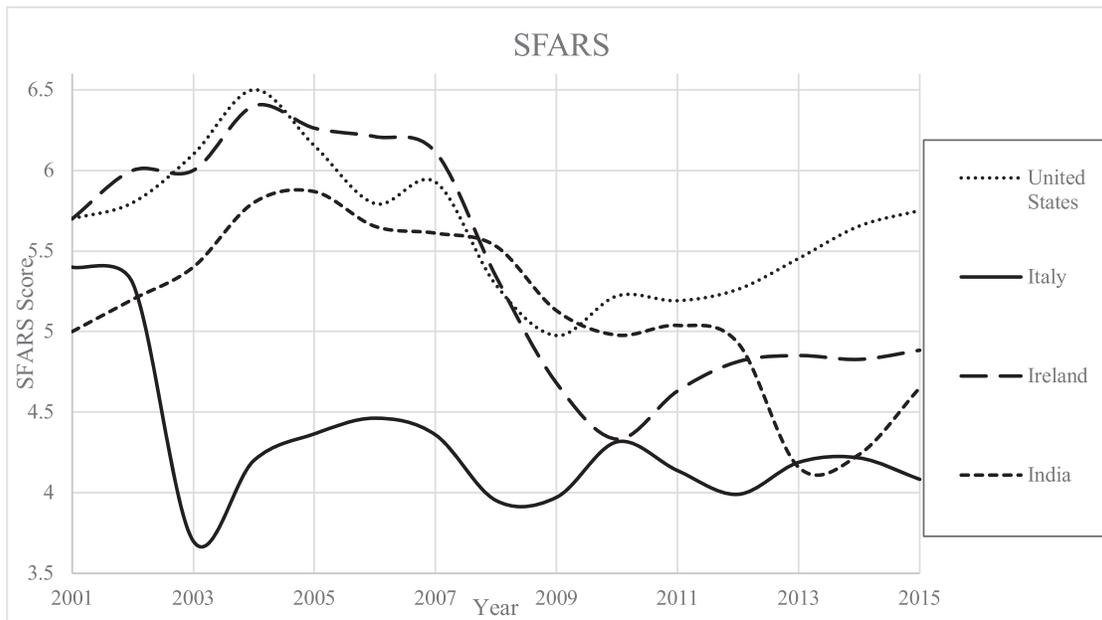
SFARS = the perceived strength of financial auditing and reporting standards score from the World Economic Forum’s Executive Opinion Surveys;
Absolute Accruals = country-year median absolute accruals defined as earnings before extraordinary items minus net operating cash flows, scaled by lagged total assets;
Negative Accruals = negative country-year median accruals defined similarly;
TLR = a country-year median timely loss recognition proxy taken from Basu (1997) based on the time-series of changes in earnings;
DD AQ = a country-year median accrual quality measure based on Dechow and Dichev (2002);
FLOS AQ = a country-year median discretionary accrual quality measure based on Francis et al. (2005);
SMTH1 and *SMTH2* = discretionary smoothing proxies based on Lang et al. (2012);
Analyst Following = the country-year median number of analysts making forecasts of firms’ annual earnings in the 90 days before the earnings announcement;
High Acct Std Frac = the fraction of firms preparing their financial reports using U.S. GAAP or IFRS; and
Big N Frac = the fraction of firms using Big N auditors as the primary external auditor on their annual reports.

Wall Street Journal, Reuters, *The Economist*, IFRS.org, and Wikipedia).¹⁶ For parsimony, I condensed the reasons into 8 *Categories*, also indicated in Table 13. Using these categories, I estimated a regression tree (via the r-part recursive partitioning algorithm in R) with the unexpected change in *SFARS* as the dependent variable. Explanatory variables included in the model were Category indicators as listed in Table 13, and all the explanatory variables that were included in the Table 6 specification except country fixed effects.

The resulting regression tree is presented in Figure 2. The first partition indicates that country-years with accounting scandals (e.g., Italy’s Parmalat scandal of 2003), civil unrest (e.g., Algeria in 2011), other governance changes (e.g., Guatemala’s 2004 political transition), and other scandals (e.g., Brazil’s 2014 scandal revelations) tended to have much more negative $\Delta SFARS$ residuals than those without (−2 versus +1.2). Country-years with positive $\Delta SFARS$ residuals had event categories including civil calm (e.g., the 2014 reelection of Evo Morales as president of Bolivia), capital market reforms (e.g., Korea’s 2006 banking reforms), corporate reforms (e.g., the passage of the Sarbanes-Oxley Act of 2002 in the U.S.), or other events (e.g., Namibian land expropriation in 2004). Among the country-years within the former, relatively negative, categories, those with more negative changes in *FDI* tended to have the most negative $\Delta SFARS$ residuals (−2.5 on average, versus an average of −0.8 for observations with $\Delta FDI \geq 0.064$). The most positive $\Delta SFARS$ residuals were found for country-years with the latter event categories in combination with less positive changes in the World Bank *Political Stability* indicator (standardized changes < 0.23), perhaps reflecting higher average or less volatile *Political Stability*. Overall, this descriptive analysis suggests both that corporate scandals and reforms influence executive perceptions of the strength of financial auditing

¹⁶ Each country-year search for *Reason* started with the *CIA World Factbook*, the country’s Wikipedia page, and the Wikipedia list of global corporate scandals, and continued with searches for news articles related to accounting, disclosure, regulatory, financial, or other macroeconomic events in the relevant country around the year of interest. A detailed table with sources is available from the author.

FIGURE 1
Time-Series Plots of SFARS for Selected Countries



This Figure shows plots of SFARS scores by year for the United States, Italy, Ireland, and India. The United States is shown for reference, while other countries are shown because of the presence of accounting scandals. The scandals involve Parmalat (Italy in 2003), Anglo Irish Bank (Ireland in 2009), Satyam (India in 2009), and Saradha (India in 2013). SFARS is the country-average perceived strength of financial auditing and reporting standards score from the World Economic Forum’s Executive Opinion Surveys. Year listed on the horizontal axis is the year corresponding to the data, which is one year prior to the year of the relevant EOS survey.

and reporting standards, and that other events related to the political environment, social unrest, or natural disasters can also affect these perceptions.

Overall, results in this section demonstrate that SFARS plausibly captures confidence in disclosure quality as reflected in several previously-used proxies for various facets of the disclosure environment.

IV. SFARS AND CAPITAL MARKET DEVELOPMENT

Having demonstrated the validity of SFARS as a proxy for confidence in disclosure quality, I now use SFARS to assess the association of such confidence with the development of equity and debt markets.

Univariate correlations between variables included in the main analysis are shown in Table 7. Panels A and B show correlations of raw variables, while Panels C and D provide correlations between variables after adjusting for country-level means. SFARS is positively correlated with proxies for macroeconomic, institutional, and capital market development in Panels A and B, although the correlations are much stronger before adjusting for country-level means. This is a general pattern across Panels A and B, for variables other than SFARS as well. Even after adjusting, however, SFARS remains significantly correlated with a number of macroeconomic and institutional characteristics potentially relevant to capital market development.

SFARS and Subsequent Capital Market Development

Table 8 presents regressions that relate SFARS to proxies for stock market development, based on estimates of the equation:¹⁷

$$CMD_{k,t} = \alpha_1 + \alpha_k + \beta * SFARS_{k,t-1} + \Gamma \bullet X_{k,t} + \varepsilon_{k,t} \tag{2}$$

where $CMD_{k,t}$ is one of the following proxies for capital market development: *Stock Market Cap_{k,t}*, *Listed Firm_{k,t}*, *Stock Trading Volume_{k,t}*, *Private Credit_{k,t}*, or *Bank Credit_{k,t}*. $X_{k,t}$ is a vector of controls including lagged values of each CMD proxy, $\log(GDP_{k,t})$,

¹⁷ Each country-year observation is equally weighted in each regression. Weighting observations by $\sqrt{(\# \text{ of EOS respondents}_{k,t})}$ yields similar results.

TABLE 6
Changes in SFARS Regression Estimates

Variable/Estimate	Dependent Variable = $\Delta SFARS$	
	Coeff.	Std. Dev.
lag($\Delta SFARS$)	0.037	(0.039)
lag(Δ Stock Market Cap)	0.043	(0.026)*
lag(Δ Listed Firms)	-0.022	(0.012)*
lag(Δ Stock Trading Volume)	-0.071	(0.036)*
lag(Δ Private Credit)	-0.024	(0.054)
lag(Δ Bank Credit)	-0.045	(0.076)
log(Δ GDP)	0.135	(0.064)**
Δ GDP Growth	0.069	(0.038)*
Δ Unemployment	-0.012	(0.033)
Δ Inflation	-0.910	(4.667)
Δ FDI	0.003	(0.006)
lag(Δ Capacity for Innovation)	-0.043	(0.060)
Δ Voice and Accountability	0.087	(0.039)**
Δ Political Stability	-0.013	(0.038)
Δ Regulatory Quality	0.036	(0.046)
Δ Government Effectiveness	0.066	(0.039)*
Δ Rule of Law	0.032	(0.045)
Δ Control of Corruption	-0.024	(0.041)
Year and Country FE	Yes	
Country-Clustered SE	Yes	
R ²	0.188	
n	1017	

** , * Denote statistical significance against a null of 0 at the 5 percent and 10 percent levels, respectively.

This table presents regression estimates of $\Delta SFARS_{k,t} = \alpha_t + \alpha_k + \beta_p \Delta SFARS_{k,t-1} + \Gamma \cdot \mathbf{X}_{k,t} + \varepsilon_{k,t}$. All variables have been standardized to be mean-zero and unit-variance. Heteroscedasticity robust standard errors clustered by country are reported right of coefficient estimates.

