

Suppliers, Investors, and Equity Market Liberalizations*

Martin Strieborny[†]

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Abstract

Equity market liberalizations allow foreign investors to acquire ownership stakes in domestic firms. Previous research on the real impact of these events has therefore emphasized the interactions between firms and investors. This paper shows that cross-border equity flows also improve buyers-suppliers relationships with positive ramifications for economic growth. Firstly, a buyer backed by foreign capital means a smaller probability of contract failure due to default or some liquidity problems. Secondly, liberalization-driven improvements in public and corporate governance decrease the risk of a deliberate breach of contract. Cross-border equity flows can thus reassure upstream firms about the financial stability and contractual reliability of their corporate customers. Results from panel data and event-study approach confirm that equity market liberalizations boost output growth particularly in industries dependent on the trust of their suppliers, establishing a novel channel from financial globalization to the real economy.

Keywords: cross-border equity flows; equity market liberalizations; finance and product markets; foreign ownership; financial globalization and growth

JEL classification: G15, G30, F36, F43, F 65

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[†]*Contact:* Department of Economics, Lund University, Box 7082, S-220 07 Lund, Sweden. E-Mail: Martin.Strieborny@nek.lu.se

1 Introduction

The event of equity market liberalization occurs when the government allows foreign subjects to acquire equity securities issued by the domestic firms. The research on real effects of these liberalization events has so far focused on the relations between firms and external investors. However, cross-border equity flows can also have a strong impact on the interplay among corporate agents within the realm of real economy. The case in point, stressed in this paper, is the ultimate need of the downstream firms to gain the trust of the suppliers who provide them with the necessary intermediate inputs. The input producers have a natural interest in receiving payments for the goods that they manufactured or already delivered to their corporate customers. *Financial stability* of the downstream firms therefore matters to the suppliers, as it affects buyers' *ability to pay*. Suppliers also care about *contractual reliability* of their corporate customers, because it affects buyers' *willingness to pay*. The main point of this paper is that equity market liberalizations and their ramifications help to reassure suppliers about the financial stability and contractual reliability of their buyers. This leads to smoother relationships between upstream and downstream firms with positive effects for the overall economic growth.

Let us first turn to the issue of financial stability of the downstream firms. After the event of market equity liberalization, domestic firms gain access to a new source of funding in form of foreign capital. Foreign-owned equity also makes firms more resilient to possible crises. Several recent papers (Alfaro and Chen, 2012; Desai et al., 2008; Kolasa et al., 2010) document a superior performance of foreign-owned firms during economic, financial or currency crises. Additional funding and improved crises resilience in turn decrease the probability

of liquidity problems or even default. By implication, equity liberalizations provide downstream firms with new opportunities to reassure the suppliers about their financial stability. In a different context of domestic financial development, Strieborny and Kukenova (2011) have already shown that signalling financial robustness is especially important in industries where firms need to reassure their suppliers.

Regarding contractual reliability, opening up to the foreign capital flows increases benefits and decreases costs of investment into improved corporate governance by the domestic agents who control the firms, being it managers or owners (Stulz, 2005; Doidge et al., 2007). The presence of foreign investors in the country also increases pressure on the government and regulatory agencies to improve the quality of public governance and strengthen institutions like rule of law (Stulz, 2005; Morck et al., 2005). High governance and institutional standards in turn help to prevent the occurrence of deliberate breaches of contracts and refusals to pay by the downstream purchasers of intermediate products. The liberalization-driven improvements in the area of public and corporate governance can therefore reassure the suppliers about the contractual reliability of the buyers. Building upon the Nobel-prize winning work of Oliver Williamson (1975, 1979), the recent trade literature (Nunn, 2007; Levchenko, 2007) documents the importance of the public governance for the buyers-suppliers relationships. These two seminal papers show that quality of public institutions and contract enforcement particularly benefits suppliers-dependent industries with positive ramifications for the exporting performance of the countries.

