

Uneven Regulatory Playing Field and Bank Transparency Abroad

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Abstract

We study the implications of cross-country regulatory differences on banks' transparency and stability abroad. Using a global sample of banks' majority-owned foreign subsidiaries, we find that foreign subsidiaries' transparency decreases when their home countries have tighter activity restrictions than their host countries. We also find that less transparent foreign subsidiaries are more likely to fail or experience large deposit withdrawals during the 2007-2009 financial crisis. Further analyses show that the effect of regulatory differences on foreign subsidiaries' transparency is primarily driven by host countries with weak supervisory power. We also bolster the causal inference in a difference-in-differences design by taking advantage of cross-border acquisitions. We find that target banks' transparency decreases after the acquisitions when the acquirer banks are from countries with more restrictive regulations than the targets. Overall, our study contributes to the literature by documenting the impact of regulatory inconsistency on foreign subsidiaries' transparency and the economic consequences of the diminished transparency.

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1. Introduction

Cross-border banking claims are economically significant and reached more than half of global GDP in 2007 (IMF 2014a). The vast majority of these claims are held by systemically important financial institutions with operations worldwide (IMF 2014b). While the global banking network increases risk sharing, it also serves as a channel for shock propagating and therefore exacerbates risk contagion. Despite that bank regulators have put forth great effort to intensify international coordination and collaboration, bank regulations remain predominantly national and vary widely across countries (Basel Committee on Banking Supervision 2012; Barth et al. 2013). While prior literature examines the implication of regulatory inconsistency on bank flows and risk taking activities abroad (Houston et al. 2012; Ongena et al. 2013; Karolyi and Taboada 2015), several important but unanswered questions remain: Does the cross-country differences in bank regulations affect banks' financial reporting transparency abroad? If so, how? What is the implication of reporting transparency on bank instability abroad? In this paper, we address these questions using foreign subsidiaries of multinational banks.

Bank transparency is of key importance to facilitate outside monitoring and discipline. The extant literature suggests that transparency limits banks' risk taking and mitigates their vulnerability to downside risks in the domestic markets (Beatty and Liao 2011, 2014; Bushman and Williams 2012, 2015; Acharya and Ryan 2016). However, the evidence on bank transparency in the foreign markets is scarce, even though it has important implications for depositors, investors, and regulators worldwide.

We hypothesize that foreign subsidiaries' transparency declines when their home countries (domestic markets) have tighter activity restrictions than their host countries (foreign markets).

One reason is that opacity would weaken market discipline on the risk-shifting behavior of the parent banks. Foreign subsidiaries are separately capitalized and subject to the host country's regulations. By exploiting the lax host-country regulations through their foreign subsidiaries, parent banks can take on overly risky projects that maximize shareholder value at the expense of debtholders' interests (i.e., risk shifting). Thus, parent banks have the incentives to reduce the transparency of their foreign subsidiaries located in countries with lax regulations to inhibit outside monitoring and regulatory oversight over their risk-taking activities. Another reason is the consideration of proprietary costs. Because banks can pursue more profitable opportunities in countries with lax regulations (Karolyi and Taboada 2015), they may reduce disclosures of their foreign subsidiaries in these countries, in order to maintain their competitive advantages and deter the entrance of potential competitors (Verrecchia 1983).

There are, however, several reasons justifying a null result. First, a consistent financial reporting can facilitate performance evaluation within a business group by increasing comparability (Roth and O'Donnell 1996). Second, transparent reporting practices can help firms attract outside financing and reduce the cost of capital (Lambert et al. 2007; Beatty and Liao 2014). Thus, parent banks may prefer consistent and transparent financial reporting practices throughout their global networks.

We also predict that foreign subsidiaries with greater transparency are less likely to suffer from financial instability. This expectation is consistent with prior literature that suggests transparency decreases banks' ability to conceal risk exposure and reduces investors' uncertainty about banks' intrinsic value, thereby reducing banks' vulnerability to downside risk (Bushman and Williams 2015). In addition, as bank transparency facilitates market discipline, the improved market signal can prompt regulatory interventions to reduce financial instability (Bushman 2016).

There are also countervailing arguments for why subsidiaries' transparency does not affect, or even exacerbates, their instability. First, in our parent-subsidary setting, the internal capital within the banking group can weaken the effect of foreign subsidiaries' transparency on their stability because parent banks can inject capital to support their financially distressed subsidiaries (Gilbert 1991; Houston et al. 1997). Second, theoretical work suggests that transparency can lead to inefficient bank runs and hurt banks' ability to provide liquidity, because banks' unique function of creating highly liquid, money-like debt claims depends on "information insensitivity" about the value of assets that collateralize their debt (Morris and Shin 2002; Dang et al. 2017).

Our empirical analysis focuses on majority-owned foreign subsidiary banks (hereafter, foreign subsidiaries) to ensure that the parent bank has control over their operating activities and reporting decisions. Following prior studies (Ongena et al. 2013; Karolyi and Taboada 2015), we measure regulatory differences as the difference in the index of regulatory restrictions on bank activities between the home country and the host country of the foreign subsidiary. This index, obtained from Barth et al. (2013), captures the restrictiveness of bank regulations on securities, insurance, and real estate activities. In addition to the empirical support of this index, restriction on non-lending activities, such as securities and insurance underwriting, is an important regulatory focus of many countries to promote stability (Laeven and Levine 2009). We measure bank transparency as the disclosures related to loans and securities, which represent major components of bank assets and capture the lending and investment activities induced by regulatory differences (Ongena et al. 2013; Beatty and Liao 2014; Karolyi and Taboada 2015).

We test our first hypothesis using a sample of 1,140 subsidiary-years from 250 majority-owned foreign subsidiaries located in 39 host countries (owned by 166 parent banks in 40 home countries) from 1995 to 2006. Consistent with our first hypothesis, we find that regulatory differences are

negatively associated with foreign subsidiaries' disclosures. We test our second hypothesis by exploiting the 2007-2009 global financial crisis. Specifically, we assess the effect of pre-crisis disclosure levels on the crisis-period financial strength for the 145 foreign subsidiaries that existed in 2006. Consistent with our prediction, we find that foreign subsidiaries with less disclosure are more likely to fail or experience large deposit withdrawals during the crisis.

Our additional analysis suggests that risk-shifting incentives, rather than proprietary cost considerations, are the most likely mechanism through which regulatory differences affect foreign subsidiaries' transparency. In addition, we use several approaches to strengthen the causal inference that regulatory differences reduce bank transparency abroad.¹ First, we include host country-year fixed effects to control for time-varying host-country characteristics in our hypothesis test. Second, we take advantage of cross-border bank acquisitions and perform a difference-in-differences analysis. We find that when acquirer banks are from countries with more restrictive regulations than the countries of the target banks, target banks' transparency decreases subsequent to the acquisition. Third, we use foreign branches from the same home country as the benchmark sample. Unlike foreign subsidiaries, foreign branches are subject to home-country regulations and therefore do not provide an opportunity for parent banks to exploit the regulatory differences (Ongena et al. 2013). Our inferences remain unchanged. We also find that our results are robust to a variety of sensitivity tests, including alternative regression specifications, the use of instrumental variable approach, additional controls of other country-level regulation indexes and economic/governance factors, alternative samples, and alternative transparency measure.

¹ Endogeneity is an inherent challenge for the test of our first hypothesis because it relies on cross-sectional relations between regulatory differences and bank transparency. The test of our second hypothesis mitigates the endogeneity concern by using the global financial crisis as an unexpected negative shock to bank financial performance. We recognize, however, the sample size for this test is small, which limits the inference we can draw about the impact of transparency on bank stability.

Our findings contribute to the literature in several ways. First, our study adds to the literature on bank regulations and financial reporting quality. Several recent studies examine the effects of regulations and supervision on banks' financial reporting transparency (Costello et al. 2016; Jiang et al. 2016). Our study complements these studies by separately examining banks' foreign subsidiaries and focusing on the effect of regulatory inconsistency. Our evidence suggests that restrictive home-country regulations lead to degraded transparency abroad and exert negative externalities on the global banking system. In addition, our finding that the negative externalities primarily exist in countries with weak supervisory power also highlights the importance of bank supervision when regulators consider using lax regulations to attract foreign capital.

Second, we add to the growing literature that documents the costs and benefits of regulatory arbitrage, a practice that banks evade costly regulations in their home countries by pursuing opportunities abroad. While regulatory arbitrage is a key concern for regulators around the world, the evidence on the consequence of regulatory arbitrage is mixed.² The evidence in Ongena et al. (2013) is more consistent with the value-destructive view of regulatory arbitrage, which involves a harmful pursuit of excessive risk-taking opportunities that leads to a "race to the bottom." In contrast, the evidence in Houston et al. (2012) and Karolyi and Taboada (2015) is more consistent with the benign view, which involves a search for profitable investment opportunities abroad. Our results enrich this literature by providing additional evidence on the cost of regulatory arbitrage, that is, tighter home-country regulations reduce the transparency of banks' foreign subsidiaries.

Finally, our paper extends recent studies that examine the effect of bank transparency on

² Houston et al. (2012) find that international bank flows tend to go to host countries with fewer regulations, especially if the recipient country has strong property rights protections. Ongena et al. (2013) document that banks from home countries with tighter regulations are more likely to have lower lending standards and more non-performing loans abroad. Karolyi and Taboada (2015) find that cross-border acquisition flows primarily involve acquirers from countries with tighter regulations than their targets.

financial stability (Beatty and Liao 2011; Bushman and Williams 2015). To the best of our knowledge, our study is the first to examine the effect of transparency on the stability of banks' foreign subsidiaries. Bank failures and bank runs tend to be contagious and can lead to the meltdown of the financial system (Diamond and Rajan 2005). Given that financial systems are increasingly interconnected across countries and that "source of strength" doctrine requires parent banks to ensure the capital adequacy of their subsidiaries, the failure of foreign subsidiaries may amplify the risk contagions and shock propagation beyond the local market.³ Thus, our study also provides policy implications for regulators worldwide by highlighting the importance of disclosure practices among banks' foreign subsidiaries.

2. Empirical Predictions

2.1 Regulatory Differences and Foreign Subsidiaries' Transparency

Multinational banks are key players in global banking system and have considerable impact on banking sector performance and stability. According to IMF (2014b), 145 banks globally account for 85 percent of the assets of the world's top 1,000 banks in 2008. The top five largest cross-border banking groups have \$10 trillion of assets in total and over 50 percent of their credit risk exposures outside their home country, with subsidiaries in more than 60 countries.⁴

Despite the interdependence of the global banking system, bank regulations vary widely around the world (Čihák et al. 2012; Barth et al. 2013). Prior studies suggest that multinational banks, by taking advantage of the international regulatory inconsistency, enjoy more investment

³ For example, the U.S. Code Section 1831o-1 states "The appropriate Federal banking agency for a bank holding company or savings and loan holding company shall require the bank holding company or savings and loan holding company to serve as a source of financial strength for any subsidiary of the bank holding company or savings and loan holding company that is a depository institution."