Variable Definitions:

SFARS = the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys;

$\mathbf{X}_{k,t}$ = a vector of control variables and Δ indicates a change;

Stock Market Cap = equity market capitalization as a percentage of GDP;

Listed Firms = the number of publicly listed firms per million population;

Stock Trading Volume = the value of listed company stock traded divided by GDP;

Private Credit = domestic credit provided to the private sector (not just from banks) as a percentage of GDP;

Bank Credit = domestic credit provided by the banking sector as a percentage of GDP. that includes changes in: log(*GDP*), *GDP Growth*, *Unemployment*,

Inflation, *FDI*, lagged *Capacity for Innovation*, *Voice and Accountability*, *Political Stability and Absence of Violence*, *Regulatory Quality*,

Government Effectiveness, *Rule of Law*, and *Control of Corruption*;

GDP = gross domestic product per capita in U.S. dollars;

GDP Growth = the year-on-year change in GDP in percent;

Unemployment = the unemployment rate in percent;

Inflation = the annual inflation rate in percent based on the local consumer price index;

FDI = foreign direct investment, net inflows, as a percent of GDP;

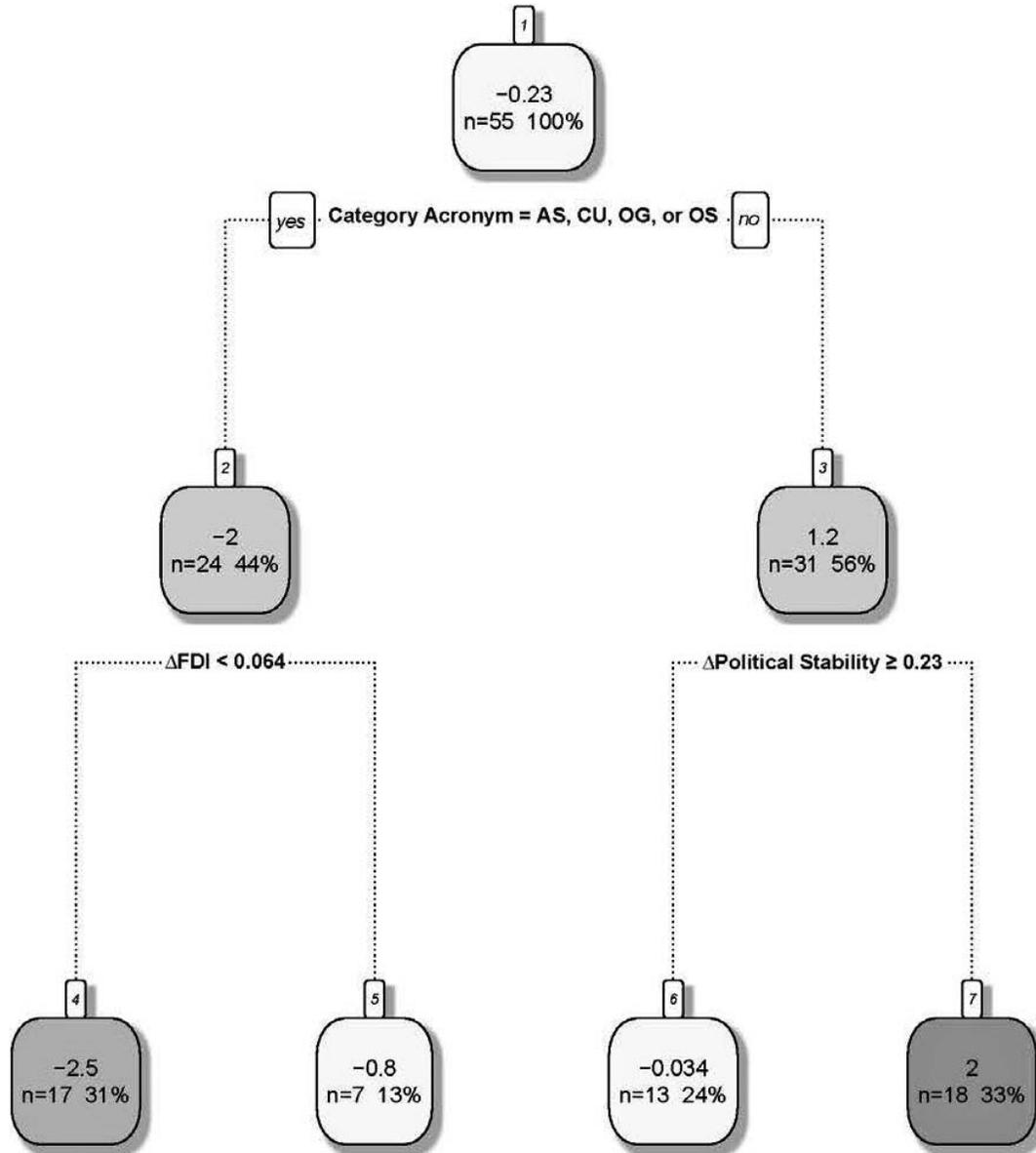
Capacity for Innovation = the perceived capacity for firms in the country to innovate, based on the World Economic Forum's Executive Opinion Surveys; and

Voice and Accountability, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption* = measures of institutional quality taken from the World Bank's Governance Indicators data set (Kaufmann et al. 2010).

*GDP Growth*_{k,t}, *Unemployment*_{k,t}, *Inflation*_{k,t}, *FDI*_{k,t}, *Capacity for Innovation*_{k,t-1}, *Voice and Accountability*_{k,t}, *Political Stability and Absence of Violence*_{k,t}, *Regulatory Quality*_{k,t}, *Government Effectiveness*_{k,t}, *Rule of Law*_{k,t}, and *Control of Corruption*_{k,t}. *Capacity for Innovation* is lagged so that it aligns with *SFARS* and is taken from the same survey. Country and year fixed effects are included, and standard errors are clustered by country to allow for correlation across compatriot observations.¹⁸

¹⁸ Year fixed effects should absorb global shocks, but clustering by both country and year yields similar results. Thanks to Mark Ma and John McInnis for providing code for two-way clustering, for which unbiased finite-sample estimates are obtained by adjusting the clustered standard error by $(N-1)/(N-P) \times G/(G-1)$, where N is the sample size, P is the number of independent variables, and G is the number of clusters.

FIGURE 2
Regression Tree Explaining Large $\Delta SFARS$ Residuals



This figure presents estimates of a regression tree meant to explain, via recursive partitioning, variation in the top 55 unexpected changes in *SFARS*, based on absolute regression residuals from the model whose estimates appear in Table 6. The regression tree was estimated using the *r-part* procedure in R (ANOVA method, with complexity parameter set to 0.01). Explanatory variables included in the model were *Category* indicators as listed in Table 13, and all of the explanatory variables included in the Table 6 specification (including year, but excluding country fixed effects). Each node in the recursive partition plot provides the mean value for the $\Delta SFARS$ residual (top number in each box), the number of observations at the node, and the fraction of the sample represented by the node. Below the top two levels, splits are indicated, with conditions. Satisfied conditions split to the left, and unsatisfied conditions split to the right. For instance, node 3 represents 31 country-years (56 percent of the sample) with *Category* Acronyms *not* in the set (AS [Accounting Scandal], CU [Civil Unrest], OG [Other Governance Change], and OS [Other Scandal]), which have an average $\Delta SFARS$ residual value of 1.2.

Focusing first on equity market development, Models 1 and 2 capture equity market size with *Stock Market Cap_{k,t}* and *Listed Firms_{k,t}* as the dependent variables. The coefficient on lagged *SFARS* in the first model is positive but not statistically significant, while the coefficient in the model with *Listed Firms* as the dependent variable is positive and significant at the 10 percent level ($\beta = 0.109$). This provides mixed evidence for an association between *SFARS* and future equity market size.

TABLE 7
Correlations

Panel A: Raw Correlations

Variable	1	2	3	4	5	6	7	8	9
1. SFARS	1.00	0.44	0.30	0.38	0.60	0.58	0.70	-0.16	-0.14
2. Stock Market Cap	0.73	1.00	0.49	0.84	0.50	0.49	0.36	-0.03	-0.11
3. Listed Firms	0.64	0.82	1.00	0.38	0.36	0.40	0.33	-0.04	0.06
4. Stock Trading Volume	0.66	0.92	0.76	1.00	0.53	0.47	0.36	-0.05	-0.14
5. Private Credit	0.64	0.69	0.64	0.66	1.00	0.94	0.66	-0.22	-0.13
6. Bank Credit	0.63	0.67	0.64	0.64	0.99	1.00	0.66	-0.22	-0.15
7. GDP	0.70	0.66	0.65	0.64	0.72	0.72	1.00	-0.22	-0.08
8. GDP Growth	-0.24	-0.16	-0.21	-0.18	-0.33	-0.32	-0.38	1.00	-0.06
9. Unemployment	-0.11	-0.11	-0.01	-0.11	-0.11	-0.12	-0.04	-0.11	1.00
10. Inflation	-0.38	-0.37	-0.37	-0.33	-0.45	-0.46	-0.47	0.25	0.04
11. FDI	-0.31	-0.36	-0.24	-0.41	-0.27	-0.26	-0.37	0.27	0.18
12. Capacity for Innovation	0.60	0.57	0.44	0.61	0.58	0.57	0.63	-0.23	-0.18
13. Voice and Accountability	0.60	0.48	0.51	0.44	0.55	0.54	0.65	-0.34	0.08
14. Political Stability and Absence of Violence	0.60	0.35	0.44	0.30	0.50	0.52	0.68	-0.24	-0.05
15. Regulatory Quality	0.80	0.69	0.69	0.65	0.71	0.71	0.83	-0.32	-0.05
16. Government Effectiveness	0.82	0.73	0.72	0.71	0.75	0.75	0.84	-0.30	-0.05
17. Rule of Law	0.80	0.66	0.68	0.63	0.71	0.72	0.80	-0.29	-0.04
18. Control of Corruption	0.78	0.63	0.65	0.59	0.68	0.69	0.79	-0.29	-0.03

Panel B: Raw Correlations (continued)

Variable	10	11	12	13	14	15	16	17	18
1. SFARS	0.01	-0.12	0.63	0.60	0.59	0.78	0.82	0.79	0.78
2. Stock Market Cap	-0.01	-0.07	0.31	0.23	0.26	0.45	0.45	0.42	0.43
3. Listed Firms	-0.01	0.03	0.16	0.26	0.28	0.36	0.36	0.36	0.36
4. Stock Trading Volume	-0.01	-0.05	0.38	0.21	0.21	0.41	0.43	0.40	0.40
5. Private Credit	-0.14	-0.12	0.59	0.53	0.46	0.68	0.73	0.71	0.69
6. Bank Credit	-0.15	-0.12	0.55	0.53	0.48	0.68	0.73	0.71	0.70
7. GDP	-0.05	-0.13	0.65	0.64	0.66	0.81	0.84	0.81	0.79
8. GDP Growth	-0.04	0.04	-0.14	-0.22	-0.14	-0.19	-0.20	-0.19	-0.19
9. Unemployment	-0.01	0.08	-0.23	0.00	-0.05	-0.10	-0.13	-0.11	-0.11
10. Inflation	1.00	0.00	-0.04	-0.05	-0.03	-0.07	-0.04	-0.05	-0.04
11. FDI	0.26	1.00	-0.11	-0.09	-0.05	-0.09	-0.12	-0.12	-0.12
12. Capacity for Innovation	-0.46	-0.35	1.00	0.56	0.47	0.67	0.73	0.71	0.69
13. Voice and Accountability	-0.39	-0.22	0.52	1.00	0.67	0.79	0.77	0.79	0.77
14. Political Stability and Absence of Violence	-0.40	-0.12	0.47	0.70	1.00	0.73	0.74	0.78	0.76
15. Regulatory Quality	-0.53	-0.26	0.63	0.79	0.74	1.00	0.94	0.93	0.89
16. Government Effectiveness	-0.51	-0.31	0.67	0.77	0.76	0.93	1.00	0.96	0.94
17. Rule of Law	-0.50	-0.29	0.64	0.77	0.80	0.91	0.94	1.00	0.96
18. Control of Corruption	-0.48	-0.27	0.60	0.77	0.79	0.89	0.93	0.95	1.00