The above argumentation presents equity market liberalizations as an instrument to reassure the upstream firms about the ability and willingness of their downstream corporate customers to honour the agreed contractual commitments. This yields a clear and testable

empirical implication: Equity market liberalizations should disproportionately benefit those firms that particularly depend on the full trust of their suppliers. I examine this hypothesis using the methodology of Rajan and Zingales (1998) in the context of equity liberalizations. In particular, I interact equity liberalization dummy with a proxy measuring the importance of smooth and trusting relationships with the suppliers for given industry. The proxy comes from Nunn (2007) and is based on the classification by Rauch (1999). It measures for every industry the proportion of intermediate inputs that neither can be sold on organized exchange nor are reference-priced in trade publications. In the absence of an organized exchange or a reference price, the supplier would find it difficult to sell the product at the original price if the initial buyer turned out to be unable or unwilling to pay. Consequently, a forward-looking supplier would be particularly reluctant to produce such an intermediate good unless she is reassured about the financial stability and contractual reliability of the buyer. A lack of required inputs would naturally disturb the production process of the downstream firms. The share of inputs without organized exchange or reference price thus captures how dependent is the production of the firms in a given industry on the full trust of the suppliers.

Both panel data estimation and event studies approach confirm that equity liberalizations disproportionately promote industries that depend on the suppliers' trust. This effect seems even to dominate the traditional mechanism about financial liberalization promoting industries dependent on external investors. Following Gupta and Yuan (2009) and Levchenko et al. (2009), I also interact the dummy of equity liberalization with the dependence of given industry on external finance. These authors find a positive and significant effect of this interaction on economic growth, affirming the disproportionate impact of equity liberalizations on industries requiring a lot of external finance. My estimations confirm their result.

However, when both interactions enter the regressions, it is mostly only the term capturing the beneficial effect of equity liberalization on suppliers-dependent industries that remains significant.

These results establish a novel channel from financial globalization to the real economy. The influential scholarly work on equity liberalizations already established a strong empirical case for the overall beneficial effect of cross-border equity flows on private investment (Henry, 2000a) and economic growth (Bekaert et al., 2005) in the recipient countries. The search for the economic mechanism behind this result has looked into the interactions between productive firms and external financial investors. Gupta and Yuan (2009) and Levchenko et al. (2009) show that equity liberalizations are particularly beneficial for those firms that require a lot of external finance for their operations. Their result complements the previous scholarly work establishing that equity market liberalizations decrease the costs of equity capital for the firms (Henry, 2000b; Bekaert and Harvey, 2000). This investor-firm perspective is in line with the whole finance-growth literature, emphasizing the interactions between agents and institutions of the financial sector (individual investors, financial intermediaries, capital markets) on the one side and subjects from the real economy (firms, households) on the other side. This paper looks beyond the traditional focus on the investors-firms interactions. It shows that equity market liberalizations can promote economic growth also by strengthening the relationships among the agents in the real economy, in particular between the upstream and downstream firms.

The rest of the paper is structured as follows. The next section explains the empirical strategy using both panel data estimations and the event study approach. Section 3 describes the data. Section 4 reports the empirical results. Section 5 concludes and provides directions

for further research.

2 Methodology

2.1 Panel Data Specifications

In order to identify the differential impact of equity market liberalizations across industries, I interact a liberalization dummy (EL_{ct}) with variables capturing the technological dependence of given industry on suppliers (S_i) and external investors (I_i). I examine these two channels first separately, but ultimately allow both interaction terms to enter simultaneously the following specification:

$$G_{ict} = \alpha + \beta_0 EL_{ct} + \beta_1 EL_{ct} * S_i + \beta_2 EL_{ct} * I_i + \gamma Share_{ict} + \delta_{ic} + \mu_t + \varepsilon_{ict}, \quad (1)$$

where the dependent variable is economic growth in industry i , country c , and year t . Coefficient β_0 captures the direct effect of equity market liberalizations on economic growth. The specification also includes initial share of industry i in overall output of country c at the beginning of year t . This variable ($Share_{ict}$) controls for the fact that more mature industries usually exhibit lower growth rates. Full sets of industry-country (δ_{ic}) and time (μ_t) fixed effects control for a wide range of omitted variables. Industry-country dummies (δ_{ic}) also absorb the direct effects of industry characteristics S_i and I_i .

The main variable of interest is $EL_{ct} * S_i$. It captures the main contribution of this paper based on the following line of argument. Equity liberalizations provide additional funding from abroad, increasing the financial stability of domestic firms. Foreign investors

also press for improvements in public and corporate governance, decreasing the probability of deliberate breach of contract. Lower probability of financial problems and opportunistic behaviour on the part of buyers makes suppliers more willing to provide the requested intermediate products. Consequently, equity liberalizations benefit especially those industries that heavily depend on trust of their suppliers. This is the main hypothesis of the paper and a positive coefficient β_1 would confirm it. Similarly, a positive coefficient β_2 would mean that equity liberalizations disproportionately promote growth of industries dependent on external investors. Gupta and Yuan (2009) already provided empirical support for this traditional channel in a similar specification.