⁴ The top five largest banking groups' assets account for about 10 percent of global banking assets.

opportunities and engage in greater risk taking in countries with less restrictive regulations (Ongena et al. 2013; Karolyi and Taboada 2015).⁵ This literature, however, does not examine whether and how uneven regulatory environments would affect banks' disclosure choices abroad.

The banking literature suggests that transparency is central to the market discipline of banks' risk-taking behaviors (Bushman and Williams 2015; Acharya and Ryan 2016). The market discipline can come from various outsiders, including investors and other stakeholders in the home and host countries. For example, greater disclosures make it easier for outsiders to discern risk shifting and take actions – for example, for investors to demand higher returns on their investment, and for depositors to more quickly withdraw funds to protect the value of their claims. In addition, transparency can indirectly enhance regulatory oversight by engendering credible market signals.

Our first hypothesis predicts that foreign subsidiaries' financial reporting transparency declines when their home countries have tighter activity restrictions than their host countries. One reason is that opacity would weaken market discipline on banks' risk-shifting behavior. The high leverage combined with explicit and implicit government support creates incentives for banks to take on overly risky projects that benefit shareholders at the expense of debtholders (Laeven 2013). Because foreign subsidiaries are subject to the host country's regulations, foreign subsidiaries in countries with lax regulations offer parent banks additional opportunities to take overly risky projects. By engaging in risky, negative net present value projects, bank managers benefit shareholders at the expense of debtholders. To protect their interests, stakeholders (e.g., depositors, creditors, and regulators) in the home and host countries have incentives to monitor banks' risk-taking behaviors. While subsidiaries are separately capitalized, stakeholders in the home countries

⁵ Karolyi and Taboada (2015, footnote 8) state “by acquiring banks in countries with fewer restrictions on bank activities, acquirers may engage in activities prohibited in the home country (e.g., providing insurance services), further complicating the home country supervisor's role.”

are nonetheless vulnerable to subsidiaries' downside risk because parent banks are expected to act as a source-of-strength to their troubled subsidiaries when resources are available. In addition, parent banks also bear the downside risks through channels such as reputational contagion and fire sale of the failed foreign subsidiary. Collectively, under the risk-shifting view of regulatory differences, parent banks have incentives to reduce transparency of their foreign subsidiaries when the home countries have tighter restrictions than the host countries.⁶

Another reason is that parent banks may reduce transparency of foreign subsidiaries because of proprietary costs. Prior study suggests that banks pursue more profitable opportunities in countries with less constrained regulations through acquisitions of foreign banks (Karolyi and Taboada 2015). Because information revealed through increased disclosures can deprive banks of their competitive advantage, banks may reduce disclosure to maintain their competitive advantage and deter the entrance of potential competitors (Verrecchia 1983).

Following the above reasoning, our first hypothesis follows:

Hypothesis 1: Foreign subsidiaries' transparency declines when their home-country regulations have tighter activity restrictions than their host-country regulations.

There are, however, countervailing arguments why restrictive home-country regulations do not impair transparency abroad. First, parent banks may aim to hold a consistent reporting approach across their global subsidiary banks. A consistent set of reporting practices within banks' global network would yield various benefits, including improved comparability and performance evaluation (Roth and O'Donnell 1996; Ozkan et al. 2012). Second, parent banks may choose transparent reporting practices to attract external financing. Prior studies suggest that transparency

⁶ Parent banks may also exploit opaque reporting practices at foreign subsidiaries to meet the overall regulatory requirement, because the consolidated supervision principle focuses on the capital adequacy and risk exposures on a consolidated basis (Basel Committee on Banking Supervision 1983, 2012). However, this incentive may not be directly related to regulatory differences.

reduces information asymmetry that in turn decreases the cost of capital (Francis et al. 2004; Lambert et al. 2007). If investors price protect when they face higher valuation uncertainty, parent banks may increase transparency to better reflect the economic value of foreign subsidiaries in order to lower the cost of capital.

2.2 Transparency and Instability of Foreign Subsidiaries

Our second hypothesis examines the relation between transparency and instability of banks' foreign subsidiaries. We predict that foreign subsidiaries' transparency mitigates their financial instability. First, if transparency helps limit parent banks' risk-shifting behavior via subsidiaries in countries with lax regulations, these subsidiaries should be better able to survive an unexpected negative shock, because they are less likely to suffer large losses due to overly risky investments. Second, transparency decreases investors' and stakeholders' uncertainty about banks' intrinsic value and thus reduces the financing frictions in the market. Third, transparency improves the ability of market participants to take prompt actions and exert pressure on regulators to intervene in troubled banks. Consistent with this argument, prior research finds that higher financial reporting quality leads to lower bank risk taking (Bushman and Williams 2012, 2015).

Consequently, our second hypothesis follows:

Hypothesis 2: Foreign subsidiaries with greater transparency are less likely to suffer from financial instability.

We note, however, the results from prior research may not be generalizable to our parent-subsubsidiary setting because parent banks can inject capital to support their financially distressed subsidiaries (Gilbert 1991; Houston et al. 1997). In addition, the theory literature posits that bank transparency can be detrimental to the stability of the banking system (Bushman 2016). For example, transparency can lead to inefficient bank runs and impair banks' liquidity, because

“information insensitivity” about the value of bank assets is critical to banks’ ability of creating highly liquid, money-like debt claims (Morris and Shin 2002; Dang et al. 2017).

3. Sample and Data

3.1 Sample Selection

We obtain financial statement data from Bankscope. Our sample period begins in 1995 and ends in 2009. We use the data from 1995-2006 to test our first hypothesis related to regulatory differences and bank transparency, and use the data from 2007-2009 to test our second hypothesis related to bank transparency and financial instability. We focus on foreign subsidiary banks because they are separately capitalized and subject to host-country regulations, thereby allowing parent banks to exploit the inconsistency in bank regulations to seek profits abroad. In addition, we restrict our analysis to majority-owned subsidiaries, because their operating activities and reporting policies are under parent banks’ direct control.

Our initial sample consists of 19,921 subsidiaries, the universe of subsidiary banks in the Bankscope parent-subsidary link table. We then impose the following criteria to compile our sample. First, we delete subsidiaries that have missing ownership data (6,620 subsidiaries) or are minority owned (10,487 subsidiaries). For subsidiaries with multiple ownership observations, we retain the observations with direct ownership to ensure a unique parent-subsidary link for each subsidiary (281 observations).⁷ Second, we drop subsidiaries that are involved in cross-border majority control acquisitions during our sample period (147 subsidiaries). The home-country effects on these subsidiaries are confounded because Bankscope extrapolates the last known parent

⁷ The threshold for disclosing ownership in subsidiary banks varies across countries. For example, some countries require such disclosure with a minimum threshold of 5% or 10% stakes (Li et al. 2006). Because subsidiaries with missing ownership information are those below the required threshold and we focus on majority-owned subsidiaries, the differences in disclosure requirements should not affect our results.

bank to all the earlier periods. Third, we remove domestic subsidiaries (968 subsidiaries). Finally, we drop observations that do not have loans or securities on balance sheets, observations that do not have necessary financial statement data or country-level regulation indexes, or observations that represent the only subsidiary in the host country-year (1,114 subsidiaries).⁸ Our full sample consists of 304 subsidiaries (1,656 subsidiary-year observations) in 46 host countries from 1995 to 2009. These subsidiaries are owned by 194 parent banks from 49 home countries. Panel A of Table 1 reports the sample distribution by year.

Panel B of Table 1 reports the sample distribution by the home country (i.e., the country of the parent banks). We find that banks from France has the highest number of foreign subsidiaries (29), followed by Germany and the U.K. (26) and Japan (23).⁹ This is not surprising because these countries are home to big multinational banks such as BNP Paribas (France), Deutsche Bank (Germany), Nomura Holdings (Japan), and Standard Chartered (the U.K.). Panel C presents the sample distribution by the host country (i.e., the country where the subsidiary is located). We find that Switzerland has the highest number of foreign subsidiaries (41), followed by Luxembourg (37), and Germany and the U.K. (21). These results collectively suggest that our sample is geographically dispersed rather than dominated by specific countries, and therefore help enhance the generalizability of our findings.

3.2. Variables

We measure regulatory difference, *Diff_ActRestrict*, as the home-country activity restrictions

⁸ We remove host country-years with only one subsidiary because we control for host-country×year fixed effects throughout our regression analyses. We require subsidiaries to have loans and securities because we measure transparency based on the disclosure related to these items, which assumes that the subsidiaries engage in loans and securities activities.

⁹ The number of U.S. foreign subsidiaries in our sample is much smaller than the number reported by the Board of Governors of the Federal Reserve System, because most of the foreign subsidiaries owned by U.S. banking organizations are leasing and investment companies (Federal Reserve Bulletin 1999, p. 605). We include only subsidiary banks because Bankscope provides financial statement data only for banks. In addition, we restrict our analysis to majority-owned subsidiaries that meet our data requirements.

index minus the host-country activity restrictions index. The activity restrictions index (*ActRestrict*) captures regulatory restrictions on bank activities and is commonly used in prior studies to assess the restrictiveness of bank regulations (Houston et al. 2012; Ongena et al. 2013; DeFond et al. 2015; Karolyi and Taboada 2015).¹⁰ We use a relative bank regulation measure based on the difference between home- and host-countries, because parent banks' risk shifting incentives should be influenced as much by the tough regulatory restrictions of their home countries as by the weak regulatory restrictions of their subsidiaries' host countries.¹¹

A higher value of *Diff_ActRestrict* indicates more stringent activity restrictions at home. The bank regulation indexes come from Barth et al. (2013), who compile the data for 180 countries based on the four surveys sponsored by the World Bank in 1999, 2003, 2007, and 2011. The activity restrictions index ranges from three to twelve, with higher values indicating more restrictive regulations on banks' activities in securities, insurance, and real estate. Appendix A provides detailed definitions of the variables. Because our sample period spans from 1995 to 2009, we follow Karolyi and Toboada (2015) and use the index from the first survey (data as of 1999) for the period before 2001, the index from the second survey (data as of 2002) for the period 2002 to 2004, the index from the third survey (data as of 2005) for the period 2005 to 2009. Appendix B presents the average value of the index by country.

Our measure of bank transparency, *Disclosure*, is the level of disclosures related to loans and securities. We focus on loans and securities because they are economically important and collectively account for 80 percent of total bank assets (Beatty and Liao 2015). In addition, prior

¹⁰ Another commonly used index is the stringency of capital regulations. However, the effect of capital regulations on banks' risk taking is not well established in the literature. For example, Ongena et al. (2013) do not find home-country capital stringency to be associated with lending standards abroad. In our sensitivity test reported in Section 6.1, we find that our inference is robust to controlling for differences in capital regulations.