Panel C: Country-Adjusted Correlations

Variable	1	2	3	4	5	6	7	8	9
1. SFARS	1.00	0.08	0.07	0.06	0.05	0.05	0.19	0.03	-0.22
2. Stock Market Cap	0.19	1.00	0.18	0.63	0.12	0.11	0.06	0.06	-0.08
3. Listed Firms	0.07	0.28	1.00	0.07	0.01	0.02	-0.02	0.04	-0.03
4. Stock Trading Volume	0.12	0.52	0.19	1.00	0.08	0.07	0.06	0.04	-0.09
5. Private Credit	0.09	0.07	-0.03	0.12	1.00	0.98	0.42	-0.18	0.01
6. Bank Credit	0.09	0.04	-0.02	0.11	0.98	1.00	0.41	-0.18	0.01
7. GDP	0.15	0.05	-0.10	0.06	0.51	0.51	1.00	-0.04	-0.29

(continued on next page)

TABLE 7 (continued)

Variable	1	2	3	4	5	6	7	8	9
8. GDP Growth	0.09	0.21	0.07	0.19	-0.28	-0.28	-0.15	1.00	-0.09
9. Unemployment	-0.19	-0.10	-0.10	-0.13	-0.06	-0.06	-0.33	-0.10	1.00
10. Inflation	-0.05	0.00	0.08	0.06	-0.10	-0.10	-0.16	0.07	-0.13
11. FDI	-0.01	0.04	0.04	0.06	-0.04	-0.02	-0.05	0.16	-0.02
12. Capacity for Innovation	0.15	-0.01	-0.11	-0.11	0.12	0.12	0.30	0.00	-0.11
13. Voice and Accountability	0.02	0.09	0.00	0.00	0.00	0.02	-0.02	0.16	-0.01
14. Political Stability and Absence of Violence	0.18	0.03	-0.03	0.02	0.01	0.02	0.10	0.10	-0.13
15. Regulatory Quality	0.24	0.08	0.06	0.05	0.12	0.13	0.21	0.05	-0.19
16. Government Effectiveness	0.23	0.14	0.10	0.06	0.04	0.06	0.05	0.04	-0.15
17. Rule of Law	0.18	0.01	-0.05	0.00	0.17	0.18	0.17	-0.03	-0.01
18. Control of Corruption	0.18	0.06	0.05	0.02	-0.01	0.02	-0.02	0.10	-0.06

Panel D: Country-Adjusted Correlations (continued)

Variable	10	11	12	13	14	15	16	17	18
1. SFARS	-0.01	-0.02	0.14	-0.02	0.20	0.25	0.25	0.17	0.20
2. Stock Market Cap	0.00	-0.05	-0.02	0.07	0.02	0.05	0.09	0.06	0.02
3. Listed Firms	0.00	0.03	-0.08	0.01	-0.01	-0.05	-0.04	-0.03	-0.03
4. Stock Trading Volume	0.00	0.02	-0.06	0.00	0.02	0.04	0.08	0.04	0.02
5. Private Credit	0.00	-0.02	0.11	0.01	-0.02	0.11	0.06	0.15	0.01
6. Bank Credit	0.00	-0.02	0.10	0.02	-0.01	0.12	0.06	0.17	0.03
7. GDP	-0.03	0.00	0.32	-0.01	0.10	0.20	0.08	0.16	0.05
8. GDP Growth	-0.02	-0.01	-0.01	0.13	0.06	0.03	-0.01	-0.01	0.05
9. Unemployment	0.00	0.00	-0.07	-0.05	-0.14	-0.13	-0.11	-0.02	-0.10
10. Inflation	1.00	0.00	-0.03	-0.02	-0.01	-0.03	-0.01	-0.03	-0.01
11. FDI	0.12	1.00	0.01	-0.01	-0.03	0.05	0.01	-0.04	-0.03
12. Capacity for Innovation	-0.23	-0.04	1.00	-0.02	0.06	0.06	0.15	0.17	0.05
13. Voice and Accountability	0.03	0.03	0.01	1.00	0.16	0.13	0.09	0.30	0.30
14. Political Stability and Absence of Violence	-0.04	0.01	0.10	0.17	1.00	0.21	0.25	0.33	0.22
15. Regulatory Quality	-0.06	0.05	0.05	0.19	0.17	1.00	0.45	0.51	0.38
16. Government Effectiveness	-0.08	-0.05	0.13	0.12	0.22	0.39	1.00	0.46	0.43
17. Rule of Law	-0.13	-0.05	0.16	0.27	0.26	0.42	0.38	1.00	0.42
18. Control of Corruption	-0.04	-0.02	0.04	0.32	0.18	0.31	0.36	0.34	1.00

This table presents Pearson (Spearman) correlation coefficients below (above) the diagonal. Raw correlations are in Panel A and Panel B, while correlations of country-adjusted values (i.e., after subtracting the country-level mean) are shown in Panel C and Panel D. Bold correlations are significantly different from 0 at the 1 percent level. The unit of observation is the country-year. This table presents descriptive statistics for the sample. *n* is the number of observations. Std. Dev. is standard deviation. The number observations used to compute the correlation in each cell is reported in the Online Appendix Table IA.I.

Variable Definitions:

SFARS = the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys;

Stock Market Cap = equity market capitalization as a percentage of GDP;

Listed Firms = the number of publicly listed firms per million population;

Stock Trading Volume = the value of listed company stock traded divided by GDP;

Private Credit = domestic credit provided to the private sector (not just from banks) as a percentage of GDP;

Bank Credit = domestic credit provided by the banking sector as a percentage of GDP;

GDP = gross domestic product per capita in U.S. dollars;

GDP Growth = the year-on-year change in GDP in percent;

Unemployment = the unemployment rate in percent;

Inflation = the annual inflation rate in percent based on the local consumer price index;

FDI = foreign direct investment, net inflows, as a percent of GDP;

Capacity for Innovation = the perceived capacity for firms in the country to innovate, based on the World Economic Forum's Executive Opinion Surveys; and

Voice and Accountability, Political Stability and Absence of Violence, Regulatory Quality, Government Effectiveness, Rule of Law, and Control of Corruption = measures of institutional quality taken from the World Bank's Governance Indicators data set (Kaufmann et al. 2010).

TABLE 8
SFARS and Capital Market Development

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.017 (0.017)	0.109* (0.065)	0.047** (0.020)	0.059** (0.023)	0.058** (0.026)	0.639*** (0.036)
lag(<i>Stock Market Cap</i>)	0.575*** (0.043)	0.109 (0.070)	0.318*** (0.087)	0.052*** (0.013)	0.051*** (0.014)	0.049** (0.020)
lag(<i>Listed Firms</i>)	-0.001 (0.034)	-0.242 (0.165)	-0.021* (0.012)	-0.027*** (0.004)	-0.026*** (0.006)	-0.014** (0.005)
lag(<i>Stock Trading Volume</i>)	-0.040** (0.019)	0.017 (0.038)	0.432*** (0.041)	-0.008 (0.007)	-0.002 (0.007)	-0.051*** (0.019)
lag(<i>Private Credit</i>)	0.069 (0.075)	-0.262 (0.176)	0.334 (0.310)	0.751*** (0.106)	0.000 (0.068)	-0.198* (0.117)
lag(<i>Bank Credit</i>)	-0.072 (0.077)	0.249 (0.228)	-0.401 (0.325)	0.077 (0.101)	0.840*** (0.070)	0.008 (0.116)
log(GDP)	-0.086 (0.158)	-0.063 (0.348)	-0.152 (0.141)	0.121* (0.064)	0.088 (0.064)	0.222* (0.128)
GDP Growth	0.003 (0.009)	0.013 (0.021)	0.001 (0.009)	-0.015*** (0.004)	-0.015*** (0.004)	0.003 (0.015)
Unemployment	0.009 (0.032)	-0.050 (0.050)	0.048 (0.041)	-0.043** (0.020)	-0.050** (0.022)	-0.033 (0.031)
Inflation	5.145** (2.339)	0.249 (1.612)	0.482 (1.039)	-1.092* (0.623)	-1.618*** (0.547)	-1.080 (1.810)
FDI	-0.018 (0.014)	0.020* (0.011)	0.012*** (0.004)	-0.004* (0.002)	-0.004 (0.002)	0.001 (0.002)
lag(<i>Capacity for Innovation</i>)	0.034 (0.028)	-0.057 (0.066)	0.047 (0.040)	-0.001 (0.022)	-0.001 (0.023)	0.009 (0.038)
Voice and Accountability	0.101 (0.135)	0.119 (0.112)	-0.105 (0.086)	0.084** (0.036)	0.096*** (0.032)	0.015 (0.109)
Political Stability	-0.028 (0.030)	-0.013 (0.053)	-0.006 (0.032)	-0.019 (0.013)	-0.019 (0.014)	0.060 (0.041)
Regulatory Quality	0.015 (0.052)	-0.164 (0.150)	-0.041 (0.055)	0.009 (0.026)	0.019 (0.027)	0.045 (0.066)
Government Effectiveness	0.197 (0.125)	-0.042 (0.146)	0.068 (0.117)	-0.040 (0.040)	-0.050 (0.035)	0.057 (0.074)
Rule of Law	0.004 (0.062)	-0.006 (0.156)	0.138* (0.077)	-0.045 (0.054)	-0.036 (0.055)	-0.017 (0.118)
Control of Corruption	-0.062 (0.070)	-0.338* (0.177)	-0.004 (0.089)	-0.032 (0.033)	-0.017 (0.034)	-0.009 (0.086)
Year and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.924	0.775	0.907	0.989	0.990	0.954
n	1145	1166	1163	1175	1175	1179

***, **, * Denote statistical significance against a null of 0 at the 1 percent, 5 percent, and 10 percent levels, respectively. This table presents regression estimates of $CMD_{k,t} = \alpha_t + \alpha_k + \beta_p SFARS_{k,t-1} + \Gamma \cdot \mathbf{X}_{k,t} + \varepsilon_{k,t}$. All variables have been standardized to be mean-zero and unit-variance. Heteroscedasticity robust standard errors clustered by country are reported below coefficient estimates.

Variable Definitions:

CMD = one of *Stock Market Cap*, *Listed Firm*, *Stock Trading Volume*, *Private Credit*, or *Bank Credit*;

SFARS = the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys;

Stock Market Cap = equity market capitalization as a percentage of GDP;

(continued on next page)

TABLE 8 (continued)

Listed Firms = the number of publicly listed firms per million population;
Stock Trading Volume = the value of listed company stock traded divided by GDP;
Private Credit = domestic credit provided to the private sector (not just from banks) as a percentage of GDP;
Bank Credit = domestic credit provided by the banking sector as a percentage of GDP;
 $\mathbf{X}_{k,t}$ = a vector of control variables that includes: $\log(\text{GDP})$, *GDP Growth*, *Unemployment*, *Inflation*, *FDI*, lagged *Capacity for Innovation*, *Voice and Accountability*, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption*;
GDP = gross domestic product per capita in U.S. dollars;
GDP Growth = the year-on-year change in GDP in percent;
Unemployment = the unemployment rate in percent;
Inflation = the annual inflation rate in percent based on the local consumer price index;
FDI = foreign direct investment, net inflows, as a percent of GDP;
Capacity for Innovation = the perceived capacity for firms in the country to innovate, based on the World Economic Forum's Executive Opinion Surveys;
and
Voice and Accountability, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption* = measures of institutional quality taken from the World Bank's Governance Indicators data set (Kaufmann et al. 2010).