In Equation (1), country characteristics that change over time could bias the coefficients of included variables. One way to address this issue would be to include the “usual suspects” into the regression. In this regard, Gupta and Yuan (2009) control for openness to trade, GDP per capita, human capital, and domestic financial development. However, some less obvious country-specific factors might still shape the complex relationship between equity liberalizations and economic growth. This argument applies especially in the context of this paper. In particular, Equation (1) tests a novel hypothesis ($EL_{ct} * S_i$), while at the same time controlling for a quite different channel from the existing literature ($EL_{ct} * I_i$). For this reason, I also estimate the following specification:

$$G_{ict} = \alpha + \beta_1 EL_{ct} * S_i + \beta_2 EL_{ct} * I_i + \gamma Share_{ict} + \delta_{ic} + \eta_{ct} + \varepsilon_{ict}, \quad (2)$$

where a full set of country-time fixed effects (η_{ct}) replaces time dummies from equation (1). This stringent specification thus controls for all possible time-varying country characteristics

that could in more or less obvious ways affect economic growth. The direct effect of equity liberalizations (EL_{ct}) is also captured by η_{ct} .

2.2 Event-Study Approach

Event-study approach offers another way to account for various factors that might obfuscate transmission channels from equity liberalizations to economic growth. This methodology has gained broad popularity in the empirical trade literature, going back to the seminal paper by Trefler (2004). For instance, Manova (2008) uses event-study approach to examine impact of equity liberalizations on international trade flows. The main idea consists in first-differencing Equation (1):

$$\Delta G_{ict} = G_{ic1} - G_{ic0} = \beta_0 \Delta EL_{ct} + \beta_1 \Delta EL_{ct} * S_i + \beta_2 \Delta EL_{ct} * I_i + \gamma \Delta Share_{ict} + \mu_T + \Delta \varepsilon_{ict}, \quad (3)$$

where $t = 0$ ($t = 1$) refers to the time before (after) equity liberalization takes place. In particular, G_{ic0} (G_{ic1}) corresponds to average growth in three years before (after) the liberalization event. Consequently, a positive value of ΔG_{ict} would document an acceleration in economic growth due to such event. First-differencing also removes country-industry fixed effects (δ_{ic}) from the regression, providing a cleaner estimate of a causal impact of equity liberalizations (Manova 2008, p. 41). The stringent event-study specification places high requirements on data to reveal any significant impact of liberalization events. The number of data points available for identification is much lower than in standard panel data estimation, as Equation (3) uses only one observation for every country-industry pair. The specification also controls for the year in which the liberalization event took place (μ_T).

Finally, the dummy character of the liberalization variable (EL_{ct}) implies $\Delta EL_{ct} = EL_{c1} - EL_{c0} = 1$. Equation (3) thus simplifies to:

$$\Delta G_{ict} = \beta_0 + \beta_1 S_i + \beta_2 I_i + \gamma \Delta Share_{ict} + \mu_T + \Delta \varepsilon_{ict}, \quad (4)$$

with EL_{ct} not directly entering the specification. Nevertheless, the economic interpretation of main coefficients remains unchanged. Positive estimated coefficients β_1 and β_2 would still imply a disproportionately beneficial impact of equity liberalizations on industries highly dependent on suppliers (S_i) and external investors (I_i), respectively. Coefficient on the constant term, β_0 , captures the direct effect of EL_{ct} .

3 Data

The industrial output data for economic growth (G_{ict}) and initial industry share ($Share_{ict}$) come from the Trade, Production, and Protection Database by Nicita and Olarreaga (2007), based on the 3-digit ISIC Revision 2 classification. The ultimate source of production data in this database is the United Nations Industrial Development Organization (UNIDO). I transform data from current U.S. dollars into constant international dollars using GDP deflator from Penn World Table (Heston, Summers, and Aten, 2002).

An important issue in the outlined identification strategy is to find suitable proxies for industrial characteristics (S_i) and (I_i). This paper utilizes the notion of relationship-specific investment to capture the importance of suppliers' trust for given industry (S_i). A supplier often needs to make investments in order to customize intermediate products for specific

needs of a particular buyer. After such specific investment is sunk, the buyer can refuse to pay the agreed price and try to renegotiate. Furthermore, even if the buyer would be willing to pay for a product at the agreed price, she might be not able to do so due to liquidity or solvency problems. A supplier of standardized products can easily find another buyer if the original customer is either not able or not willing to honour her commitment. A supplier of relationship-specific products would be in a much worse position. She already adjusted the product for the needs of one specific purchaser and would thus not be able to achieve the original price with a different customer. Consequently, forward-looking sellers suspecting opportunistic behavior or financial instability on the part of their business partners would refuse to execute the required product adjustments in the first place, hurting the downstream firms with negative ramifications for aggregate growth.