¹¹ As Ongena et al. (2013, p. 739) point out, analyses that use the home-country measure assumes host-country regulations away. In additional analysis (untabulated), we find that our inference remains unchanged after replacing the relative measure (*Diff_ActRestrict*) with the home-country measure (*ActRestrict*).

research provides evidence that tighter activity restrictions at home can lead to lower lending standards and more investment activities abroad (Ongena et al. 2013; Karolyi and Taboada 2015). Thus, the disclosures related to loans and securities enable us to better identify the effect of regulatory differences on bank transparency. *Disclosure* is the sum of two sub-indexes: (1) *Disclosure_Loans*, which measures whether the subsidiary discloses the amount of loan loss provisions, the amount of non-performing loans, and loan types (commercial, consumer, or mortgage loans), and (2) *Disclosure_Securities*, which measures whether the subsidiary discloses information about realized trading gains/losses, unrealized trading gains/losses, securities types (debt securities, equities, and commodities), and the issuing party (governments, banks, corporates, and structured). *Disclosure* ranges from 0 to 7, with higher values indicating greater transparency.

It is worth noting that prior studies commonly use the timeliness or estimation errors of loan loss provisions as the proxy for bank transparency (e.g., Bushman and Williams 2015; Jiang et al. 2017). We do not use these proxies because they require the disclosures of loan loss provisions and non-performing loans and we view these disclosures as a direct measure of transparency.¹² Our approach also has the advantage of avoiding the challenges of interpreting discretionary loan loss provisions, which may reflect managers' private information or opportunistic earnings management.

We measure the instability of foreign subsidiaries using two proxies. First, we construct, *Bank failure*, an indicator variable equal to one if the bank ceases to have financial statement information during the crisis period 2007-2009 and is inactive (as of the Bankscope data in 2016).¹³ The

¹² Because the disclosure requirements and accounting treatments (e.g., the definitions of non-performing loans) vary across countries and times, we control for host country-year fixed effects in our regression analyses. While it remains possible that subsidiaries do not provide the information because it does not meet the materiality threshold, we mitigate this concern by requiring our sample to have loans and securities.

¹³ We check the status of the subsidiaries based on the Bankscope data as of November 2016, prior to the discontinuation of the database by Burea van Dijk in December 2016.

second variable, *Large deposit withdrawal*, measures whether the bank experiences a large deposit withdrawal during the crisis. Large deposit withdrawal, a run-prone behavior, indicates that depositors have concerns about bank's survival and the safety of their deposits (Iyer and Puri 2012). The Appendix A provides variable definitions.

3.3 Descriptive Statistics

Panels A and B of Table 2 present the descriptive statistics and correlation coefficients for the sample testing our first hypothesis (i.e., the sample from 1995-2006). We winsorize all continuous variables at the top and bottom 1% of their distributions. Panel A shows that the mean *Diff_ActRestrict* index is 0.273, indicating that on average the home countries have more restrictive regulations than the host countries. This result is consistent with the finding in Houston et al. (2012) that banks tend to transfer funds to countries with fewer regulations. The mean *Disclosure* is 2.858, suggesting that the subsidiaries disclose less than three pieces of information related to lending and securities activities. Decomposing the variable, we further find that the mean *Disclosure_Loans* is 1.738 and the mean *Disclosure_Securities* is 1.120, indicating that the bank provide less information regarding its securities activities than lending activities. The mean and median total assets of our sample subsidiaries are \$7.253 and \$1.425 U.S. billions, respectively.¹⁴ The mean *ROA* and *Capital ratio* is 1.1 percent and 12.2 percent, respectively, suggesting that the subsidiaries are financially healthy and well capitalized. Finally, we find that 78 percent of the subsidiaries are audited by Big 5 auditors and only 4 percent are publicly listed. Panel B shows that, consistent with our hypothesis, *Diff_ActRestrict* and *Disclosure* is negatively correlation (with a correlation coefficient of -0.27). Because this result does not control for potentially correlated omitted variables, we rely on the multivariate analysis in the next section to draw our conclusion.

¹⁴ We include additional descriptive statistics on the value of total assets for ease of discussion. Because the distribution is highly skewed, we use the natural logarithm of total assets to capture firm size in our regression.

Panels C and D of Table 2 present the descriptive statistics and correlation coefficients for the sample testing our second hypothesis. The sample size for this test is smaller than that for the test of our first hypothesis because this sample is limited to the 145 firms which existed in 2006. The number of observations is 145 for the variable *Bank failure* and 135 for the variable *Large deposit withdrawal*, where we delete the 10 banks which do not have any financial statement information to assess their crisis-period financial performance. Panel C shows that the mean *Bank failure* is 7% and the mean *Large deposit withdrawal* is 21%. Panel D shows that *Bank failure* and *Disclosure* is negatively correlated (with a correlation coefficient of -0.19).

4. Empirical Results

4.1 Regulatory Differences and Foreign Subsidiaries' Transparency

Our first hypothesis predicts that foreign subsidiaries' transparency decreases when their home countries have tighter activity restrictions than their host countries. We test this hypothesis by regressing the aggregate disclosure index (*Disclosure*) on the regulatory difference between home and host countries (*Diff_ActRestrict*). We control for various bank characteristics used in prior studies to explain banks' financial reporting quality (Nichols et al. 2009; Beatty and Liao 2011; Bushman and William 2012; Kanagaretnam et al. 2014). Our control variables include the following: (1) *Size*, the log of lagged total assets, (2) *ROA*, return on assets, (3) *Loan growth*, the growth of total loans, (4) *Capital ratio*, shareholder equity divided by total assets, (5) *Big 5*, a variable indicating whether the subsidiary is a client of a Big 5 auditor, and (6) *Public*, a variable indicating whether the subsidiary is publicly listed. In addition, we include a variable indicating whether the home and host countries share the same official language (*Same language*) to control for the barriers to effective communication and supervision across countries.

We also include *Z_Score* to control for bank risk. Riskier firms may provide greater disclosure because they face greater demand for information. They may also provide less disclosure to avoid outside scrutiny. By controlling for bank risk, we also help disentangle the effect of regulatory differences from the effect of risk taking on foreign subsidiaries' reporting choices. Following prior studies (Laeven and Levine 2009), *Z_Score* is the natural logarithm of the distance to default, measured as the ratio of the return on assets plus the capital to asset ratio divided by the standard deviation of the return on assets, $(ROA+CAR)/\text{volatility}(ROA)$. We also include entity type fixed effects to control for the types of the subsidiaries.¹⁵ Furthermore, we include the host country×year fixed effects to control for local country-year accounting practices and regulatory/economic factors that may affect subsidiaries' reporting practices. That is, the host country-year fixed effects help identify the within-host-country-year differences in transparency between subsidiaries from home countries with differential regulatory restrictions. Appendix A provides detailed variable definitions.

Because our dependent variable, *Disclosure*, is an ordinal variable, we estimate the following Ordered probit regression:

$$\begin{aligned} Disclosure = & \beta_0 + \beta_1 Diff_ActRestrict + \beta_2 Size + \beta_3 ROA + \beta_4 Loan\ growth + \beta_5 Capital\ ratio \\ & + \beta_6 Big\ 5 + \beta_7 Public + \beta_8 Same\ language + \beta_9 Z_Score \\ & + \sum \beta_m Entity\ type\ fixed\ effects + \sum \beta_n Host\text{-}country \times Year\ fixed\ effects + \varepsilon \quad (1) \end{aligned}$$

Our hypothesis predicts β_1 , the coefficient on *Diff_ActRestrict*, to be negative. We adjust the standard errors by clustering at the host country×year level.

Table 3, Panel A presents the regression results. Column (1) reports the results using *Disclosure* as the dependent variable. We find that the coefficient on *Diff_ActRestrict* is significantly negative,

¹⁵ Indicators for bank-entity types are based on Bankscope. Among the subsidiary banks in our sample, 67% are commercial banks and 8% are investment banks, with the remaining comprised of bank holding companies, cooperative banks, and other types of banks.

suggesting that foreign subsidiaries' transparency decreases when their home-country regulations are more restrictive than the host-country regulations. As for economic significance, we find that, for example, a one standard deviation increase in *Diff_ActRestrict* from the mean decreases the probability of disclosing four pieces of information related to lending and securities activities from 10.68% to 7.07% when all other variables equal their means.

To explore the effect of host-country accounting standards and reporting practice, we perform an alternative specification that controls for these factors, after suppressing the host country×year fixed effects (because there is no within-host country-year variation of these variables). The three additional indexes, from Barth et al. (2013), are: (1) *External audit*, the effectiveness of external audits of banks, (2) *Accounting practices*, the type of accounting practices used, and (3) *Transparency*, the transparency of bank financial statements practices.¹⁶ Column (2) of Table 3, Panel A finds that the coefficient on *Diff_ActRestrict* continues to be significantly negative, suggesting that regulatory differences lead to less transparent reporting choices that deviate from local reporting standards and practices.

In Column (3) of Table 3, Panel A, we confirm our results using an OLS regression model to mitigate the concerns that multi-level fixed effects may lead to inconsistent estimates and incidental parameter bias for non-linear Ordered probit models (Greene 2004; Jiang et al. 2016). The significantly negative coefficient on *Diff_ActRestrict* indicates that our findings are not sensitive to using an OLS model. To mitigate the potential endogeneity concern, Column (4) reports results after using the instrumental variable (IV) approach. We use the number of systemic banking crises in a country during the 1970s and 1980s, provided by Laeven and Valencia (2012),

¹⁶ We include country-level accounting practice indexes, rather than bank-level accounting standard codes because Bankscope does not provide time-series data on banks' accounting standards, and mainly differentiates between local GAAP, IAS, and IFRS.

as an instrument. While countries tend to have stricter regulatory environment after the banking crisis (i.e., the instrumental variable is correlated with the endogenous regressor), it is unlikely that banking crisis during the 1970s and 1980s have a first-order effect on bank disclosure during our sample period (i.e., the exclusion restriction that instrumental variable is uncorrelated with the error terms) (Karolyi and Taboada 2015). We find that the IV approach produces similar estimates and the coefficient on *Diff_ActRestrict* remains significantly negative.

Columns (5) and (6) of Table 3, Panel A further examine whether our results are primarily driven by loans-related or securities-related disclosures. We perform this analysis using the two disclosure components as the dependent variable, i.e., *Disclosure_Loans* and *Disclosure_Securities*. We find that the coefficient on *Diff_ActRestrict* is significant in the predicted directions at $p \leq 1\%$ (two-tailed) in both columns, suggesting that foreign subsidiaries disclose less information about their lending and securities activities when their home-country regulations are more restrictive than the host-country regulations. Overall, consistent with our prediction, the results in Table 3 indicate that foreign subsidiaries have lower reporting transparency when their home countries have more restrictive regulations than their host countries.

One natural question arises whether our results in Table 3 vary with bank size. We explore this question by partitioning our sample based on the size of the parent and subsidiary banks, then re-estimate equation (1) for each of the subsamples. Table 3, Panel B presents the results. Columns (1)-(2) and (3)-(4) show the results of the analysis conditional on the size of parent banks and the size of subsidiaries, respectively. We find that the coefficient on *Diff_ActRestrict* is significantly negative in all columns. In addition, the difference in this coefficient between the subsamples is insignificant. Thus, the findings of this analysis suggest that regulatory differences affect foreign subsidiaries' transparency regardless of bank size.