Turning to equity market activity, as captured by *Stock Trading Volume* $_{k,t}$, the coefficient on *SFARS* in Model 3 is positive ($\beta = 0.047$) and statistically significant at the 5 percent level. This suggests that investors can be expected to trade more when they are more confident about the quality of disclosures. *Stock Trading Volume* $_{k,t}$ is also positive and significantly associated with prior levels of equity market size and activity, *FDI*, and institutional quality as reflected in *Rule of Law* $_{k,t}$.

Models 4 and 5 focus on credit market development. For both *Private Credit* $_{k,t}$ and *Bank Credit* $_{k,t}$, the coefficient on *SFARS* $_{k,t-1}$ is positive and significant at the 5 percent level ($\beta = 0.059$ in Model 4 and $\beta = 0.058$ in Model 5), suggesting that markets with higher values of *SFARS* can expect higher levels of lending to the private sector (in general and from banks in particular). Lagged proxies for equity market size also have significant explanatory power, as do macroeconomic state variables related to GDP growth, unemployment, and inflation. The significant coefficients in Models 2, 3, 4, and 5 suggest that a one standard-deviation increase in *SFARS* is associated with increases in expected listed firms per million population of approximately 11 percent of a standard deviation, stock trading volume relative to GDP of approximately 5 percent of a standard deviation, and expected credit to the private sector (from all sources or from banks in particular) relative to GDP of roughly 6 percent of a standard deviation.

Model 6 of Table 8 presents estimates with *SFARS* $_{k,t}$ as the dependent variable. Results of this model suggest that *SFARS* has significant positive conditional autocorrelation, and that *SFARS* is also conditionally associated with higher lagged *Stock Market Cap* and current *GDP*, and lower *Listed Firms*, *Stock Trading Volume*, and *Private Credit*. Given that *SFARS* comoves with four out of five of the dependent variables of interest, the next section discusses results from several alternative specifications.

Alternative Specifications

This section presents results from alternative specifications. Broadly, the main inferences are sensitive to specification choices as described below. Table 9 presents results from a changes specification of Equation (2). The coefficients on the lagged change in *SFARS* are positive and significant ($p < 0.05$) for Models 4 and 5 focusing on credit outcomes. The coefficients in Models 1, 2, and 3 are not significantly different from 0. An examination of the coefficients on the lagged changes in the capital market development variables suggests that changes in these tend to be conditionally mean-reverting.

Table 10 presents results for alternative specifications as follows (which are presented in greater detail in the Online Appendix; see Appendix B for the link to the downloadable document):

- A. Equity market development variables (*Stock Market Cap*, *Listed Firms*, and *Stock Trading Volume*) with missing values are left missing rather than replaced by 0. This results in samples of 813 to 854 country-years. This addresses the potential for spurious inference based on coding missing values as 0 and eliminates country-years that lack evidence of stock markets.
- B. Capital market development indicators are scaled by lagged GDP rather than current GDP or population. This specification addresses potential issues with *SFARS* affecting the outcome via an effect on concurrent GDP, but it may introduce negative bias from reverse causality if lower lagged values of GDP cause lower lagged *SFARS* (see, e.g., Table 6 and Table 8, Model 6) and, mechanically, higher values of the dependent variables.
- C. Capital market development indicators are scaled by lagged Stock Market Capitalization, defined as *Stock Market Cap* * *GDP* (per capita) * *Population*. With this specification, *Stock Market Cap* (scaled by lagged stock market

TABLE 9
SFARS and Capital Market Development—Changes Analysis

Variable/Model	Dependent Variable				
	1. <i>ΔStock Market Cap</i>	2. <i>ΔListed Firms</i>	3. <i>ΔStock Trading Volume</i>	4. <i>ΔPrivate Credit</i>	5. <i>ΔBank Credit</i>
lag(<i>ΔSFARS</i>)	−0.017 (0.017)	−0.002 (0.010)	0.015 (0.019)	0.072** (0.036)	0.073* (0.038)
lag(<i>ΔStock Market Cap</i>)	−0.290*** (0.080)	0.004 (0.018)	0.295*** (0.089)	0.088*** (0.022)	0.080*** (0.026)
lag(<i>ΔListed Firms</i>)	−0.019 (0.015)	−0.671 (0.017)	−0.035** (0.015)	−0.019** (0.009)	−0.022*** (0.008)
lag(<i>ΔStock Trading Volume</i>)	−0.399*** (0.136)	−0.002 (0.007)	−0.208*** (0.075)	−0.124*** (0.021)	−0.118*** (0.022)
lag(<i>ΔPrivate Credit</i>)	0.084 (0.087)	0.040 (0.025)	0.235* (0.135)	−0.254*** (0.048)	−0.076 (0.066)
lag(<i>ΔBank Credit</i>)	−0.197 (0.146)	−0.063* (0.033)	−0.347* (0.183)	0.363** (0.144)	0.219 (0.159)
<i>Δlog(GDP)</i>	0.034 (0.041)	−0.006 (0.029)	−0.088* (0.050)	−0.086 (0.074)	−0.101 (0.074)
<i>ΔGDP Growth</i>	0.053* (0.029)	0.020 (0.022)	0.026 (0.017)	−0.115** (0.045)	−0.113** (0.045)
<i>ΔUnemployment</i>	0.006 (0.016)	−0.012 (0.011)	−0.020 (0.016)	−0.035* (0.019)	−0.039* (0.020)
<i>ΔInflation</i>	9.249*** (3.207)	−0.042 (1.377)	2.677 (3.407)	−6.378 (4.211)	−9.278** (4.277)
<i>ΔFDI</i>	−0.096** (0.045)	0.001 (0.011)	0.026** (0.011)	0.023 (0.015)	0.027* (0.015)
lag(<i>ΔCapacity for Innovation</i>)	0.023 (0.025)	0.019 (0.029)	0.014 (0.024)	0.006 (0.034)	0.011 (0.035)
<i>ΔVoice and Accountability</i>	−0.040** (0.016)	0.003 (0.009)	−0.061** (0.030)	0.023 (0.032)	0.027 (0.025)
<i>ΔPolitical Stability</i>	−0.018 (0.030)	−0.019* (0.011)	−0.032 (0.028)	0.041 (0.026)	0.039 (0.025)
<i>ΔRegulatory Quality</i>	0.018 (0.028)	−0.009 (0.015)	0.019 (0.031)	0.011 (0.029)	0.026 (0.026)
<i>ΔGovernment Effectiveness</i>	0.051* (0.028)	−0.002 (0.016)	0.008 (0.037)	−0.022 (0.037)	−0.027 (0.033)
<i>ΔRule of Law</i>	−0.014 (0.028)	0.009 (0.018)	0.042* (0.024)	0.039 (0.028)	0.022 (0.026)
<i>ΔControl of Corruption</i>	0.056 (0.038)	−0.015 (0.011)	0.045 (0.039)	−0.042 (0.034)	−0.026 (0.035)
Year and Country FE	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes
R ²	0.507	0.707	0.197	0.243	0.269
n	987	1005	1001	1013	1013

***, **, * Denote statistical significance against a null of 0 at the 1 percent, 5 percent, and 10 percent levels, respectively.

This table presents regression estimates of $\Delta CMD_{k,t} = \alpha_t + \alpha_k + \beta_p \Delta SFARS_{k,t-1} + \Gamma \cdot \mathbf{X}_{k,t} + \varepsilon_{k,t}$. All variables have been standardized to be mean-zero and unit-variance. Heteroscedasticity robust standard errors clustered by country are reported below coefficient estimates.

Variable Definitions:

CMD = one of *Stock Market Cap*, *Listed Firm*, *Stock Trading Volume*, *Private Credit*, or *Bank Credit*;

SFARS = the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys;

Stock Market Cap = equity market capitalization as a percentage of GDP;

(continued on next page)

TABLE 9 (continued)

Listed Firms = the number of publicly listed firms per million population;
Stock Trading Volume = the value of listed company stock traded divided by GDP;
Private Credit = domestic credit provided to the private sector (not just from banks) as a percentage of GDP;
Bank Credit = domestic credit provided by the banking sector as a percentage of GDP;
 $\mathbf{X}_{k,t}$ = a vector of control variables that includes: $\log(\text{GDP})$, *GDP Growth*, *Unemployment*, *Inflation*, *FDI*, lagged *Capacity for Innovation*, *Voice and Accountability*, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption*;
GDP = gross domestic product per capita in U.S. dollars;
GDP Growth = the year-on-year change in GDP in percent;
Unemployment = the unemployment rate in percent;
Inflation = the annual inflation rate in percent based on the local consumer price index;
FDI = foreign direct investment, net inflows, as a percent of GDP;
Capacity for Innovation = the perceived capacity for firms in the country to innovate, based on the World Economic Forum's Executive Opinion Surveys; and
Voice and Accountability, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption* = measures of institutional quality taken from the World Bank's Governance Indicators data set (Kaufmann et al. 2010).

capitalization) captures market cap growth, *Listed Firms* captures the average inverse market capitalization of listed firms, *Stock Trading Volume* captures share turnover in terms of traded value relative to value outstanding, and the *Private Credit* and *Bank Credit* variables capture changes in the relative importance of debt versus equity financing. Because this specification requires positive values of lagged *Stock Market Cap*, it is limited to roughly 810 to 900 country-years. This specification also potentially introduces negative bias, similar to the bias discussed in specification B, but due to effects of market capitalization on *SFARS*.

- D. Country-years in the lowest quartile of *GDP* (per capita) are excluded. This specification eliminates country-years with low levels of development. These countries may have suffered from prolonged periods of instability (e.g., civil unrest) in the sample period or may, broadly, represent a different data-generating process.
- E. Country-years with the number of GCR respondents in the lowest decile are excluded. This limits country-years to those with at least 43 GCR respondents and limits the potential for results to be based on country-years with few respondents, where the average reported in the GCR may be noisier or more volatile.
- F. Hong Kong's macroeconomic variables are replaced by the sum of Hong Kong and mainland China's. This includes rescaling the capital market development indicators by joint GDP and/or population. Hong Kong SAR is a substantial outlier with respect to its values for the capital market development proxies, given that the numerators each capture a large portion of the mainland China capital market and the denominators are Hong Kong's city-level GDP or population. Hong Kong's average Stock Market Cap in the sample period, for instance, is 825, which is nearly 20 times the sample average of 45.
- G. Controls for institutional quality are excluded. These may be confounding control variables because they may cause confidence in financial auditing and reporting standards.