The most prominent measure of relationship-specific investment was arguably introduced by Nunn (2007), following the classification of Rauch (1999). In particular, Nunn (2007) computes for every industry the proportion of intermediate inputs that cannot be sold on an organized exchange, nor are they reference-priced in trade publications. The non-existence of an organized exchange or reference price suggests some non-standard features and necessity of buyer-specific adjustments to the product. Product specificity combined with the absence of organized exchange or reference price in turn implies that the supplier would struggle to secure the original price if the initial buyer were unable or unwilling to pay. Consequently, only sellers convinced about financial stability and contractual reliability of their business partners would consent to engage in production of these intermediate products.

The chosen measure thus conceptually captures the importance of suppliers' trust for given industry (S_i). Moreover, existing empirical literature confirms the proxy's relevance

in the context of the two channels from equity liberalizations to economic growth examined in this paper. Nunn (2007) documents the importance of contract reliability for industries using a high share of inputs that are not reference-priced and cannot be obtained on an organized exchange. Strieborny and Kukušková (2011) provide evidence for the financial stability channel. The original measure in Nunn (2007) is reported in the US input-output classification. The direct source of data for (S_i) in this paper is Nunn's website, recomputing the measure for the 3-digit ISIC Revision 2 classification which corresponds to our production data from UNIDO. Existing literature has already used this version of Nunn's measure (e.g., Levchenko 2008).

Finding an variable appropriately capturing the importance of external investors in given industry is a more straightforward task. The standard measure in this context is the external finance dependence introduced by Rajan and Zingales (1998). It is defined as capital expenditure minus cash flow divided by capital expenditure. The original variable from Rajan and Zingales (1998) is calculated for a mix of three-digit and four-digit ISIC industries. The source of data for (I_i) in this paper is Laeven et al. (2002) who follow the 3-digit ISIC Revision 2 classification.

The years when equity liberalizations took place in different countries come from Bekaert et al. (2005). Conceptually, an equity liberalization event refers to the year when a given country opens up to foreign equity flows. Bekaert et al. (2005) use two indicator variables. Official equity market liberalization corresponds to the date of a formal legal change allowing foreign investors to acquire domestic equities. First sign equity market liberalization is the earliest of the following three dates: official liberalization, first American Depository Receipt (ADR; a security allowing the shares of the non-US companies to be traded in the US financial

markets), or a launch of the first country fund (a fund with portfolio containing only stocks of given country). Both official and first sign indicator variables take value one in the year of liberalization and thereafter, and zero otherwise. For all specifications, I check for the robustness by alternatively using both indicator variables as measure of equity liberalizations (EL_{ct}).

The paper combines data from all above sources, but drops the observations from the United States, as the industry characteristics (S_i) and (I_i) are computed from the US data. This ensures the exogeneity of those characteristics, closely following the methodological approach in the original work of Rajan and Zingales (1998). The resulting sample includes data for 28 manufacturing industries in 68 countries for the period between 1980 and 1997.

Appendices A1 and A2 report the lists of developed and developing countries, respectively.¹ If equity liberalization occurred between 1980 and 1997, the name of country is in bold. The other countries remained either closed or open to foreign equity capital during the whole sample period.

4 Empirical Results

Table 1 reports the regression results from the full panel of 68 countries. In the first column, I test for the main hypothesis of the paper. The positive and significant estimated coefficient for the interaction term $EL_{ct} * S_i$ confirms that equity liberalizations benefit especially industries dependent on trust of their suppliers. The initial industry share ($Share_{ict}$) has the expected negative sign. Industries usually exhibit slower growth rates if their production

¹Developed countries are the OECD members, excluding transition and emerging economies.

already accounts for a high share in the country's overall output. The negative direct effect of EL_{ct} is somewhat surprising, but following tables related to more stringent specifications will address this issue.

The second column of the Table 1 tests for the traditional channel of equity liberalizations disproportionately helping the industries dependent on external investors. The coefficient on the corresponding interaction term $EL_{ct} * I_i$ is indeed positive and significant. The third column reports the estimation results for specification (1). Both interaction terms enter the regression with positive signs, but only the one capturing the suppliers' importance ($EL_{ct} * S_i$) is significant. The first three columns use official liberalization dates to construct the indicator variable EL_{ct} . The last three columns mirror the specifications from columns (1) to (3), but use the dates of first liberalization sign instead. The results are qualitatively the same.