4.2 Foreign Subsidiaries' Transparency and Instability

In this section, we test our second hypothesis regarding the effect of transparency on the financial strength of foreign subsidiaries. The identification challenge is that without exogenous change in transparency, it is difficult to attribute changes in bank stability to changes in bank transparency. To overcome this challenge, we employ the 2007-2009 global financial crisis as an unexpected negative shock to banks' financial performance. If banks provide more transparent information, we predict that they would be less likely to fail or have troubles during the financial crisis.

We test our prediction by regressing *Bank failure* or *Large deposit withdrawal* over 2007-2009 on *Disclosure* as measured in 2006. Following prior studies (Kanagaretnam et al. 2014; Bushman and Williams 2015), we include control variables on bank performance and risk that are expected to influence stability, also measured in 2006.¹⁷ Appendix A provides detailed definitions of variables. Our regression model follows:

$$\begin{aligned} \text{Bank failure/Large deposit withdrawal} = & \beta_0 + \beta_1 \text{Disclosure}_t + \beta_2 \text{Size} + \beta_3 \text{ROA} \\ & + \beta_4 \text{Loan growth} + \beta_5 \text{Capital ratio} + \beta_6 \text{Z_Score} \\ & + \sum \beta_m \text{Entity type fixed effects} + \varepsilon \end{aligned} \quad (2)$$

Our hypothesis predicts β_1 , the coefficient on *Disclosure*, to be negative. Because each foreign subsidiary only appears once in this analysis, we adjust the standard errors by clustering at the host-country level.

Panel A of Table 4 reports the results of this analysis for bank failures. Column (1) shows that the coefficient on *Disclosure* is significantly negative, suggesting that foreign subsidiaries with

¹⁷ We do not include host country-year fixed effects because the failure of foreign subsidiaries is a rare event and there is not enough variation within each host country during the crisis period. In addition, our interest is to assess the effect of transparency on instability (rather than the incremental effect of transparency on the institutional variables), because transparency is an outcome variable that reflects both cross-country regulatory differences and host-country institutions.

greater transparency are less likely to fail during the financial crisis. In terms of economic significance, one standard deviation decrease (increase) in *Disclosure* from the mean increases (decreases) the probability of failure from 2.97% to 9.49% (from 2.97% to 0.69%) when all other variables equal their means. Columns (2) and (3) use the two disclosure sub-indexes, *Disclosure_Loans* and *Disclosure_Securities* as our proxy for bank transparency. We find that the results remain qualitatively the same. In Column (4), we further include regulatory differences to the model in Column (1). We find that the coefficient on *Disclosure* continues to be significantly negative and the coefficient on *Diff_ActRestrict* is insignificant. This finding is consistent with that transparency, as an outcome measure of managers' actual reporting behavior, has a dominant effect on foreign subsidiaries' instability. We conjecture that the incremental effect of *Diff_ActRestrict* to transparency and other bank control variables on bank instability may be insignificant because regulatory differences are the fundamental institutional arrangements that affect these variables. To explore whether regulatory differences help explain the likelihood of failures, we rerun the regression after only including *Diff_ActRestrict* and entity-type fixed effects. Consistent with the notion that regulatory differences increase the likelihood of subsidiaries' failures due to risk shifting and the accompanied opaque reporting, Column (5) shows that the coefficient on *Diff_ActRestrict* becomes significantly positive.

Panel B of Table 4 reports the results for large deposit withdrawal. Columns (1)-(3) show that the coefficients on *Disclosure* and *Disclosure_Securities* remain significantly negative, but the coefficient on *Disclosure_Loans* becomes insignificant. Because we do not include failed banks when coding the *Disclosure_Loans*, the insignificant coefficient on *Disclosure_Loans* in Panel B, combined with the significantly negative coefficient on this variable in Panel A, suggests that opacity of loan disclosure is associated with a more severe outcome. Column (4) shows that the

coefficient on *Disclosure* continues to be significantly negative after adding *Diff_ActRestrict*. Column (5) finds that the coefficient on *Diff_ActRestrict* is insignificant, likely due to the weakened test power of excluding the failed banks. Overall, the finding in Table 4 provides support to our hypothesis that foreign subsidiaries' diminished transparency exacerbates their financial instability.

5. Additional Analyses

5.1 Mechanisms through which Regulatory Differences Affect Transparency

In this section, we investigate the mechanisms through which regulatory differences affect foreign subsidiaries' transparency. As discussed previously, banks may reduce foreign subsidiaries' transparency due to risk-shifting incentives or proprietary cost considerations. We examine the role of risk-shifting incentives by taking advantage of the cross-country differences in the host-country supervisory power. We capture the strength of bank supervision using the supervisory power index developed by Barth et al. (2013). This index, ranging from zero to 14, measures the extent to which the bank supervisors in the country have the authority to take specific actions to prevent and correct problems. Because strong host-country supervisory power should reduce banks' ability to take excessive risk at the expense of debtholders, the risk-shifting explanation predicts that the negative relation between disclosure and regulatory differences will be stronger among subsidiaries in host-countries with weaker supervisory power. For the role of proprietary costs, we follow prior research and use profitability as a measure of proprietary costs (Dedman and Lennox 2009; Bernard 2016). Under the proprietary cost explanation, we predict that the negative relation between disclosure and regulatory differences will be stronger among subsidiaries with higher ROA.

We perform this analysis by partitioning our sample based on the sample median of subsidiaries' host-country supervisory power and profitability, then re-estimate equation (1) for each of the subsamples. Table 5 presents the results. Columns (1)-(2) show the results of the analysis conditional on host-country supervisory power. We find that the coefficient on *Diff_ActRestrict* is insignificant for subsidiaries in the host countries with strong supervisory power and significantly negative for subsidiaries in the host countries with weak supervisory power. In addition, the difference in this coefficient between the subsamples is significant. Columns (3)-(4) show the results of the analysis conditional on subsidiaries' ROA. We find that the coefficient on *Diff_ActRestrict* is significantly negative among the subsamples of high and low ROA, with the difference in this coefficient insignificant at conventional levels. These findings indicate that weak host-country supervisory power, but not profitability, exacerbates the negative effect of regulatory differences on bank foreign subsidiaries' transparency. Thus, the analysis in Table 5 suggests that risk-shifting incentives, rather than proprietary cost considerations, shape the disclosure practices of foreign subsidiaries.

5.2 Bank Acquisitions, Regulatory Differences, and Transparency

To strengthen the causal inference of the regulatory differences on bank subsidiaries' transparency, we use acquisitions of foreign subsidiaries to perform a difference-in-differences analysis. Following the inference from our previous analyses, we expect the acquired subsidiary's transparency to decrease after the deal when the country of the acquirer bank has more restrictive regulations than the country of the target bank.

We build the sample for this test by using data from Zephyr as of 2013. We include cross-border deals that involve majority control acquisitions (i.e., acquisitions where the acquirer banks obtain more than 50% ownership of the subsidiary bank) from 1995-2012. We stop the financial

statement data in 2014, to allow two years after the acquisition in 2012. The final sample for this analysis consists of 438 subsidiary-years based on 49 deals from 22 acquirer countries and 24 target countries.

We perform this analysis by regressing *Disclosure* on a dummy variable indicating post acquisition period (*Post*), a variable measuring the regulatory difference between the country of the acquirer bank and the country of the target bank (*Diff_ActRestrict*), their interaction term, and the same control variables in equation (1). In addition to entity-type and host-country-year fixed effects, we also include deal payment fixed effects.

Table 6 reports the results. Column (1) shows that coefficient on *Post* is insignificant, suggesting that there is no change in transparency for subsidiaries that are acquired by banks from a country with a less restrictive regulations. The coefficient on *Diff_ActRestrict* is also insignificant, suggesting that prior to the acquisition, there is no difference in transparency between subsidiaries that are acquired by banks from a country with a less regulatory restrictions versus those from a country with a more regulatory restrictions. Importantly, we find that the coefficient on $Post \times Diff_ActRestrict$ is significantly negative. This result suggests that the acquired subsidiary's transparency decreases when the acquirer bank is from a country with greater regulatory restrictions. The results hold when we exclude the event year to mitigate the confounding effect of acquisition and restrict the sample to be two year before and after the bank acquisition (Columns (2) and (3)).¹⁸

To assess the parallel trend assumption underlying our difference-in-differences estimation, we

¹⁸ We use acquisitions events in all years to increase the power of the test. In a robustness check (untabulated), we rerun the model in Column (1) of Table 5 after restricting the acquisition events to the period 1995-2006, as in our analysis testing the first hypothesis. While this modified sample includes only 24 cross-border deals, we find that our inference remains unchanged. Specifically, the coefficient on $Post \times Diff_ActRestrict$ remains significantly negative at the 10% two-tailed level.

replace the *Post* indicator with indicators that track the effect of the acquisitions before and after they take place. Specifically, we interact *Diff_ActRestrict* with six indicator variables, *Before Year -2*, *Year -2*, *Year -1*, *Year 1*, and *Year 2*, and *After Year 2*, which equal to one for the more than two year prior to, two year prior to, the year prior to, one year after, two years after, and more than two years after the acquisition, respectively. The year of acquisition serves as the benchmark. Column (4) of Table 6 shows insignificant coefficients on *Before Year -2* \times *Diff_ActRestrict*, *Year -2* \times *Diff_ActRestrict*, and *Year -1* \times *Diff_ActRestrict*. These results support the parallel trend assumption and suggest no difference in transparency among targets acquired by banks with different regulatory restrictions prior to the acquisition. In addition, Column (4) shows a significantly negative coefficient on *Year 2* \times *Diff_ActRestrict* and *After Year 2* \times *Diff_ActRestrict*, suggesting that the negative effect of regulatory differences on subsidiaries' transparency materializes after the acquisition.

5.3 Using Foreign Branches as the Benchmark

Our primary analyses include host-country \times year fixed effects to control for the host-country and time effects. To better control for the home-country effects, we perform additional analysis using foreign branches from the same home country as the benchmark. Unlike subsidiaries, branches lack separate legal entity and have to comply with their home country's regulations and supervisions. Thus, foreign subsidiaries, but not foreign branches, provide an opportunity for parent banks to take advantage of the regulatory differences when facing restrictive regulations at home.

We perform this test by restricting our sample to home countries with both subsidiaries and branches abroad. This restriction results in a sample of 138 foreign subsidiaries and 34 foreign branches from 12 home countries (714 total observations, in 30 host countries). We then regress

the disclosure index (*Disclosure*) on the regulatory difference (*Diff_ActRestrict*), a dummy variable indicating subsidiary (*Subsidiary*), their interaction term, and the same controls in equation (1). Table 7 reports the results. We find that the coefficient on *Diff_ActRestrict* is insignificant, suggesting that regulatory differences do not affect foreign branches' transparency. In addition, the coefficient on *Subsidiary* \times *Diff_ActRestrict* is significantly negative. This result suggests that relative to foreign branches, foreign subsidiaries' transparency reduces when home-country regulations are more restrictive than the host-country regulations, thereby lending further support to our inferences.