As mentioned above, results are sensitive to variable definitions and sample restrictions. The positive and significant association between *SFARS* and future credit market indicators are maintained in rows A, D, E, F, and G. Changing the scalar in Rows B and C yields coefficients of interest that are positive but not significantly different from 0. These may be due to mechanical effects related to reverse causality driven by the scaling variables, as described above. In Row B, *GDP Growth* enters positive and significantly, in contrast to its negative and significant coefficients in models 4 and 5 of Table 8. In Row C, lagged *Stock Market Cap* enters negative and significantly, in contrast to its positive and significant coefficients in Models 4 and 5 of Table 8.

For outcomes related to equity market development, coefficients on lagged *SFARS* are positive and significantly related to future *Stock Trading Volume* in five out of the seven alternative specifications (Rows B, D, E, F, and G). Dropping missing values rather than replacing them with 0 (Row A) and scaling by stock market capitalization (Row C) yield positive but insignificant coefficients. Across the seven alternative specifications, *SFARS* is not consistently related to future *Stock Market Cap* or *Listed Firms*. Interestingly, Row F, which replaces Hong Kong SAR's macroeconomic variables with those of Hong Kong and mainland China, yields estimates in which *SFARS* is positive and significantly related to all five of the outcome variables of interest.

Overall, the results presented in the changes specification of Table 9 and the alternative specifications in Table 10 generally support the association between *SFARS* and credit market development, although not unanimously. Support for a positive association between *SFARS* and equity market development is insufficient to conclude a robust association exists. Broadly, these results highlight difficulties in measuring capital market development, particularly relating to issues of small or

TABLE 10
Coefficients on Lagged SFARS for Alternative Variable Definitions and Sample Restrictions

Specification Change Relative to Table 8	Dependent Variable/Model					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
A. Blanks for <i>Stock Market Cap</i> , <i>Listed Firms</i> , and <i>Stock Trading Volume</i> dropped	-0.012 (0.023)	0.025 (0.017)	0.038 (0.027)	0.077** (0.034)	0.073* (0.038)	0.595*** (0.044)
B. Capital market development indicators scaled by lagged <i>GDP</i>	0.018 (0.020)	0.063* (0.033)	0.048** (0.023)	0.038 (0.027)	0.042 (0.028)	0.649*** (0.041)
C. Capital market indicators scaled by lagged total <i>Stock Market Cap</i> (<i>Stock Market Cap</i> * <i>Total GDP</i>)	-0.003 (0.003)	0.000 (0.000)	0.001 (0.003)	0.004 (0.024)	0.004 (0.024)	0.551*** (0.042)
D. Excluding country-years in lowest quartile of <i>GDP</i> per Capita	0.015 (0.023)	0.127 (0.084)	0.063** (0.027)	0.065** (0.029)	0.063* (0.033)	0.619*** (0.044)
E. Excluding country-years in lowest decile of GCR responses	0.012 (0.018)	0.105 (0.076)	0.044* (0.023)	0.053*** (0.018)	0.048** (0.019)	0.630*** (0.038)
F. Replacing Hong Kong's macro variables with China's	0.059* (0.033)	0.129* (0.075)	0.084*** (0.030)	0.061** (0.024)	0.060** (0.026)	0.640*** (0.036)
G. Dropping institutional quality controls	0.028** (0.014)	0.058 (0.047)	0.057** (0.022)	0.049** (0.022)	0.049** (0.024)	0.652*** (0.033)

***, **, * Denote statistical significance against a null of 0 at the 1 percent, 5 percent, and 10 percent levels, respectively.

This table presents β_p coefficient and standard error estimates from alternative specifications of the Table 8 regression, $CMD_{k,t} = \alpha_t + \alpha_k + \beta_p SFARS_{k,t-1} + \Gamma \cdot X_{k,t} + \varepsilon_{k,t}$. CMD is one of *Stock Market Cap*, *Listed Firms*, *Stock Trading Volume*, *Private Credit*, or *Bank Credit*. $SFARS$ is the perceived strength of financial auditing and reporting standards, taken from the World Economic Forum's Executive Opinion Surveys. The following controls are included, but their coefficients are suppressed: lagged *Stock Market Cap*, lagged *Listed Firms*, lagged *Stock Trading Volume*, lagged *Private Credit*, lagged *Bank Credit*, $\log(GDP)$, *GDP Growth*, *Unemployment*, *Inflation*, *FDI*, lagged *Capacity for Innovation*, *Voice and Accountability*, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption*. Variable definitions are in the note to Table 8 and Appendix A. All variables have been standardized to be mean-zero and unit-variance. Heteroscedasticity robust standard errors clustered by country are reported below coefficient estimates. Additional regression output (Coefficients on control variables, R^2 , and number of observation) for each specification presented here are provided in Appendix A.

nonexistent stock markets or choosing scaling variables. Issues related to scaling variables are common in accounting and finance research (e.g., whether to scale analyst forecasts by stock price, actual earnings, or something else).

Cross-Sectional Heterogeneity in the SFARS-Capital Market Development Associations

Disclosure quality does not exist in a vacuum. Corporate disclosures are but one part of a vast ecosystem of macroeconomic and institutional features with which disclosure quality plausibly interacts. Prior literature provides little direct guidance with respect to how confidence in disclosure quality might interact with other features of this broader ecosystem. For example, corruption, an important cultural dimension, can plausibly act as a complement or a substitute to high-quality disclosures: in low-corruption jurisdictions, financial reports might be given more credence, but can be less important when managers and other elites corruptly expropriate value less often.

This section examines variation in the associations between *SFARS* and capital market development across jurisdictions along four broad dimensions (indicators in parentheses): capital market characteristics (number of listed firms, age of the country's oldest stock market, *Private Credit*, and $\left(\frac{\text{Stock Market Cap}}{\text{Private Credit}}\right)$, which captures the importance of equity relative to debt financing), institutional characteristics (legal origin, investor protection, and institutional quality),¹⁹ general development (*GDP*

¹⁹ Legal origin comes from Djankov et al. (2007). Investor protection is a factor based on the Strength of Investor Protection Index (taken from the World Bank's Doing Business Report and reported in the GCR) and EOS responses to the Protection of Minority Shareholders' Interest question, which asks respondents, "In your country, to what extent are the interests of minority shareholders protected by the legal system? (1 = not protected at all; 7 = fully protected)." Institutional quality is a factor based on the six World Bank Governance Indicators variables (Kaufmann et al. 2010) used as controls in Tables 8 and 9: *Voice and Accountability*, *Political Stability and Absence of Violence*, *Regulatory Quality*, *Government Effectiveness*, *Rule of Law*, and *Control of Corruption*. Data on the founding year of the country's oldest stock market comes from Wikipedia lists of stock markets by geographic region (https://en.wikipedia.org/wiki/List_of_stock_exchanges, accessed December 7, 2018).

per capita and total GDP), and the level of *SFARS*. Each of these dimensions may have a complementary or substitutive relation with *SFARS vis a vis* capital market development, so I provide descriptive evidence based on tests against a null of no interactive effect.

For the continuous indicators, I estimate variants of Equation (2), with the addition of a dummy variable for above-median values of each indicator and an interaction between $SFARS_{k,t-1}$ and the dummy variable. For legal origin tests, $SFARS_{k,t-1}$ is interacted with dummies for each legal origin, with the main effects of legal origin absorbed by country fixed effects. Estimates of the coefficients of interest are reported in Table 11, Panels A through J. For the most part, coefficients on the interactions between $SFARS_{k,t-1}$ and dummies for above-median indicator values are not significantly different from 0.

Panel E presents results of the regression with the coefficient on $SFARS_{k,t-1}$ estimated separately for each legal origin. Interestingly, *SFARS* is positively associated with future levels of credit market development in countries with English and German legal origins but negatively associated with future credit market development in Scandinavian origin countries. It could be that the negative effect of public information provided by high quality financial reporting on relation-based lending dominates the positive effect on arms-length lending in Scandinavian-origin countries. Which aspects of the legal system drive this conditional association, or whether there are other features specific to Scandinavian-origin countries that drive it, is unclear. The evidence in the other panels of Table 11 do not provide support for negative effects of *SFARS* on lending in environments characterized by different levels of capital market development, the prominence of equity versus debt financing, shareholder protection, institutional quality, or macroeconomic development.

Panels H and I present results related to splits on GDP per capita and total GDP, respectively. In these regressions, the main effects of lag(*SFARS*) are positive and significant for credit market development outcomes, as above. Additionally, the main effect is positive and significant in three out of the six regressions with equity market development indicators as dependent variables. This suggests that there may be a positive effect of disclosure confidence on equity market development in smaller, less economically developed countries.

Finally, Panel J splits the main effect based on a median-split of the main independent variable, lagged *SFARS*. The pattern is similar to those in prior splits, with main effects significant for *Private Credit*, *Bank Credit*, and *SFARS*, and insignificant coefficients of interest otherwise. The estimates in this table fail to reject the null of no difference in the relation between *SFARS* and capital market development for observations with higher lagged *SFARS*.

V. SUMMARY AND DISCUSSION

This study examines whether confidence in disclosure quality is associated with capital market development. I focus on market-level outcomes and use a direct measure of confidence in disclosure quality based on survey questions about the strength of financial auditing and reporting standards, *SFARS*. This measure is taken from thousands of surveys of executives conducted annually, worldwide, by the World Economic Forum and its partner institutions. Supporting construct validity, I find that *SFARS* is positively associated with several existing proxies for disclosure quality related to earnings quality, investor responses to earnings announcements, analyst attention, as well as disclosure quality proxies used extensively in prior literature. Consistent with *SFARS* capturing confidence in disclosures, investors respond more strongly to earnings surprises when *SFARS* is higher, and *SFARS* appears to decline following financial reporting and corporate governance scandals that arguably should reduce confidence in corporate disclosures. Large unexpected decreases in *SFARS* are associated with accounting scandals, civil unrest, other governance changes, and other scandals, while large unexpected increases in *SFARS* are associated with capital market reforms, corporate reforms, and periods of civil calm.

In panel regressions with over 1,100 country-year observations, *SFARS* is significantly associated with future credit market development indicators, even after controlling for macroeconomic conditions, existing levels of capital market development, institutional features, growth expectations, and unobservable country features and global shocks. Based on these regressions, a one standard deviation increase in *SFARS* is associated with 0.05 to 0.06 standard deviation increases in credit provided to the private sector (scaled by country-year GDP). In contrast to prior results showing positive relations between disclosure quality and equity market development (La Porta et al. 2006), the results do not consistently imply that *SFARS* is associated with larger or more active stock markets, although the use of country-year observations limits the inferences to relatively short-window interactions between confidence in disclosure quality and capital market development. Overall, the sensitivity of inferences regarding *SFARS* and equity market development is consistent with results reported by Isidro et al. (2016).