[Table 1 about here]

Table 2 reports the results of the more stringent specification (2). Country-time fixed effects (η_{ct}) now capture all observable and unobservable country characteristics that change over time. Thus, they also absorb the direct effect of equity liberalizations (EL_{ct}). The first three columns report the results based on the official dates of equity liberalizations. Column (1) presents the regression result from the full sample of countries. Columns (2) and (3) rely on subsamples of developing and developed countries, respectively. Broadly speaking, developed countries are non-transition and non-emerging economies among the OECD members. Appendices A1 and A2 provide the details. Columns (4) to (6) repeat the

estimations from the first three columns, while using the dates of first liberalization signs to construct liberalization dummy (EL_{ct}).

Overall, Table 2 confirms the patterns from the previous table. Equity liberalizations disproportionately benefit industries heavily dependent either on their suppliers or external investors, as captured by positive estimated coefficients for $EL_{ct} * S_i$ and $EL_{ct} * I_i$, respectively. In five out of six cases, the effect is significant for the suppliers-dependent sectors, but not for the investor-dependent ones. This pattern reverses only in the last column, reporting the effect of first liberalization signs in the sample of developed countries.

[Table 2 about here]

The results in Tables 1 and 2 might be partially driven by some underlying differences between countries that remain open or closed to foreign equity flows during the whole sample period. I therefore restrict the sample in Tables 3 and 4 to countries that actually did experience equity liberalizations between 1980 and 1997. The focus on these “liberalizers” does not fully remove the cross-sectional variation, as countries open themselves to foreign equity flows at different times. Nevertheless, the identification comes in this case mostly from the within-country variation over time. One could thus view results from Tables 3 and 4 as an intermediate step between the full panel and the event-study analysis (Manova 2008, p. 40).

Table 3 re-estimates the specifications from Table 1 using the restricted sample of liberalizing countries. The results remain qualitatively the same. Equity liberalizations still seem to benefit particularly industries dependent on the trust of their suppliers ($EL_{ct} * S_i$).

The positive impact of equity liberalizations on industries relying on external investors is stronger in the group of liberalizing countries (Table 3) than in the whole sample (Table 1). The clearly significant positive estimated coefficient on the interaction term $EL_{ct} * I_i$, both in second and fifth column of the Table 3, is now more in accordance with the results reported in Gupta and Yuan (2009). This is not surprising, as their sample consists mostly of the liberalizers. In particular, 27 out of 31 countries examined in Gupta and Yuan (2009) liberalized equity flows during their sample period. Nevertheless, once both interaction terms are allowed to enter regressions in columns (3) and (6), only the variable capturing the suppliers' importance ($EL_{ct} * S_i$) maintains significance. Focusing on liberalizing countries also provides more intuitive results for the overall effect of equity liberalizations. The direct effect of EL_{ct} is less negative than in Table 1. Importantly, the overall liberalization effect is positive.²

[Table 3 about here]

Table 4 verifies the estimations of the stringent specification (2) in the sample of liberalizing countries. The results broadly confirm the patterns found in Table 2. The single qualitative deviation relates to subsample of liberalizing developed countries in columns (3) and (6). Contrary to Table 2, none of the two interaction terms is significant. However, the specification might simply ask too much from data in this case. Appendix A1 shows that only few developed countries implemented equity liberalizations between 1980 and 1997. Most of them were open to foreign equity flows during the whole sample period.

²The overall effect of equity liberalizations can be computed from the estimated coefficients for variables containing the liberalization dummy and from mean values of industry characteristics. For example, the overall liberalization effect in column (3) of Table 3 is captured by $\widehat{\beta}_0 + \widehat{\beta}_1 \overline{S_i} + \widehat{\beta}_2 \overline{I_i} = -0.043 + 0.099 * 0.487 + 0.019 * 0.269 = 0.010324$

[Table 4 about here]

Finally, Table 5 reports the results from estimating Equation (4). This event-study approach places arguably the highest data requirements on the search for a possible impact of equity liberalizations. Columns (1) and (4) use data from all liberalizing countries, while columns (2) and (5) rely on subsample of developing countries. In these four specifications, the main variable of interest (S_i) is positive and significant. The direct effect of equity liberalizations (ΔEL_{ct}) is either positive or insignificant and the overall liberalization effect is clearly beneficial for the output growth. Positive impact of equity liberalizations on suppliers-dependent industries seems to disappear when applying the event-study approach in case of developed countries (columns three and six). Similarly to Table 4, this result might reflect the small number of liberalizers among the developed countries rather than a smaller impact of foreign equity flows at higher stages of economic development.