6. Robustness Checks

We conduct several robustness checks using additional control variables and alternative samples for our first hypotheses test. We summarize the results of these robustness checks below. Table 8 presents the results.

6.1 Controlling for Differences in Other Regulation Indexes

Our study focuses on the difference in activity restrictions index because of its theoretical and empirical support in the literature. While the activity restriction index is commonly used in prior studies on regulatory arbitrage to capture restrictiveness of bank regulations (Houston et al. 2012; Ongena et al. 2013; Karolyi and Taboada 2015), we acknowledge that there are alternative regulation indexes. For example, in addition to the activity restriction index, Karolyi and Taboada (2015) use three alternative measures of bank regulations from Barth et al. (2013): stringency of capital regulations, official supervisory power, and private monitoring. It is unclear, however, that the differences in these alternative measures of regulation indexes will increase risk shifting and

reduce transparency abroad.¹⁹ Nonetheless, we perform additional analyses exploring whether our results are robust to controlling for the differences in these other regulation indexes.

We repeat our analyses after further including the differences in the capital regulations, supervisory power, and private monitoring indexes between home and host countries. The capital regulation index measures how much capital the bank must hold and whether the capital requirement reflects certain risk elements. The supervisory power index is discussed in Section 5.1. The private monitoring index measures whether there are incentives/ability for the private monitoring of firms, with higher values indicating more private monitoring. The results, reported in Column (1) of Table 8, are qualitatively the same as those reported in Table 3.²⁰ Thus, the results of our first hypothesis test are robust to controlling for the differences in other regulation indexes.

6.2 Controlling for Differences in Economic and Governance Factors

A potential alternative explanation for our finding is that international economic and institutional differences drive the quality of banks' reporting practices abroad. Thus, we repeat our analysis in Panel A of Table 3 after controlling for the differences in economic and governance factors between home and host countries. We include GDP growth and GDP per capita for the economic factors and use the average of the six governance indicators from Kaufmann et al. (2009) for the governance factor. The results, reported in Column (2) of Table 8, are qualitatively the same as those reported in Table 3. Thus, the results of our first hypothesis test are robust to controlling for the differences in economic and governance factors.

6.3 Excluding Countries with Influential Observations

To ensure the robustness of our findings, we identify the countries that are disproportionately

¹⁹ For example, it is plausible that greater home-country private monitoring by auditors and credit rating agencies may reduce risk shifting and increase transparency of foreign subsidiaries.

²⁰ By "qualitatively the same as those reported in Table 3," we mean that the coefficient on *Diff_ActRestrict* in Column (1) of Table 3, Panel A is negative and significant at $p\text{-value} \leq 10\%$.

represented and perform the analysis excluding banks from these countries. As shown in Table 1, Panel B, Germany, France, and the U.K. are the home countries of a large number of foreign subsidiaries. To assess the robustness of our results, we repeat our analysis in Table 3, Panel A after excluding foreign subsidiaries from these countries one at a time. The results, reported in Columns (3)-(5) of Table 8, are qualitatively the same as those reported in Table 3.²¹ Thus, the results of our first hypothesis test are not sensitive to excluding countries with influential observations.

6.4 Restricting the Analysis to Commercial Banks

As discussed previously, our analysis includes all types of banks. While we require our sample firms to have loans and securities in their balance sheets, and control for entity fixed effects, we explore whether our results are sensitive to restricting the sample to commercial banks. The results, reported in Column (6) of Table 8, are qualitatively the same as those reported in Table 3. Thus, the results of our first hypothesis test are robust to restricting the sample to commercial banks.

6.5 Alternative Transparency Measures

We explore the robustness of our result using audit opinions as an alternative measure of transparency. External auditors are important information intermediaries who provide independent assurance of the quality of financial reports (DeFond and Zhang 2014). Auditors' issuance of qualified audit opinions typically indicates deviations from the generally accepted accounting principles (GAAP) or scope limitations, which alerts investors and regulators of potential earnings manipulation. If the restrictiveness of the home-country regulations reduces foreign subsidiaries' transparency, we expect to observe a greater likelihood of qualified audit opinions for the foreign

²¹ Table 1, Panel C shows that Luxembourg, Switzerland, and the U.K are the host countries of a large number of foreign subsidiaries. In additional robustness checks, we repeat our analysis in Table 3, Panel A after excluding foreign subsidiaries located in these countries one at a time. The results (untabulated) are qualitatively the same as those reported in Table 3.

subsidiaries.

We perform this analysis by regressing *Qualified opinion*, a dummy variable indicating whether the bank subsidiary receives a qualified audit opinion, on *Diff_ActRestrict* and the same set of variables controlling for bank characteristics as in equation (1), as well as host-country fixed effects and year fixed effects.²² Column (7) of Table 8 presents the result.²³ Consistent with our prediction, the coefficient on *Diff_ActRestrict* is significantly positive. Thus, the result of our first hypothesis test is robust to using audit opinions as an alternative measure of transparency.

7. Conclusions

We find that regulatory inconsistency affects the transparency of banks' foreign subsidiaries. When the home country has more restrictions on bank activities than the host country, foreign subsidiaries' disclosures of their loans and investment securities decrease. This finding is more pronounced when the host-country supervision is weaker. Exploiting the 2007-2009 financial crisis as a negative shock, we also find that foreign subsidiaries are more likely to fail or face large deposit withdrawals during the crisis when they have more opaque financial reporting right before the crisis.

Collectively, our results are consistent with the view that parent banks use opaque reporting practices to conceal their risk-shifting that takes advantage of the cross-country regulatory differences. Analyses using a difference-in-differences design based on international bank acquisitions and using an alternative benchmark based on foreign branches further strengthen our

²² We do not include entity type and country×year fixed effects because the issuance of qualified audit opinions is a relatively infrequent phenomenon and a model including these fixed effects does not converge.

²³ Because some subsidiaries are not audited, the number of observations for this test is slightly reduced. About 0.6 percent of the subsidiaries in our sample receive qualified audit opinion. The low frequency is consistent with our expectation that qualified audit opinion is a relatively extreme outcome.

inference. Overall, our study contributes to the literature by documenting the impact of regulatory inconsistency on foreign subsidiaries' transparency and the economic consequences of the diminished transparency.

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Appendix A Variable Definitions

Variable	Definition	Source
Regulation variables		
<i>ActRestrict</i>	A country-level index of regulatory restrictions on bank activities. This index measures the regulatory impediments to a bank's engagement in securities (underwriting, brokering and dealing in securities, and all aspects of the mutual fund industry), insurance (insurance underwriting and selling), and real estate (real estate investment, development and management) activities. The index ranges from 3 to 12, with higher values indicating more activity restrictions on banks (including either banks or subsidiaries, or in another part of a common holding company or parent).	Barth, Caprio, and Levine (2013)
<i>Diff_ActRestrict</i>	Home-country activity restrictions index minus host-country activity restrictions index.	Barth, Caprio, and Levine (2013)
Financial reporting variables		
<i>Disclosure</i>	The sum of <i>Disclosure_Loans</i> and <i>Disclosure_Securities</i> . The index ranges from 0 to 7, with higher values indicating more transparent financial reporting.	Bankscope
<i>Disclosure_Loans</i>	The sum of the following three disclosure variables: (1) <i>LLP disclosure</i> , an indicator variable equal to one if the bank discloses the amounts of loan loss provisions, (2) <i>NPL disclosure</i> , an indicator variable equal to one if the bank discloses the amounts of non-performing loans, and (3) <i>Loan type disclosure</i> , an indicator variable equal to one if the bank discloses the loan types (commercial, consumer, or mortgage loans). The index ranges from 0 to 3, with higher values indicating more transparent financial reporting on loan quality.	Bankscope
<i>Disclosure_Securities</i>	The sum of the following three variables: (1) <i>Trading gain/loss disclosure</i> , an indicator variable equal to one if the bank discloses realized trading gains or losses, (2) <i>Unrealized gain/loss disclosure</i> , an indicator variable equal to one if the bank discloses unrealized trading gains or losses, and (3) <i>Security type disclosure</i> , an indicator variable equal to zero if the bank does not disclose information on types of securities, equal to one if the bank discloses information on types of securities (debt securities, equities, and commodities), and equal to two if the bank discloses information about the types and issuing party of securities (governments, banks, corporates, structured). The index ranges from 0 to 4, with higher values indicating more transparent financial reporting on security holdings and profits.	Bankscope
<i>Qualified opinion</i>	An indicator variable equal to one if the bank receives a qualified audit opinion.	Bankscope

Appendix A, continued

Variable	Definition	Source
Financial stability variables		
<i>Bank failure</i>	An indicator variable equal to one if a bank ceases to have financial statement information during 2007-2009 and is inactive (as of the most recent Bankscope data, 2016).	Bankscope
<i>Large deposit withdrawal</i>	An indicator variable equal to one if an annual deposit growth of a bank lies at the bottom 10 percentile of the distribution of overall deposit growth (with a cut off of -23.56%) during the crisis period 2007-2009.	Bankscope
Control variables		
<i>Size</i>	The log of lagged total assets (in USD millions).	Bankscope
<i>ROA</i>	Return on assets, measured as net income scaled by lagged total assets.	Bankscope
<i>Loan growth</i>	The percentage change in total loans over the year.	Bankscope
<i>Capital ratio</i>	Equity divided by lagged total assets.	Bankscope
<i>Big 5</i>	An indicator variable equal to one if the bank is audited by a Big 5 auditor.	Bankscope
<i>Public</i>	An indicator variable equal to one if the bank is publicly listed.	Bankscope
<i>Same language</i>	An indicator variable equal to one if the home and host countries share the same official language.	Mayer and Zignago (2011)
<i>Z_Score</i>	The natural logarithm of the distance to default, measured as mean (ROA+CAR)/volatility (ROA) over the five-year period from year $t-4$ to year t . ROA is the return on assets, CAR is the capital to asset ratio, and volatility (ROA) is the standard deviation of ROA.	Bankscope
<i>External audit</i>	The effectiveness of external audits of banks. This index ranges from 0 to 7, with higher values indicating better strength of external audit.	Barth et al. (2013)
<i>Accounting practices</i>	The type of accounting practices (e.g., US GAAP and IFRS) used at the individual bank level or the consolidated level. This index ranges from 0 to 1, with higher values indicating better practices.	Barth et al. (2013)
<i>Transparency</i>	The transparency of bank financial statements practices, such as the requirement of consolidated accounts and disclosure of off balance items. This index ranges from 0 to 6, with higher values indicating greater transparency.	Barth et al. (2013)
<i>Deal payment</i>	An indicator variable equal to one if the acquisition payment method is cash.	Zephyr
<i>Subsidiary</i>	An indicator variable equal to one if the bank is a subsidiary and equal to zero if the bank is a branch.	Bankscope