The stronger association between *SFARS* and credit market development relative to equity market development may be surprising, given that equity is usually considered more information-sensitive than debt (Fulghieri and Lukin 2001; Myers and Majluf 1984) and that in credit markets, private rather than public information plays an important role in facilitating relationship-based lending (Dang et al. 2014; Petersen and Rajan 1994). As such, reporting and disclosure practices that transform private information into public information can reduce the rents available to banks from prior informational advantages. However, confidence that high quality disclosures will make reliable information available, as reflected in *SFARS*,

TABLE 11
Cross-Sectional Splits

Panel A: Splitting the Main Effect on Number of Listed Firms

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	-0.036 (0.029)	0.159 (0.098)	-0.031 (0.044)	0.099* (0.052)	0.101* (0.058)	0.565*** (0.056)
<i>High # Listed Firms</i>	0.009 (0.032)	0.609** (0.235)	0.088 (0.073)	0.006 (0.024)	0.007 (0.028)	-0.044 (0.055)
lag(SFARS) * <i>High # Listed Firms</i>	0.042* (0.024)	-0.199* (0.117)	0.147*** (0.055)	-0.031 (0.041)	-0.042 (0.046)	0.028 (0.051)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.926	0.937	0.908	0.989	0.989	0.954
n	816	839	833	836	836	839

Panel B: Splitting the Main Effect on Stock Market Age (Sample Limited to Countries with Stock Markets)

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.002 (0.027)	0.162 (0.121)	0.032 (0.036)	0.043* (0.024)	0.047* (0.025)	0.651*** (0.060)
<i>Old Stock Market (> 50 years)</i>	-0.030 (0.038)	0.226* (0.135)	-0.034 (0.118)	-0.037 (0.030)	-0.026 (0.033)	0.016 (0.090)
lag(SFARS) * <i>Old Stock Market</i>	0.017 (0.028)	-0.057 (0.097)	0.049 (0.053)	0.056 (0.039)	0.047 (0.044)	-0.048 (0.074)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.929	0.769	0.908	0.988	0.989	0.952
n	932	951	948	959	959	962

Panel C: Splitting the Main Effect on Private Credit

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.019 (0.016)	0.049 (0.057)	0.024 (0.023)	0.043** (0.018)	0.037* (0.019)	0.649*** (0.046)
<i>High Private Credit</i>	-0.045 (0.037)	-0.090 (0.069)	0.074 (0.068)	0.097*** (0.032)	0.097*** (0.034)	0.028 (0.047)
lag(SFARS) * <i>High Private Credit</i>	-0.007 (0.019)	0.113 (0.105)	0.045 (0.032)	0.028 (0.031)	0.037 (0.033)	-0.026 (0.046)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.924	0.777	0.907	0.989	0.990	0.953
n	1141	1162	1159	1175	1175	1175

(continued on next page)

TABLE 11 (continued)

Panel D: Splitting the Main Effect on Importance of Public Equity Relative to Debt Financing $\left(\frac{\text{Stock Market Cap}}{\text{Private Credit}}\right)$

Variable/Model	Dependent Variable					
	1. Stock Market Cap	2. Listed Firms	3. Stock Trading Volume	4. Private Credit	5. Bank Credit	6. SFARS
lag(SFARS)	0.012 (0.019)	0.098* (0.056)	0.033 (0.021)	0.064** (0.025)	0.064** (0.028)	0.635*** (0.040)
High $\left(\frac{\text{Stock Market Cap}}{\text{Private Credit}}\right)$	0.156** (0.063)	0.246 (0.214)	0.024 (0.085)	-0.013 (0.016)	-0.015 (0.017)	0.036 (0.031)
lag(SFARS) * High $\left(\frac{\text{Stock Market Cap}}{\text{Private Credit}}\right)$	-0.007 (0.026)	-0.066 (0.058)	0.042 (0.038)	-0.012 (0.017)	-0.018 (0.017)	-0.001 (0.032)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.925	0.796	0.907	0.990	0.990	0.953
n	1141	1139	1137	1141	1141	1141

Panel E: Splitting the Main Effect on Legal Origin (as Coded in Djankov et al. [2007])

Variable/Model	Dependent Variable					
	1. Stock Market Cap	2. Listed Firms	3. Stock Trading Volume	4. Private Credit	5. Bank Credit	6. SFARS
lag(SFARS) * English Origin	0.045 (0.043)	0.024* (0.014)	0.068 (0.061)	0.115* (0.060)	0.117* (0.069)	0.693*** (0.056)
lag(SFARS)*French Origin	0.014 (0.026)	0.037** (0.016)	0.021 (0.030)	0.020 (0.013)	0.014 (0.014)	0.629*** (0.056)
lag(SFARS) * German Origin	-0.052 (0.056)	0.086** (0.035)	0.076 (0.082)	0.087** (0.033)	0.090** (0.036)	0.624*** (0.056)
lag(SFARS) * Scandinavian Origin	0.114 (0.124)	0.248 (0.156)	0.544 (0.351)	-0.137*** (0.044)	-0.115*** (0.044)	0.206 (0.284)
lag(SFARS) * Socialist Origin	-0.042 (0.091)	0.396 (0.430)	0.045 (0.126)	-0.010 (0.063)	-0.014 (0.072)	0.561*** (0.105)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.927	0.977	0.907	0.989	0.989	0.953
n	1025	1043	1041	1052	1052	1055

Panel F: Splitting the Main Effect on Investor Protection (EOS_SIP and EOS_PMI Factor)

Variable/Model	Dependent Variable					
	1. Stock Market Cap	2. Listed Firms	3. Stock Trading Volume	4. Private Credit	5. Bank Credit	6. SFARS
lag(SFARS)	0.034 (0.023)	0.110 (0.070)	-0.008 (0.047)	0.046** (0.022)	0.047** (0.024)	0.665*** (0.034)
High Investor Protection	-0.004 (0.026)	0.055 (0.137)	0.129* (0.070)	0.009 (0.020)	0.007 (0.022)	0.070*** (0.027)
lag(SFARS) * High Investor Protection	-0.013 (0.029)	-0.006 (0.055)	0.167* (0.085)	0.010 (0.026)	0.008 (0.028)	-0.016 (0.030)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.946	0.768	0.920	0.990	0.991	0.963
n	917	938	934	944	944	947

(continued on next page)

TABLE 11 (continued)

Panel G: Splitting the Main Effect on Institutional Quality (World Bank Governance Indicators Factor)

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.022 (0.020)	0.070 (0.080)	0.022 (0.026)	0.047*** (0.016)	0.041** (0.017)	0.676*** (0.053)
<i>High Institutional Quality</i>	-0.025 (0.030)	-0.139 (0.124)	0.106** (0.053)	-0.010 (0.026)	0.009 (0.016)	-0.052 (0.054)
lag(SFARS) * <i>High Institutional Quality</i>	-0.012 (0.026)	0.069 (0.077)	0.056 (0.045)	0.025 (0.033)	0.033 (0.035)	-0.076 (0.067)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.924	0.775	0.907	0.989	0.990	0.954
n	1145	1166	1163	1175	1175	1179

Panel H: Splitting the Main Effect on GDP per Capita

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.026 (0.018)	0.085 (0.064)	0.058** (0.023)	0.039** (0.018)	0.043** (0.020)	0.652*** (0.045)
<i>High GDP (per capita)</i>	0.021 (0.041)	0.103 (0.083)	-0.031 (0.035)	0.000 (0.019)	-0.011 (0.018)	0.018 (0.049)
lag(SFARS) * <i>High GDP (per capita)</i>	-0.022 (0.032)	0.042 (0.074)	-0.020 (0.033)	0.046* (0.025)	0.034 (0.028)	-0.031 (0.048)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.924	0.775	0.907	0.989	0.990	0.954
n	1145	1166	1163	1175	1175	1179

Panel I: Splitting the Main Effect on Total GDP

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.078* (0.045)	0.182** (0.091)	0.029 (0.021)	0.043*** (0.016)	0.041** (0.017)	0.664*** (0.042)
<i>High GDP (total)</i>	-0.111 (0.083)	0.085 (0.130)	-0.001 (0.036)	-0.026 (0.020)	-0.023 (0.020)	0.066 (0.064)
lag(SFARS) * <i>High GDP (total)</i>	-0.107 (0.072)	-0.150 (0.092)	0.037 (0.030)	0.034 (0.030)	0.034 (0.033)	-0.055 (0.051)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.924	0.776	0.907	0.989	0.990	0.954
n	1145	1166	1163	1175	1175	1179

(continued on next page)

TABLE 11 (continued)

Panel J: Splitting the Main Effect on lag(SFARS)

Variable/Model	Dependent Variable					
	1. <i>Stock Market Cap</i>	2. <i>Listed Firms</i>	3. <i>Stock Trading Volume</i>	4. <i>Private Credit</i>	5. <i>Bank Credit</i>	6. <i>SFARS</i>
lag(SFARS)	0.028 (0.023)	0.103 (0.091)	0.010 (0.026)	0.034** (0.017)	0.032* (0.017)	0.665*** (0.050)
High lag(SFARS)	-0.049 (0.032)	0.000 (0.048)	-0.019 (0.044)	0.005 (0.020)	0.010 (0.021)	-0.050 (0.034)
lag(SFARS) * High lag(SFARS)	0.013 (0.042)	0.013 (0.095)	0.102 (0.066)	0.054 (0.050)	0.051 (0.056)	-0.021 (0.067)
Controls, Year FE, and Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Country-Clustered SE	Yes	Yes	Yes	Yes	Yes	Yes
R ²	0.924	0.775	0.907	0.989	0.990	0.954
n	1145	1166	1163	1175	1175	1179

***, **, * Denote statistical significance against a null of 0 at the 1 percent, 5 percent, and 10 percent levels, respectively.

This table presents regression estimates similar to Table 8, but with the coefficient on lag(SFARS) interacted with partitioning variables. In Panel D, the partitioning variables are indicators for legal origin taken from Djankov et al. (2007). In all other panels, the partitioning variable is a median split as indicated. All regressions include the Table 8 set of control variables. See the note to Table 8 for variable definitions. Median splits are defined based on country-years as follows: Panel A: # Listed Firms is the number of publicly listed firms; Panel B: Private Credit is domestic credit provided to the private sector (not just from banks) as a percentage of GDP; Panel C: $\frac{\text{Stock Market Cap}}{\text{Private Credit}}$ is equity market capitalization divided by Private Credit; Panel D: legal origin variables from Djankov et al. (2007); Panel E: a factor derived from WEF data on the Strength of Investor Protection and Protections of Minority Investors; Panel F: a factor derived from the six World Bank Governance Indicators variables (Kaufmann et al. 2010): Voice and Accountability, Political Stability and Absence of Violence, Regulatory Quality, Government Effectiveness, Rule of Law, and Control of Corruption; Panel G: GDP per capita in U.S. dollars; Panel H: total GDP; and Panel I: age of the oldest domestic stock market, based on stock market founding years at https://en.wikipedia.org/wiki/List_of_stock_exchanges (last accessed December 7, 2018). All variables except the partitioning variables have been standardized to be mean-zero and unit-variance. Heteroscedasticity robust standard errors clustered by country are reported below coefficient estimates.

can facilitate arms-length lending, particularly in settings in which equity markets, and the related information mechanisms that come with publicly traded equity, are under-developed. With arms-length contracting, expectations of higher-quality disclosures can facilitate contracts in which information disclosed after contracting improves the state-contingent allocation of control rights, lowering the need to price protect at origination (Zhang 2008). The potentially positive role of financial information in credit provision is consistent with several recent studies (e.g., Djankov et al. 2007; Minnis and Sutherland 2016), although the precise mechanism remain uncertain, and may vary across jurisdictions.