[Table 5 about here]

5 Conclusions and Further Research

Equity market liberalizations allow foreign investors to acquire shares in the domestic firms. Existing literature has therefore naturally focused on the impact of these events on the relationship between firms and investors. In particular, there is by now a well-established case for equity market liberalizations disproportionately helping those domestic firms and industries that are highly dependent on the financing by external investors.

This paper stresses the effect of cross-border equity flows on firms' relationships with another crucial stakeholder - the suppliers. Firstly, a buyer backed by foreign capital means a smaller probability of contract failure due to default or some liquidity problems. Secondly, liberalization-driven advances in the quality of public and corporate governance decrease the risk of a deliberate breach of contract.

Cross-border equity flows can thus reassure upstream firms with respect to the financial stability and contractual reliability of their corporate customers. Consequently, equity market liberalizations should particularly promote those industries where the firms strongly depend on the full trust of their suppliers. Results from panel data and event-study approach confirm this hypothesis, establishing a novel transmission channel from financial globalization to the real economy. International equity flows seem to play an important role in the interactions among agents in the real economy, rather than affecting the real economy exclusively via improved firms-investors relationships.

In future work, it would be interesting to explore the relative importance of the two channels from equity market liberalizations to growth of suppliers-dependent industries: increased financial stability of the downstream firms versus improved corporate and public governance implying a better contractual reliability of those firms. Here the main challenge will be in controlling for different feedbacks and interactions between the two channels. For one thing, improved corporate governance also makes firms more resilient to financial distress (Johnson et al., 2000; Mitton, 2002). For another thing, the presence of active foreign investors increases the demand for information services such as auditing or financial analysis in the economy (Morck et al., 2005, p. 709). The work of specialized agents like auditors and financial analysts not only increases the pressure towards better governance and thus

contractual reliability, but it also allows the upstream firms to better evaluate the financial stability of their potential customers.

There is also the question whether majority versus minority foreign ownership plays a significant role. Arguably, a buyer that is an integral part of a multinational corporation would be in an even better position to reassure suppliers, compared to a downstream firm with a "merely" minority foreign ownership. As existing research has established decades ago, multinational corporations face a lower average probability of insolvency, even when compared to domestic corporations in the developed countries (Shaked, 1986). In the sense that equity market liberalizations are often associated with foreign portfolio investment (i.e., acquiring of minority stakes by foreign investors), the results in this paper might constitute only a lower bound for the importance of foreign capital in the buyers-suppliers relationships within domestic economy. The topic thus certainly merits further investigations and augurs an interesting research agenda for the future.

References

- [1] Alfaro, Laura, and Maggie Xiaoyang Chen, 2012, "Surviving the Global Financial Crisis: Foreign Ownership and Establishment Performance," *American Economic Journal: Economic Policy* 4(3), pp. 30-55.
- [2] Bekaert, Geert, and Campbell R. Harvey, 2000, "Foreign Speculators and Emerging Equity Markets," *Journal of Finance* 55(2), pp. 565-613.

- [3] Bekaert, Geert, Campbell R. Harvey, and Christian Lundblad, 2005, "Does Financial Liberalization Spur Growth?" *Journal of Financial Economics* 77, pp. 3-35.
- [4] Desai, Mihir A., C. Fritz Foley, and Kristin J. Forbes, 2008, "Financial Constraints and Growth: Multinational and Local Firm Responses to Currency Depreciations," *Review of Financial Studies* 21(6), pp. 2857-2888 .
- [5] Doidge, Craig, G. Andrew Karolyi and René M. Stulz, 2007, "Why Do Countries Matter So Much for Corporate Governance?" *Journal of Financial Economics* 86, pp. 1-39.
- [6] Gupta, Nandini, and Kathy Yuan, 2009, "On the Growth Effect of Stock Market Liberalizations," *Review of Financial Studies* 22(11), pp. 4715-4752.
- [7] Heston, Alan, Robert Summers, and Bettina Aten, 2002, "*Penn World Table Version 6.1*," Center for International Comparisons at the University of Pennsylvania (CICUP).
- [8] Henry, Peter Blair, 2000a, "Do Stock Market Liberalizations Cause Investment Booms?" *Journal of Financial Economics* 58, pp. 301-334.
- [9] Henry, Peter Blair, 2000b, "Stock Market Liberalization, Economic Reform, and Emerging Market Equity Prices," *Journal of Finance* 55(2), pp. 529-564.
- [10] Johnson, Simon, Peter Boone, Alasdair Breach, and Eric Friedman, 2000, "Corporate Governance in the Asian Financial Crisis," *Journal of Financial Economics* 58, pp. 141-86.