Appendix A, continued

Variable	Definition	Source
Control variables		
<i>Supervisory power</i>	The index measures the extent to which the bank supervisors have the authority to take specific actions to prevent or correct problems. This index ranges from 0 to 14, with higher values indicating stronger supervisory power.	Barth et al. (2013)
<i>Capital regulations</i>	The index measures how much capital the bank must hold and whether the capital requirement reflects certain risk elements. The index ranges from 0 to 10, with higher values indicating greater stringency.	Barth et al. (2013)
<i>Private monitoring</i>	The index measures whether there are incentives/ability for private monitoring, with higher values indicating more private monitoring. The index ranges from 0 to 12, with higher values indicating more private oversight.	Barth et al. (2013)
<i>GDP growth</i>	Annual growth in real GDP.	World Bank
<i>GDP per capita</i>	The log of real GDP (current US \$) divided by the average population.	World Bank
<i>Governance index</i>	The average of all six governance indicators: political stability, voice and accountability, government effectiveness, regulatory quality, control of corruption, and rule of law. Each of the indices ranges from -2.5 to 2.5, with higher values indicating better governance.	Kaufmann et al. (2009)
Other variables		
<i>Entity-type fe.</i>	Indicator variables for bank-entity type.	Bankscope
<i>Host-country×year fe.</i>	Indicator variables for host country-years.	Bankscope
<i>Host-country fe.</i>	Indicator variables for host countries.	Bankscope
<i>Home-country fe.</i>	Indicator variables for home countries.	Bankscope
<i>Year fe.</i>	Indicator variables for years.	Bankscope

Appendix B

Regulation Indexes by Country

This table presents the mean values of bank regulations and supervision indexes by country. The indexes are from the databases used in Barth et al. (2013).

Country	Activity restrictions	External audit	Accounting practices	Transparency	Supervisory power	Capital regulations	Private monitoring
Argentina	7.25	6.25	0.00	5.25	6.75	9.50	8.75
Australia	7.25	5.75	1.00	5.50	7.25	11.50	9.75
Austria	4.50	6.75	0.50	4.25	6.75	12.00	6.50
Bahrain	7.50	6.75	1.00	6.00	6.00	13.00	9.25
Belgium	6.00	7.00	0.00	5.00	6.88	11.00	7.25
Botswana	8.50	6.00	1.00	4.75	7.75	10.00	9.00
Brazil	6.25	6.00	0.67	5.00	5.50	13.50	8.75
Canada	5.25	5.50	0.50	5.50	4.50	8.50	8.75
Cayman Islands	6.33	4.22	1.00	3.65	7.43	8.76	7.00
Chile	9.25	5.75	0.25	5.25	5.75	11.50	7.75
China	10.63	4.69	0.25	4.70	6.50	11.07	9.33
Croatia	6.00	7.00	1.00	5.50	5.50	11.75	7.67
Czech Republic	7.67	5.33	1.00	4.67	4.67	10.33	7.00
Denmark	6.50	6.75	0.50	5.50	5.75	9.50	9.00
Egypt	8.00	7.00	1.00	5.75	6.25	13.00	8.75
Estonia	5.25	7.00	1.00	5.50	6.00	12.50	8.00
France	5.75	6.00	0.25	4.75	6.25	8.25	7.50
Germany	4.33	6.25	0.33	4.25	6.75	9.25	7.50
Greece	6.75	6.00	0.50	5.00	5.75	10.00	7.50
Hong Kong	3.25	5.71	1.00	5.50	5.67	10.61	8.67
Hungary	7.00	7.00	0.67	4.75	6.25	13.88	8.25
Indonesia	9.67	6.50	1.00	5.25	7.67	14.25	9.00
Ireland	5.00	6.25	1.00	5.50	5.65	9.50	10.00
Israel	9.75	5.00	0.67	6.00	6.50	8.98	9.50
Italy	7.75	4.75	0.50	5.25	4.85	8.25	7.50
Japan	8.67	4.33	0.50	4.67	5.33	11.95	9.00
Jordan	8.00	6.50	1.00	5.25	8.00	11.42	7.25

Appendix B, continued

Country	Activity restrictions	External audit	Accounting practices	Transparency	Supervisory power	Capital regulations	Private monitoring
Kuwait	6.00	6.25	1.00	6.00	7.50	10.50	10.67
Latvia	5.50	5.00	1.00	5.45	6.50	11.17	8.25
Lebanon	8.25	7.00	1.00	5.50	7.75	9.75	8.25
Liechtenstein	7.00	7.00	0.50	5.75	8.00	11.09	8.25
Luxembourg	5.25	7.00	0.25	5.50	7.00	12.25	7.75
Macao	7.00	5.50	1.00	5.00	4.75	11.00	7.25
Malawi	9.67	4.90	1.00	4.00	7.00	11.25	7.67
Malaysia	7.25	6.25	1.00	5.50	3.75	13.23	8.75
Malta	7.75	6.25	1.00	6.00	6.75	12.75	9.00
Mauritius	9.75	6.50	1.00	5.25	7.00	11.50	8.50
Mexico	7.25	6.25	0.00	5.25	6.15	11.63	8.67
Morocco	8.50	5.75	0.25	5.25	6.25	11.51	8.00
Mozambique	7.25	6.50	1.00	5.25	4.00	12.11	7.00
Netherlands	4.75	6.50	0.50	5.00	6.75	8.64	8.50
New Zealand	3.75	4.75	1.00	5.75	2.75	9.08	9.75
Norway	6.00	6.75	0.25	4.65	7.33	9.22	7.89
Pakistan	9.00	7.00	1.00	5.75	8.00	13.75	9.00
Poland	8.00	5.75	0.50	5.00	6.00	9.90	8.00
Portugal	6.75	6.00	0.25	5.00	6.25	13.23	6.75
South Korea	7.75	5.25	0.67	6.00	5.75	9.75	10.33
Russia	5.75	4.75	0.00	3.85	7.00	8.88	7.00
Singapore	6.50	7.00	1.00	6.00	7.50	12.69	9.25
Slovenia	7.00	7.00	0.50	5.25	7.50	13.50	7.75
South Africa	6.75	6.25	1.00	6.00	6.75	7.00	9.75
Spain	5.25	5.75	0.25	5.50	8.75	9.88	8.50
Sweden	7.00	5.33	1.00	5.00	3.00	7.33	7.00
Switzerland	4.25	7.00	0.67	5.75	6.50	13.00	7.75
Thailand	8.25	6.00	0.67	5.00	5.75	10.92	8.50
Turkey	8.00	7.00	1.00	5.25	6.67	13.50	7.67
UK	3.75	5.50	0.25	5.50	6.25	10.00	10.00
US	8.50	6.00	1.00	5.25	6.50	13.38	9.75
Uruguay	7.63	5.75	1.00	5.50	7.00	13.25	9.67

Table 1
Sample Distribution

Panels A, B, and C report the sample distribution of foreign subsidiaries by year, home country, and host country, respectively. The sample consists of majority-owned foreign subsidiaries from Bankscope that do not involve with cross-border mergers and acquisitions, and meet our data requirements.

Panel A: Sample Distribution by Year

Pre-Crisis period (N, sub.-years=1,140)										Crisis period (N, sub.-years=516)					N (sub.-years)	N (subs.)
1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total	
4	25	36	37	50	68	98	179	181	162	155	145	152	167	197	1,656	304

Panel B: Sample Distribution by Home Country

Region	Home country	N, sub.-years	%, sub.-years	N, subs.	Region	Home country	N, sub.-years	%, sub.-years	N, subs.
<i>Europe</i>	Germany	190	11.47%	26		Singapore	25	1.51%	3
	France	155	9.36%	29		Hong Kong	23	1.39%	4
	UK	124	7.49%	26		Israel	17	1.03%	4
	Switzerland	106	6.40%	18		Kuwait	12	0.72%	2
	Austria	100	6.04%	20		Turkey	11	0.66%	4
	Luxembourg	89	5.37%	14		Bahrain	11	0.66%	2
	Italy	73	4.41%	15		Thailand	10	0.60%	1
	Spain	66	3.99%	15		Other	43	2.58%	8
	Netherlands	61	3.68%	10		Subtotal	308	18.57%	59
	Sweden	55	3.32%	8		<i>Americas</i>	Canada	75	4.53%
	Belgium	30	1.81%	8	Brazil		15	0.91%	4
	Russia	26	1.57%	4	US		15	0.91%	5
	Denmark	19	1.15%	3	Other		5	0.30%	4
	Greece	18	1.09%	2	Subtotal		110	6.65%	23
	Liechtenstein	16	0.97%	2	<i>Africa</i>	South Africa	24	1.45%	4
	Slovenia	14	0.85%	2		Egypt	13	0.78%	4
	Norway	12	0.72%	2		Subtotal	37	2.23%	8
	Other	11	0.66%	5	<i>Oceania</i>	Australia	36	2.17%	5
	Subtotal	1,165	70.35%	209		Subtotal	36	2.17%	5
	<i>Asia</i>	Japan	109	6.58%	23				
South Korea		47	2.84%	8	Total	1,656	100.00%	304	

Table 1, continued

Panel C: Sample Distribution by Host Country

Region	Host country	N, sub.-years	%, sub.-years	N, subs.	Region	Host country	N, sub.-years	%, sub.-years	N, subs.	
<i>Europe</i>	Luxembourg	296	17.87%	37	<i>Americas</i>	Hong Kong	43	2.60%	10	
	Switzerland	283	17.09%	41		Macao	23	1.39%	4	
	UK	130	7.85%	21		Indonesia	21	1.27%	5	
	Germany	115	6.94%	21		Singapore	17	1.03%	4	
	Czech republic	44	2.66%	8		Other	19	1.14%	9	
	France	41	2.48%	7		Subtotal	186	11.23%	39	
	Netherlands	34	2.05%	7		Brazil	63	3.80%	12	
	Poland	30	1.81%	8		US	20	1.21%	11	
	Belgium	26	1.57%	5		Argentina	14	0.85%	2	
	Croatia	25	1.51%	5		Chile	12	0.72%	2	
	Spain	25	1.51%	5		Uruguay	10	0.60%	2	
	Malta	23	1.39%	5		Other	20	1.20%	9	
	Austria	23	1.39%	4		Subtotal	139	8.38%	38	
	Latvia	22	1.33%	3		<i>Africa</i>	Botswana	18	1.09%	3
	Ireland	20	1.21%	7			Mauritius	14	0.85%	4
	Italy	19	1.15%	4			Malawi	10	0.60%	2
	Hungary	14	0.85%	2			Other	17	1.02%	9
	Liechtenstein	12	0.72%	3		Subtotal	59	3.56%	18	
Estonia	10	0.60%	2	<i>Oceania</i>	Australia	50	3.02%	9		
Other	4	0.24%	2		New Zealand	26	1.57%	3		
Subtotal	1,196	72.22%	197		Subtotal	76	4.59%	12		
<i>Asia</i>	Malaysia	63	3.80%	7	Total	1,656	100%	304		

Table 2
Descriptive Statistics

Panels A and B report summary statistics and correlation coefficients for the first hypothesis test on regulatory differences and bank transparency. Panels C and D report summary statistics and correlation coefficients for the second hypothesis test on bank transparency and financial instability. Correlation coefficients in bold indicate significance at the 10% level. See Appendix A for variable definitions.