REFERENCES

- Acemoglu, D., and S. Johnson. 2005. Unbundling institutions. *Journal of Political Economy* 113 (5): 949–995. <https://doi.org/10.1086/432166>
- Barth, M. E., and D. Israeli. 2013. Disentangling mandatory IFRS reporting and changes in enforcement. *Journal of Accounting and Economics* 56 (2-3): 178–188. <https://doi.org/10.1016/j.jacceco.2013.11.002>
- Basu, S. 1997. The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics* 24 (1): 3–37. [https://doi.org/10.1016/S0165-4101\(97\)00014-1](https://doi.org/10.1016/S0165-4101(97)00014-1)
- Bhattacharya, U., H. Daouk, and M. Welker. 2003. The world price of earnings opacity. *The Accounting Review* 78 (3): 641–678. <https://doi.org/10.2308/accr.2003.78.3.641>
- Bird, A., S. A. Karolyi, and T. G. Ruchti. 2016. *Regulating the Market for Information*. Working paper, Carnegie Mellon University. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2901650
- Brown, P., J. Preiato, and A. Tarca. 2014. Measuring country differences in enforcement of accounting standards: An audit and enforcement proxy. *Journal of Business Finance & Accounting* 41 (1-2): 1–52. <https://doi.org/10.1111/jbfa.12066>
- Bushee, B. J., and H. L. Friedman. 2016. Disclosure standards, susceptible investors, and stock return noise. *Review of Financial Studies*. 29 (3), 787–822. <https://doi.org/10.1093/rfs/hhv054>
- Bushman, R. M., J. D. Piotroski, and A. J. Smith. 2004. What determines corporate transparency? *Journal of Accounting Research* 42 (2): 207–252. <https://doi.org/10.1111/j.1475-679X.2004.00136.x>

- Christensen, H. B., L. Hail, and C. Leuz. 2013. Mandatory IFRS reporting and changes in enforcement. *Journal of Accounting and Economics* 56 (2-3): 147–177. <https://doi.org/10.1016/j.jacceco.2013.10.007>
- Christensen, H. B., L. Hail, and C. Leuz. 2016. Capital-market effects of securities regulation: Prior conditions, implementation, and enforcement. *Review of Financial Studies* 29 (11): 2885–2924. <https://doi.org/10.1093/rfs/hhw055>
- Christensen, H. B., M. Maffett, and L. Vollon. 2018. *Securities Regulation and Household Equity Ownership: Evidence from National Accounts*. Working paper, The University of Chicago. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3067643
- Dang, T. V., G. Gorton, B. Holmstrom, and G. Ordonez. 2014. *Banks as Secret Keepers*. Philadelphia, PA: Penn Institute for Economic Research.
- Daske, H., L. Hail, C. Leuz, and R. Verdi. 2008. Mandatory IFRS reporting around the world: Early evidence on the economic consequences. *Journal of Accounting Research* 46: 1085–1142.
- Dechow, P. M., and I. D. Dichev. 2002. The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review* 77 (s-1): 35–59. <https://doi.org/10.2308/accr.2002.77.s-1.35>
- Dechow, P. M., W. Ge, and C. Schrand. 2010. Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics* 50 (2-3): 344–401. <https://doi.org/10.1016/j.jacceco.2010.09.001>
- Djankov, S., C. McLiesh, and A. Shleifer. 2007. Private credit in 129 countries. *Journal of Financial Economics* 84 (2): 299–329. <https://doi.org/10.1016/j.jfineco.2006.03.004>
- Djankov, S., R. La Porta, F. Lopez-de-Silanes, and A. Shleifer. 2008. The law and economics of self-dealing. *Journal of Financial Economics* 88 (3): 430–465. <https://doi.org/10.1016/j.jfineco.2007.02.007>
- Francis, J., R. LaFond, P. Olsson, and K. Schipper. 2005. The market pricing of accruals quality. *Journal of Accounting and Economics* 39 (2): 295–327. <https://doi.org/10.1016/j.jacceco.2004.06.003>
- Frost, C. A., E. A. Gordon, and A. F. Hayes. 2006. Stock exchange disclosure and market development: An analysis of 50 international exchanges. *Journal of Accounting Research* 44 (3): 437–483. <https://doi.org/10.1111/j.1475-679X.2006.00208.x>
- Fulghieri, P., and D. Lukin. 2001. Information production, dilution costs, and optimal security design. *Journal of Financial Economics* 61 (1): 3–42. [https://doi.org/10.1016/S0304-405X\(01\)00054-X](https://doi.org/10.1016/S0304-405X(01)00054-X)
- Gelos, R. G., and S. J. Wei. 2005. Transparency and international portfolio holdings. *The Journal of Finance* 60 (6): 2987–3020. <https://doi.org/10.1111/j.1540-6261.2005.00823.x>
- Ghosh, A., and D. Moon. 2005. Auditor tenure and perceptions of audit quality. *The Accounting Review* 80 (2): 585–612. <https://doi.org/10.2308/accr.2005.80.2.585>
- Giannetti, M., and T. Y. Wang. 2016. Corporate scandals and household stock market participation. *The Journal of Finance* 71 (6): 2591–2636. <https://doi.org/10.1111/jofi.12399>
- Gipper, B., C. Leuz, and M. Maffett. 2016. *Public Audit Oversight and Reporting Credibility: Evidence From the PCAOB Inspection Regime*. Available at: https://pcaobus.org/news/events/documents/10222015_cea/reporting-credibility-gipper_leuz_maffett.pdf
- Guiso, L., P. Sapienza, and L. Zingales. 2008. Trusting the stock market. *The Journal of Finance* 63 (6): 2557–2600. <https://doi.org/10.1111/j.1540-6261.2008.01408.x>
- Guiso, L., P. Sapienza, and L. Zingales. 2009. Cultural biases in economic exchange? *The Quarterly Journal of Economics* 124 (3): 1095–1131. <https://doi.org/10.1162/qjec.2009.124.3.1095>
- Holthausen, R. W. 2003. Testing the relative power of accounting standards versus incentives and other institutional features to influence the outcome of financial reporting in an international setting. *Journal of Accounting and Economics* 36 (1-3): 271–283. <https://doi.org/10.1016/j.jacceco.2003.10.004>
- Holthausen, R. W. 2009. Accounting standards, financial reporting outcomes, and enforcement. *Journal of Accounting Research* 47 (2): 447–458. <https://doi.org/10.1111/j.1475-679X.2009.00330.x>
- International Organization of Securities Commissions (IOSCO). 2010. *Objectives and Principles of Securities Regulation*. Available at: <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD323.pdf>
- Isidro, H., D. Nanda, and P. D. Wysocki. 2016. *Financial Reporting Differences Around the World: What Matters?* Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2788741
- Jackson, H. E., and M. J. Roe. 2009. Public and private enforcement of securities laws: Resource-based evidence. *Journal of Financial Economics* 93 (2): 207–238. <https://doi.org/10.1016/j.jfineco.2008.08.006>
- Jin, L., and S. C. Myers. 2006. R2 around the world: New theory and new tests. *Journal of Financial Economics* 79 (2): 257–292. <https://doi.org/10.1016/j.jfineco.2004.11.003>
- Kaufmann, D., A. Kraay, and M. Mastruzzi. 2010. *The Worldwide Governance Indicators: Methodology and Analytical Issues*. Working paper, World Bank. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1682130
- Khan, U., B. Li, S. Rajgopal, and M. Venkatachalam. 2016. *Do the FASB's Standards Add Shareholder Value?* Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2947463
- Khanna, T., K. G. Palepu, and S. Srinivasan. 2004. Disclosure practices of foreign companies interacting with U.S. markets. *Journal of Accounting Research* 42 (2): 475–508. <https://doi.org/10.1111/j.1475-679X.2004.00146.x>
- La Porta, R., F. López-de-Silanes, A. Shleifer, and R. Vishny. 1998. Law and finance. *Journal of Political Economy* 106 (6): 1113–1155. <https://doi.org/10.1086/250042>

- La Porta, R., F. Lopez-de-Silanes, and A. Shleifer. 2006. What works in securities laws? *The Journal of Finance* 61 (1): 1–32. <https://doi.org/10.1111/j.1540-6261.2006.00828.x>
- Lang, M., K. V. Lins, and M. Maffett. 2012. Transparency, liquidity, and valuation: International evidence on when transparency matters most. *Journal of Accounting Research* 50 (3): 729–774. <https://doi.org/10.1111/j.1475-679X.2012.00442.x>
- Leuz, C., and R. E. Verrecchia. 2000. The economic consequences of increased disclosure. *Journal of Accounting Research* 38: 91–136. <https://doi.org/10.2307/2672910>
- Leuz, C., and P. D. Wysocki. 2008. *Economic Consequences of Financial Reporting and Disclosure Regulation: A Review and Suggestions for Future Research*. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1105398
- Leuz, C., and P. D. Wysocki. 2016. The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research* 54 (2): 525–622. <https://doi.org/10.1111/1475-679X.12115>
- Leuz, C., D. Nanda, and P. D. Wysocki. 2003. Earnings management and investor protection: An international comparison. *Journal of Financial Economics* 69 (3): 505–527. [https://doi.org/10.1016/S0304-405X\(03\)00121-1](https://doi.org/10.1016/S0304-405X(03)00121-1)
- Levine, R., and S. Zervos. 1998. Stock markets, banks, and economic growth. *The American Economic Review* 88: 537–558.
- Levine, R., N. Loayza, and T. Beck. 2000. Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics* 46 (1): 31–77. [https://doi.org/10.1016/S0304-3932\(00\)00017-9](https://doi.org/10.1016/S0304-3932(00)00017-9)
- Levitt, A. 1998. The importance of high quality accounting standards. *Accounting Horizons* 12: 79–82.
- Minnis, M., and A. Sutherland. 2016. Financial statements as monitoring mechanisms: Evidence from small commercial loans. *Journal of Accounting Research* 55 (1): 197–233. <https://doi.org/10.1111/1475-679X.12127>
- Morck, R., B. Yeung, and W. Yu. 2000. The information content of stock markets: Why do emerging markets have synchronous stock price movements? *Journal of Financial Economics* 58 (1-2): 215–260. [https://doi.org/10.1016/S0304-405X\(00\)00071-4](https://doi.org/10.1016/S0304-405X(00)00071-4)
- Myers, S. C., and N. S. Majluf. 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13 (2): 187–221. [https://doi.org/10.1016/0304-405X\(84\)90023-0](https://doi.org/10.1016/0304-405X(84)90023-0)
- Naranjo, P., D. Saavedra, and R. S. Verdi. 2016. *Financial Reporting Regulation and Financing Decisions*. Available at: http://www.hbs.edu/faculty/conferences/2017-imo/Documents/Rodrigo_nsvcapstruc04052017.pdf
- Pagano, M., and A. Roell. 1998. The choice of stock ownership structure: Agency costs, monitoring, and the decision to go public. *The Quarterly Journal of Economics* 113 (1): 187–225. <https://doi.org/10.1162/003355398555568>
- Petersen, M. A., and R. G. Rajan. 1994. The benefits of lending relationships: Evidence from small business data. *The Journal of Finance* 49 (1): 3–37. <https://doi.org/10.1111/j.1540-6261.1994.tb04418.x>
- Securities and Exchange Commission (SEC). 2013. *What We Do*. Available at: <https://www.sec.gov/about/whatwedo.shtml>
- Spamann, H. 2010. The “anti-director rights index” revisited. *Review of Financial Studies* 23 (2): 467–486. <https://doi.org/10.1093/rfs/hhp067>
- Zhang, I. X. 2007. Economic consequences of the Sarbanes-Oxley Act of 2002. *Journal of Accounting and Economics* 44 (1-2): 74–115. <https://doi.org/10.1016/j.jacceco.2007.02.002>
- Zhang, J. 2008. The contracting benefits of accounting conservatism to lenders and borrowers. *Journal of Accounting and Economics* 45 (1): 27–54. <https://doi.org/10.1016/j.jacceco.2007.06.002>