- [11] Kolasa, Marcin, Michal Rubaszek, and Daria Taglioni, 2010, "Firms in the Great Global Recession: The Role of Foreign Ownership and Financial Dependence," *Emerging Markets Review* 11, pp. 341-357.
- [12] Levchenko, Andrei, Romain Ranciere, and Mathias Thoenig, 2009, "Growth and Risk at the Industry Level: The Real Effects of Financial Liberalization," *Journal of Development Economics* 89(2), pp. 210-222.
- [13] Levchenko, Andrei, 2007, "Institutional Quality and International Trade," *Review of Economic Studies* 74(3), pp. 791-819.
- [14] Levchenko, Andrei, 2008, "International Trade and Institutional Change," *mimeo*, University of Michigan.
- [15] Manova, Kalina, 2008, "Credit Constraints, Equity Market Liberalizations and International Trade," *Journal of International Economics* 76, pp. 33-47.
- [16] Mitton, Todd, 2002, "A Cross-Firm Analysis of the Impact of Corporate Governance on the East Asian Financial Crisis," *Journal of Financial Economics* 64, pp. 215-41.
- [17] Morck, Randall, Daniel Wolfenzon, and Bernard Yeung, 2005, "Corporate Governance, Economic Entrenchment, and Growth," *Journal of Economic Literature* 43, pp. 655-720.
- [18] Nicita, Alessandro, and Marcelo Olarreaga, 2007, "Trade, Production, and Protection Database, 1976-2004," *World Bank Economic Review* 21 (1), pp. 165-171.
- [19] Nunn, Nathan, 2007, "Relationship-Specificity, Incomplete Contracts, and the Pattern of Trade," *Quarterly Journal of Economics* 122(2), pp. 569-600.

- [20] Rajan, Raghuram G., and Luigi Zingales, 1998, "Financial Dependence and Growth," *American Economic Review* 88(3), pp. 559-86.
- [21] Rauch, James E., 1999, "Networks Versus Markets in International Trade," *Journal of International Economics* 48(1), pp. 7-35.
- [22] Shaked, Israel, 1986, "Are Multinational Corporations Safer?" *Journal of International Business Studies* 17(1), pp. 83-106.
- [23] Strieborny, Martin, and Madina Kukenova, 2011, "Investment In Relationship-Specific Assets: Does Finance Matter?" CESifo Working Paper No. 3349.
- [24] Stulz, René M., 2005, "The Limits of Financial Globalization," *Journal of Finance* 60(4), pp. 1595-1636.
- [25] Trefler, Daniel, 2004, "The Long and Short of the Canada-U.S. Free Trade Agreement," *American Economic Review* 94(4), pp. 870-95.
- [26] Williamson, Oliver E., 1975, "*Markets and Hierarchies*," (New York: Free Press).
- [27] Williamson, Oliver E., 1979, "Transaction Cost Economics: The Governance of Contractual Relations," *Journal of Law and Economics* 22, pp. 233-261.

Appendix A1: Developed Countries

The subsample includes non-transition and non-emerging members of the OECD. Countries in bold implemented equity liberalizations during the sample period 1980-1997. Japan (in italics) experienced official liberalization in 1983, but issued the first ADR prior to the sample period.

Australia, Austria, Canada, Denmark, Finland, France, Germany, **Greece**, **Iceland**, Ireland, Italy, *Japan*, Netherlands, **New Zealand**, Norway, **Portugal**, **Spain**, Sweden, Switzerland, United Kingdom

Appendix A2: Developing and Emerging Countries

Countries in bold implemented equity liberalizations during the sample period 1980-1997.