Panel A: Summary Statistics of Variables, Regulatory Differences and Bank Transparency

	N	Mean	Q1	Median	Q3	Std. dev.
Diff_ActRestrict	1,140	0.273	-2.000	0.000	2.000	2.754
Disclosure	1,140	2.858	2.000	3.000	3.000	1.064
Disclosure_Loans	1,140	1.738	1.000	2.000	2.000	0.861
Disclosure_Securities	1,140	1.120	1.000	1.000	1.000	0.482
Total assets (US\$ million)	1,140	7,253	498	1,425	6,451	17,864
Size	1,140	7.318	6.068	7.148	8.685	1.719
ROA	1,140	0.011	0.003	0.008	0.016	0.017
Loan growth	1,140	0.241	-0.075	0.114	0.346	0.743
Capital ratio	1,140	0.122	0.049	0.079	0.140	0.132
Big 5	1,140	0.782	1.000	1.000	1.000	0.413
Public	1,140	0.043	0.000	0.000	0.000	0.203
Same language	1,140	0.183	0.000	0.000	0.000	0.387
Z_score	1,140	3.208	2.615	3.236	3.856	0.950
External audit	1,140	6.256	5.833	7.000	7.000	0.909
Accounting practices	1,084	0.563	0.000	1.000	1.000	0.496
Transparency	1,140	5.327	5.000	5.000	6.000	0.751

Table 2, continued

Panel B: Pearson Correlation Coefficients of Variables, Regulatory Differences and Bank Transparency

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1) Diff_ActRestrict														
(2) Disclosure	-0.27													
(3) Disclosure_Loans	-0.23	0.90												
(4) Disclosure_Securities	-0.19	0.61	0.19											
(5) Size	-0.02	0.06	0.09	-0.03										
(6) ROA	-0.07	0.00	0.03	-0.04	-0.23									
(7) Loan growth	0.00	-0.06	-0.07	0.00	-0.07	0.14								
(8) Capital ratio	0.13	-0.02	-0.02	0.00	-0.50	0.28	-0.02							
(9) Big 5	-0.04	0.07	0.11	-0.04	0.06	-0.02	0.02	-0.08						
(10) Public	-0.12	0.13	0.12	0.07	0.05	0.10	-0.03	-0.03	-0.06					
(11) Same language	-0.07	0.06	0.10	-0.04	0.12	0.07	-0.05	-0.09	-0.05	0.17				
(12) Z_score	0.09	0.03	0.06	-0.03	0.04	0.06	-0.01	0.05	0.03	0.00	-0.04			
(13) External audit	0.06	0.00	0.05	-0.09	-0.10	0.10	0.04	0.08	0.19	-0.09	-0.18	0.04		
(14) Accounting practices	-0.11	0.04	0.02	0.06	-0.32	0.25	0.00	0.26	-0.09	0.01	0.05	0.03	-0.01	
(15) Transparency	0.14	0.08	0.09	0.01	-0.03	-0.02	-0.05	0.06	0.01	-0.13	0.01	0.06	-0.04	0.14

Panel C: Summary Statistics of Variables, Bank Transparency and Financial Instability

	N	Mean	Q1	Median	Q3	Std. dev.
Bank failure ₂₀₀₇₋₂₀₀₉	145	0.069	0.000	0.000	0.000	0.254
Large deposit withdraw ₂₀₀₇₋₂₀₀₉	135	0.207	0.000	0.000	0.000	0.407
Disclosure ₂₀₀₆	145	2.834	2.000	3.000	4.000	1.080
Disclosure_Loans ₂₀₀₆	145	1.710	1.000	2.000	2.000	0.920
Disclosure_Securities ₂₀₀₆	145	1.124	1.000	1.000	1.000	0.484
Diff_ActRestrict ₂₀₀₆	145	-0.186	-2.000	0.000	1.000	2.480
Total assets ₂₀₀₆ (US\$ million)	145	8,205	566	1,877	6,506	20,059
Size ₂₀₀₆	145	7.305	6.086	7.284	8.438	1.795
ROA ₂₀₀₆	145	0.018	0.006	0.011	0.024	0.020
Loan growth ₂₀₀₆	145	0.450	0.069	0.243	0.460	1.014
Capital ratio ₂₀₀₆	145	0.115	0.048	0.085	0.138	0.110
Z_score ₂₀₀₆	145	3.354	2.763	3.390	3.990	0.941

Table 2, continued

Panel D: Pearson Correlation Coefficients of Variables, Bank Transparency and Financial Instability

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Bank failure ₂₀₀₇₋₂₀₀₉										
(2) Large deposit withdraw ₂₀₀₇₋₂₀₀₉	-0.11									
(3) Disclosure ₂₀₀₆	-0.19	-0.08								
(4) Disclosure_Loans ₂₀₀₆	-0.15	-0.03	0.89							
(5) Disclosure_Securities ₂₀₀₆	-0.13	-0.11	0.53	0.10						
(6) Diff_ActRestrict ₂₀₀₆	0.08	0.07	-0.15	-0.13	-0.08					
(7) Size ₂₀₀₆	-0.07	0.14	0.07	0.06	0.05	0.00				
(8) ROA ₂₀₀₆	0.03	-0.06	0.07	0.10	-0.03	-0.17	-0.44			
(9) Loan growth ₂₀₀₆	0.08	0.15	-0.01	0.00	-0.03	-0.06	-0.04	0.30		
(10) Capital ratio ₂₀₀₆	-0.03	-0.07	0.14	0.12	0.09	0.04	-0.46	0.46	0.07	
(11) Z_score ₂₀₀₆	0.08	-0.12	0.13	0.15	0.00	0.10	0.05	-0.08	-0.05	0.21

Table 3**The Effect of Regulatory Differences on Foreign Subsidiaries' Transparency**

The sample of this table consists of 1,140 majority-owned foreign subsidiary-years from 1995 to 2006. Panel A presents results of the analysis examining the effect of regulatory differences on foreign subsidiaries' financial reporting transparency. Panel B reports the results of the analysis conditional on the size of parent banks and foreign subsidiaries. Robust *t*-statistics, in parentheses, are based on standard errors clustered at the host country \times year level. *, ** and *** indicate significance at the 10%, 5% and 1% two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A: Analysis of Regulatory Differences and Bank Transparency Abroad

Dep. var.=	Disclosure		Disclosure		Disclosure_	Disclosure_
	(1)	(2)	(3)	(4)	Loans	Securities
Diff_ActRestrict	-0.084*** (-3.827)	-0.120*** (-8.068)	-0.046*** (-3.106)	-0.289** (-2.036)	-0.092*** (-3.694)	-0.108*** (-2.841)
Size	0.010 (0.353)	0.063** (2.490)	0.005 (0.269)	-0.039 (-0.848)	0.006 (0.189)	-0.009 (-0.216)
ROA	-2.656 (-1.302)	-4.755* (-1.819)	-1.316 (-1.060)	-5.059** (-2.266)	-1.912 (-0.807)	-3.498 (-0.978)
Loan growth	-0.099 (-1.455)	-0.033 (-0.648)	-0.056 (-1.287)	-0.081 (-1.395)	-0.116 (-1.527)	-0.079 (-0.886)
Capital ratio	-0.795 (-1.504)	0.425 (1.152)	-0.420 (-1.291)	-0.178 (-0.282)	-0.907* (-1.734)	0.090 (0.098)
Big 5	-0.474*** (-3.589)	0.053 (0.495)	-0.258*** (-2.896)	-0.635*** (-4.316)	-0.404*** (-2.801)	-0.912*** (-4.883)
Public	0.905*** (4.752)	0.754*** (5.513)	0.498*** (4.331)	0.400 (1.602)	1.048*** (5.038)	0.470 (1.484)
Same language	0.259** (2.072)	-0.075 (-0.794)	0.144* (1.874)	0.054 (0.464)	0.220 (1.589)	0.265 (1.138)
Z_Score	0.107* (1.737)	0.030 (0.652)	0.056 (1.380)	0.130* (1.907)	0.140** (1.995)	-0.022 (-0.305)
External audit		0.013 (0.215)				
Accounting practices		0.068 (0.639)				
Transparency		0.189*** (2.725)				
Entity type fe.	Yes	Yes	Yes	Yes	Yes	Yes
Host-country \times Year fe.	Yes	No	Yes	Yes	Yes	Yes
Model	Ordered probit	Ordered probit	OLS	Ordered probit - IV	Ordered probit	Ordered probit
No. of obs.	1,140	1,084	1,140	1,080	1,140	1,140
Pseudo R ² / Adj. R ²	0.370	0.095	0.667	0.364	0.415	0.648

Table 3, continued

Panel B: Analysis Conditional on Bank Size

	Dep. var.=Disclosure			
	Large size parent bank	Small size parent bank	Large size subsidiary	Small size subsidiary
	(1)	(2)	(3)	(4)
Diff_ActRestrict (β_1)	-0.135** (-2.043)	-0.122** (-2.538)	-0.122*** (-2.741)	-0.127*** (-3.116)
<i>Test of difference in β_1</i>		<i>0.013</i>		<i>-0.005</i>
Size	-0.079 (-0.924)	0.160** (2.033)	-0.142** (-2.031)	0.092 (1.097)
ROA	-6.977 (-1.293)	-3.905 (-0.926)	-2.748 (-0.264)	-1.250 (-0.498)
Loan growth	-0.107 (-0.937)	-0.220 (-1.370)	-0.066 (-0.604)	-0.115 (-0.983)
Capital ratio	-1.389 (-1.101)	0.316 (0.484)	4.641** (2.300)	-0.905 (-1.500)
Big 5	-1.607*** (-5.276)	0.224 (1.047)	-0.999*** (-3.384)	-0.676** (-2.504)
Public	1.435*** (3.945)	0.346 (0.752)	-0.267 (-0.604)	1.013** (2.322)
Same language	0.310 (1.321)	-0.249 (-0.907)	0.471** (2.097)	-0.344 (-1.405)
Z_Score	0.005 (0.049)	0.103 (0.829)	0.391*** (4.298)	-0.059 (-0.566)
Entity type fe.	Yes	Yes	Yes	Yes
Host-country×Year fe.	Yes	Yes	Yes	Yes
Model	Ordered Probit	Ordered Probit	Ordered Probit	Ordered Probit
No. of obs.	474	475	570	570
Pseudo R ²	0.412	0.520	0.479	0.448

Table 4
Transparency and Instability

This table presents the results of the analysis examining the effect of foreign subsidiaries' transparency on their instability during the 2007-2009 global financial crisis. The dependent variable is measured during the crisis period, 2007-2009, and the independent variables are measured in the year before the crisis, 2006. Panel A presents the result for bank failures during the crisis, based on the sample consists of 145 banks that existed in 2006. Panel B presents the result for large deposit withdrawals during the crisis, based on the 135 banks that survived the crisis. Robust *t*-statistics, in parentheses, are based on standard errors clustered at the host country level. *, ** and *** indicate significance at the 10%, 5% and 1% two-tailed levels, respectively. See Appendix A for variable definitions.