APPENDIX A

Table 12 provides variable definitions and Table 13 presents the top absolute values of unexpected changes in SFARS.

TABLE 12
Definitions of Main Variables

Variable	Description
<i>SFARS</i>	Proxy for confidence in disclosure quality. Country-year response to questions in Table 1, reflecting the perceived strength of financial auditing and reporting standards. Source: World Economic Forum's Executive Opinion Surveys.
<i>Stock Market Cap</i>	Country-year total capitalization of the equity market as a percent of GDP. Source: World Bank World Development Indicators.
<i>Listed Firms</i>	Number of firms listed on the domestic stock market divided by local population in millions. Source: World Bank World Development Indicators.
<i>Stock Trading Volume</i>	Value of listed company stock traded in a year as a percent of GDP. Source: World Bank World Development Indicators.
<i>Private Credit</i>	Domestic credit provided to the private (non-government) sector as a percent of GDP. Source: World Bank World Development Indicators.
<i>Bank Credit</i>	Domestic credit provided to the private (non-government) sector by banks as a percent of GDP. Source: World Bank World Development Indicators.
<i>GDP</i>	Annual Gross domestic product per capita measured using current U.S. dollars. Source: World Bank World Development Indicators.
<i>GDP Growth</i>	Year-on-year percent change in <i>GDP</i> . Source: World Bank World Development Indicators.
<i>Unemployment</i>	Unemployment rate in percent (International Labour Organization estimate). Source: World Bank World Development Indicators.
<i>Inflation</i>	Annual inflation rate in percent based on the local consumer price index. Source: World Bank World Development Indicators.
<i>FDI</i>	Net annual foreign direct investment as a percent of GDP. Source: World Bank World Development Indicators.
<i>Voice and Accountability</i>	Index capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. Source: World Bank Worldwide Governance Indicators (Kaufmann et al. 2010).
<i>Political Stability and Absence of Violence</i>	Index capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. Source: World Bank Worldwide Governance Indicators (Kaufmann et al. 2010).
<i>Regulatory Quality</i>	Index capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. Source: World Bank Worldwide Governance Indicators (Kaufmann et al. 2010).
<i>Government Effectiveness</i>	Index capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. Source: World Bank Worldwide Governance Indicators (Kaufmann et al. 2010).
<i>Rule of Law</i>	Index capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Source: World Bank Worldwide Governance Indicators (Kaufmann et al. 2010).
<i>Control of Corruption</i>	Index capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. Source: World Bank Worldwide Governance Indicators (Kaufmann et al. 2010).
<i>Capacity for Innovation</i>	Country-year average response to "In your country, to what extent do companies have the capacity to innovate? [1 = not at all; 7 = to a great extent]" (or equivalent questions). Source: World Economic Forum's Executive Opinion Surveys.

TABLE 13
Large SFARS Residuals and Country-Year Events

Country	Year	ΔSFARS	Predicted ΔSFARS	Residual ΔSFARS	Reason	Category	Category Acronym
Italy	2003	-6.83	-0.77	-6.05	Accounting Scandal	Accounting Scandal	AS
Japan	2003	3.39	0.12	3.27	Audit Reform	Corporate Reform	CR
Namibia	2004	-3.00	0.17	-3.16	Land expropriation	Other	OO
Dominican Rep.	2003	-4.27	-1.15	-3.12	Bank Fraud	Other Scandal	OS
Sri Lanka	2003	2.54	-0.53	3.07	Civil War Calm	Civil Calm	CC
Panama	2004	-2.57	0.46	-3.03	Unknown	Other	OO
Algeria	2011	-3.16	-0.26	-2.90	Civil Unrest	Civil Unrest	CU
India	2013	-3.29	-0.48	-2.82	Corporate Governance Reform	Corporate Reform	CR
Korea, Rep.	2009	-2.88	-0.18	-2.69	Financial crisis	Other Scandal	OS
Korea, Rep.	2004	2.97	0.39	2.57	Joined EU	Other Governance Change	OG
Ireland	2008	-3.30	-0.78	-2.52	Accounting Fraud	Accounting Scandal	AS
El Salvador	2014	2.42	-0.08	2.50	Unknown	Other	OO
Côte d'Ivoire	2012	3.29	0.81	2.48	End of Civil War	Civil Calm	CC
Guatemala	2004	-1.72	0.76	-2.48	Political transition	Other Governance Change	OG
Brazil	2014	-2.71	-0.34	-2.37	Other Scandal	Other Scandal	OS
Madagascar	2012	2.65	0.30	2.35	Peaceful political transition	Other Governance Change	OG
Egypt	2014	2.06	-0.28	2.35	End of Civil Unrest	Civil Calm	CC
Panama	2005	2.93	0.58	2.35	Positive Rebound	Other	OO
Hungary	2014	-2.50	-0.19	-2.31	Accounting Fraud	Accounting Scandal	AS
Italy	2004	2.11	-0.18	2.29	Positive Rebound	Other	OO
El Salvador	2012	-2.54	-0.27	-2.27	Political transition	Other Governance Change	OG
Algeria	2010	-2.31	-0.04	-2.27	Corporate Scandal	Other Scandal	OS
United States	2008	-2.73	-0.46	-2.27	Financial crisis	Other Scandal	OS
Nigeria	2008	-2.06	0.14	-2.20	Regulator failure	Other Scandal	OS
Romania	2003	1.69	-0.50	2.19	IFRS Adoption	Corporate Reform	CR
Burundi	2013	2.77	0.58	2.19	Corporate Governance Reform	Corporate Reform	CR
Portugal	2014	-2.38	-0.20	-2.18	Accounting fraud	Accounting Scandal	AS
Czech Republic	2004	2.54	0.38	2.16	IFRS Adoption	Corporate Reform	CR
Algeria	2009	1.78	-0.38	2.16	Corporate governance reform	Corporate Reform	CR
Lesotho	2012	-2.36	-0.21	-2.15	New Government	Other Governance Change	OG
Bahrain	2010	2.05	-0.09	2.14	Unknown	Other	OO
Egypt	2010	-2.46	-0.33	-2.13	Civil unrest	Civil Unrest	CU
Bolivia	2014	2.20	0.08	2.12	Incumbent reelected	Civil Calm	CC
Chile	2011	-2.34	-0.22	-2.12	Accounting Scandal	Accounting Scandal	AS
Japan	2006	-1.63	0.48	-2.11	Accounting Scandal	Accounting Scandal	AS
Philippines	2003	1.69	-0.39	2.08	Capital Market Regulations	Capital Market Reform	CM
Lesotho	2008	1.38	-0.67	2.04	Unknown	Other	OO
Korea, Rep.	2006	1.86	-0.18	2.04	Banking reform	Capital Market Reform	CM
Portugal	2004	2.11	0.09	2.02	IFRS Adoption	Corporate Reform	CR
Italy	2010	1.45	-0.57	2.02	Disclosure reform	Corporate Reform	CR
Poland	2005	-1.84	0.17	-2.02	Negative Rebound	Other	OO
Madagascar	2014	-1.51	0.50	-2.01	Political transition	Other Governance Change	OG
Nigeria	2014	2.21	0.23	1.98	IFRS Adoption	Corporate Reform	CR
Trinidad and Tobago	2003	-2.57	-0.62	-1.95	Other Scandal	Other Scandal	OS
Mauritius	2014	-1.83	0.10	-1.93	Tax Haven Pressure	Other	OO
Benin	2012	2.25	0.36	1.89	Unknown	Other	OO
Burundi	2009	-1.66	0.22	-1.88	Other Scandal	Other	OO
Uruguay	2004	-1.29	0.59	-1.88	Financial crisis aftermath	Other Scandal	OS
Slovak Republic	2012	1.90	0.03	1.87	Positive Rebound	Other	OO
Israel	2010	1.77	-0.07	1.85	IFRS Adoption	Corporate Reform	CR
Mauritania	2012	-2.13	-0.29	-1.84	Civil Unrest	Civil Unrest	CU
Ireland	2009	-2.83	-1.00	-1.83	Financial crisis	Other Scandal	OS

(continued on next page)

TABLE 13 (continued)

<u>Country</u>	<u>Year</u>	<u>$\Delta SFARS$</u>	<u>Predicted $\Delta SFARS$</u>	<u>Residual $\Delta SFARS$</u>	<u>Reason</u>	<u>Category</u>	<u>Category Acronym</u>
China	2007	2.17	0.35	1.83	IFRS Adoption	Corporate Reform	CR
United States	2003	1.26	-0.55	1.81	Corporate Governance Reform	Corporate Reform	CR
Benin	2009	-1.64	0.16	-1.80	Natural Disaster	Other	OO

This table presents the top 55 regression errors from the model with estimates presented in Table 6. *Reasons* listed are based on the author's searches for events plausibly consistent with Residual $\Delta SFARS$. *Category* items are a condensation of *Reasons* into eight categories, for parsimony. *Category Acronyms* correspond to Figure 2.

APPENDIX B

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