Panel A: Transparency and Crisis-Period Failures

	Dep. var.= Bank failure₂₀₀₇₋₂₀₀₉				
	(1)	(2)	(3)	(4)	(5)
Disclosure₂₀₀₆	-0.532*** (-3.609)			-0.531*** (-3.458)	
Disclosure_Loans₂₀₀₆		-0.568*** (-3.518)			
Disclosure_Securities₂₀₀₆			-0.644** (-2.474)		
Diff_ActRestrict ₂₀₀₆				0.046 (1.103)	0.089** (2.525)
Size ₂₀₀₆	-0.155** (-2.195)	-0.156** (-2.447)	-0.189** (-2.266)	-0.148** (-2.087)	
ROA ₂₀₀₆	-8.468 (-0.711)	-6.743 (-0.564)	-11.378 (-1.141)	-5.252 (-0.414)	
Loan growth ₂₀₀₆	-1.463*** (-3.498)	-1.545*** (-3.319)	-1.057*** (-3.201)	-1.346*** (-3.896)	
Capital ratio ₂₀₀₆	-1.530 (-0.650)	-1.765 (-0.702)	-1.687 (-0.817)	-1.830 (-0.708)	
Z_score ₂₀₀₆	0.430* (1.687)	0.431* (1.825)	0.253 (0.978)	0.440* (1.735)	
Entity type fe.	Yes	Yes	Yes	Yes	Yes
Model	Probit	Probit	Probit	Probit	Probit
No. of obs.	145	145	145	145	145
Pseudo R ²	0.273	0.266	0.199	0.276	0.096

Table 4, continued

Panel B: Transparency and Crisis-Period Deposit Withdrawals

	Dep. var.=Large deposit withdrawal ₂₀₀₇₋₂₀₀₉				
	(1)	(2)	(3)	(4)	(5)
Disclosure₂₀₀₆	-0.183* (-1.873)			-0.175* (-1.800)	
Disclosure_Loans₂₀₀₆		-0.080 (-0.631)			
Disclosure_Securities₂₀₀₆			-0.827*** (-3.092)		
Diff_ActRestrict ₂₀₀₆				0.045 (0.885)	0.030 (0.551)
Size ₂₀₀₆	0.082 (0.819)	0.067 (0.689)	0.089 (0.892)	0.090 (0.933)	
ROA ₂₀₀₆	-4.978 (-0.500)	-5.734 (-0.570)	-6.561 (-0.712)	-3.577 (-0.366)	
Loan growth ₂₀₀₆	0.209 (1.587)	0.194 (1.531)	0.214 (1.539)	0.217 (1.607)	
Capital ratio ₂₀₀₆	1.015 (0.804)	0.808 (0.643)	1.206 (0.861)	0.858 (0.675)	
Z_score ₂₀₀₆	-0.231*** (-2.786)	-0.237** (-2.517)	-0.300*** (-3.813)	-0.245*** (-3.295)	
Entity type fe.	Yes	Yes	Yes	Yes	Yes
Model	Probit	Probit	Probit	Probit	Probit
No. of obs.	135	135	135	135	135
Pseudo R ²	0.066	0.054	0.087	0.071	0.011

Table 5**Mechanisms through Which Regulatory Differences Affect Transparency**

This table presents results of the effect of regulatory differences on foreign subsidiaries' transparency, conditional on host-country supervisory power and profitability. The sample consists of 1,140 majority-owned foreign subsidiary-years from 1995 to 2006. Columns (1) and (2) report the results of the analysis conditional on host countries' supervisory power. Columns (3) and (4) report the results of the analysis conditional on foreign subsidiaries' profitability. Robust *t*-statistics, in parentheses, are based on standard errors clustered at the host country \times year level. *, ** and *** indicate significance at the 10%, 5% and 1% two-tailed levels, respectively. See Appendix A for variable definitions.

	Dep. var.= Disclosure			
	Strong host-country supervisory power	Weak host-country supervisory power	High ROA	Low ROA
	(1)	(2)	(3)	(4)
Diff_ActRestrict	-0.009 (-0.367)	-0.165*** (-4.433)	-0.066** (-2.082)	-0.095** (-2.130)
<i>Test of difference in β_1</i>		-0.156***		-0.029
Size	0.064 (1.607)	-0.020 (-0.507)	0.154** (2.178)	-0.103* (-1.701)
ROA	-1.984 (-1.018)	-3.315 (-0.893)	-7.975* (-1.848)	-7.111 (-0.708)
Loan growth	-0.077 (-0.638)	-0.187** (-2.341)	0.054 (0.272)	-0.150* (-1.751)
Capital ratio	-1.328* (-1.862)	-0.477 (-0.610)	-0.939 (-1.011)	-1.065 (-1.520)
Big 5	-0.878*** (-2.973)	-0.389** (-2.531)	-0.736*** (-3.274)	-0.826** (-2.546)
Public	1.720*** (5.037)	0.274 (1.015)	1.442*** (3.419)	0.252 (0.912)
Same language	0.507** (2.554)	0.127 (0.790)	0.790*** (3.020)	0.095 (0.425)
Z_Score	0.114 (1.414)	0.165** (1.989)	0.082 (0.732)	0.241** (2.424)
Entity type fe.	Yes	Yes	Yes	Yes
Host-country \times Year fe.	Yes	Yes	Yes	Yes
Model	Ordered probit	Ordered probit	Ordered probit	Ordered probit
No. of obs.	568	572	570	570
Pseudo R ²	0.375	0.381	0.486	0.425

Table 6**Bank Acquisitions, Regulatory Differences, and Transparency**

This table presents the effect of regulatory differences between acquirer and target countries on target banks' transparency subsequent to the acquisition, using the acquisition events during 1995-2012 from Zephyr database. Robust *t*-statistics, in parentheses, are based on standard errors clustered at the host country \times year level. *, ** and *** indicate significance at the 10%, 5% and 1% two-tailed levels, respectively. See Appendix A for variable definitions.

	Dep. var.=Disclosure			
	Full sample (1)	Excl. event year (2)	[-2, +2] (3)	Full sample (4)
Post	-0.382 (-0.930)	-0.488 (-0.987)	0.087 (0.132)	
Diff_ActRestrict	0.151 (1.031)	0.128 (0.764)	-0.178 (-0.610)	0.418* (1.834)
Post \times Diff_ActRestrict	-0.534*** (-3.378)	-0.501*** (-2.816)	-0.609* (-1.815)	
Before Year -2				-0.300 (-0.433)
Year -2				-0.772 (-1.050)
Year -1				0.521 (0.741)
Year 1				0.349 (0.520)
Year 2				-0.624 (-0.949)
After Year 2				-0.553 (-0.896)
Before Year -2 \times Diff_ActRestrict				-0.471 (-1.529)
Year -2 \times Diff_ActRestrict				-0.360 (-1.379)
Year -1 \times Diff_ActRestrict				-0.195 (-0.651)
Year 1 \times Diff_ActRestrict				-0.379 (-1.288)
Year 2 \times Diff_ActRestrict				-0.760*** (-2.580)
After Year 2 \times Diff_ActRestrict				-0.844*** (-3.411)
Control variables	Yes	Yes	Yes	Yes
Deal payment controls	Yes	Yes	Yes	Yes
Entity-type fe.	Yes	Yes	Yes	Yes
Host-country \times year fe.	Yes	Yes	Yes	Yes
Model	Ordered probit	Ordered probit	Ordered probit	Ordered probit
No. of deals	49	49	47	49
No. of acquirer/target countries	22/24	22/24	20/23	22/24
No. of obs.	438	395	193	438
Pseudo R ²	0.669	0.684	0.788	0.678

Table 7**Using Branches from the Same Home Country as the Benchmark**

This table shows the results of the analysis examining the effect of regulatory differences on foreign subsidiaries' transparency using foreign branches as the benchmark, using the sample during 1995-2006. Robust *t*-statistics, in parentheses, are based on standard errors clustered at the host country \times year level. *, ** and *** indicate significance at the 10%, 5% and 1% two-tailed levels, respectively. See Appendix A for variable definitions.

	Dep. var.=Disclosure
Diff_ActRestrict	0.040
	(1.062)
Subsidiary	0.313*
	(1.751)
Subsidiary \times Diff_ActRestrict	-0.096***
	(-2.627)
Size	0.034
	(1.037)
ROA	0.421
	(0.137)
Loan growth	-0.043
	(-0.630)
Capital ratio	-0.950
	(-1.489)
Big 5	-1.068***
	(-4.022)
Same language	0.461***
	(3.305)
Z_Score	0.129*
	(1.799)
Host-country \times Year fe.	Yes
Model	Ordered probit
No. of host/home countries	30/12
No. of subsidiaries/branches	138/34
No. of obs.	714
Pseudo R ²	0.367

Table 8
Robustness Checks

This table presents the results of the robustness checks for the effect of regulatory differences on foreign subsidiaries' transparency. Robust *t*-statistics, in parentheses, are based on standard errors clustered at the host country \times year level. *, ** and *** indicate significance at the 10%, 5% and 1% two-tailed levels, respectively. See Appendix A for variable definitions.

	Dep. var.=Disclosure						
	Additional indexes	Additional controls	Excl. Germany	Excl. France	Excl. U.K.	Commercial banks	Qualified opinion
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Diff_ActRestrict	-0.076*** (-3.544)	-0.111*** (-3.785)	-0.081*** (-3.770)	-0.108*** (-4.341)	-0.100*** (-4.235)	-0.112*** (-3.895)	1.748* (1.798)
Diff_Capital regulations	0.023 (0.722)						
Diff_Supervisory power	-0.034* (-1.883)						
Diff_Private monitoring	0.114*** (2.850)						
Diff_GDP growth		-0.004 (-0.148)					
Diff_GDP per capita		0.180 (1.467)					
Diff_Governance index		-0.402** (-2.034)					
Control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Entity type fe.	Yes	Yes	Yes	Yes	Yes	Yes	No
Host-country \times Year fe.	Yes	Yes	Yes	Yes	Yes	Yes	No
Host-country and year fe.	No	No	No	No	No	No	Yes
Model	Ordered probit	Ordered probit	Ordered probit	Ordered probit	Ordered probit	Ordered probit	Probit
No. of obs.	1,096	948	1,004	1,031	1,057	796	836
Pseudo R ²	0.368	0.354	0.382	0.386	0.375	0.413	0.644