Algeria, **Argentina**, **Bangladesh**, Benin, **Botswana**, **Brazil**, Cameroon, **Chile**, **Colombia**, Costa Rica, **Cote d'Ivoire**, **Ecuador**, **Egypt**, El Salvador, Gabon, **Ghana**, Guatemala, Honduras, **India**, **Indonesia**, Iran, **Israel**, **Jordan**, **Kenya**, **Korea (Republic of)**, Kuwait, Malawi, **Malaysia**, **Malta**, **Mauritius**, **Mexico**, **Morocco**, Nepal, **Nigeria**, **Oman**, **Pakistan**, **Peru**, **Philippines**, Senegal, Singapore, **South Africa**, **Sri Lanka**, **Thailand**, **Trinidad and Tobago**, **Tunisia**, **Turkey**, Uruguay, **Venezuela**

Table 1: Full Panel - Baseline Specification

The dependent variable is output growth in industry i , country c , and year t . All regressions are estimated by the OLS and include industry-country and time fixed effects. Coefficient for the constant term is not reported. EL_{ct} is indicator variable equal to one if country was in a given year open to foreign equity flows and zero otherwise. S_i and I_i measure for each industry the importance of suppliers and external investors, respectively. $Share_{ict}$ is the share of industry i in overall output of country c at the beginning of year t . The first three columns use the official dates of equity liberalizations and the last three columns use the dates of the first liberalization sign. Robust standard errors clustered at the country level are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Official Liberalization			First Sign of Liberalization		
Equity Liberalization (EL_{ct})	-0.074*** (0.021)	-0.036** (0.017)	-0.073*** (0.021)	-0.064*** (0.020)	-0.026 (0.016)	-0.064*** (0.020)
Equity Liberalization x Suppliers ($EL_{ct} * S_i$)	0.092*** (0.030)		0.084*** (0.026)	0.093*** (0.032)		0.086*** (0.030)
Equity Liberalization x Investors ($EL_{ct} * I_i$)		0.030* (0.017)	0.014 (0.016)		0.029 (0.018)	0.012 (0.017)
Industry Share ($Share_{ict}$)	-1.650** (0.799)	-1.632** (0.795)	-1.655** (0.802)	-1.647** (0.797)	-1.631** (0.794)	-1.650** (0.799)
Observations	23,062	23,062	23,062	23,062	23,062	23,062
R-squared	0.081	0.080	0.081	0.080	0.080	0.080

Table 2: Full Panel - Stringent Specification

The dependent variable is output growth in industry i , country c , and year t . All regressions are estimated by the OLS and include industry-country and country-time fixed effects. Coefficient for the constant term is not reported. The independent variables are defined in Table 1. Columns 1 and 4 report results for the full sample. Columns 2 and 5 report results for the subsample of developing countries. Columns 3 and 6 report results for the subsample of developed countries. The first three columns use the official dates of equity liberalizations and the last three columns use the dates of the first liberalization sign. Robust standard errors clustered at the country level are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Official Liberalization			First Sign of Liberalization		
Equity Liberalization x Suppliers ($EL_{ct} * S_i$)	0.103*** (0.026)	0.100*** (0.029)	0.104* (0.059)	0.108*** (0.032)	0.103*** (0.036)	0.115 (0.067)
Equity Liberalization x Investors ($EL_{ct} * I_i$)	0.023 (0.016)	0.024 (0.020)	0.025 (0.017)	0.021 (0.017)	0.020 (0.021)	0.032* (0.017)
Industry Share ($Share_{ict}$)	-2.730*** (0.460)	-2.865*** (0.522)	-1.689*** (0.518)	-2.724*** (0.458)	-2.857*** (0.521)	-1.692*** (0.508)
Observations	23,062	15,327	7,735	23,062	15,327	7,735
R-squared	0.323	0.325	0.267	0.323	0.325	0.267

Table 3: Liberalizers - Baseline Specification

The dependent variable is output growth in industry i , country c , and year t . Only countries where equity liberalizations occurred during the sample period are included. All regressions are estimated by the OLS and include industry-country and time fixed effects. Coefficient for the constant term is not reported. The independent variables are defined in Table 1. The first three columns use the official dates of equity liberalizations and the last three columns use the dates of the first liberalization sign. Robust standard errors clustered at the country level are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Official Liberalization			First Sign of Liberalization		
Equity Liberalization (EL_{ct})	-0.044**	0.001	-0.043**	-0.038*	0.007	-0.037*
	(0.020)	(0.017)	(0.020)	(0.020)	(0.017)	(0.019)
Equity Liberalization x Suppliers ($EL_{ct} * S_i$)	0.110***		0.099***	0.111***		0.101***
	(0.028)		(0.025)	(0.031)		(0.030)
Equity Liberalization x Investors ($EL_{ct} * I_i$)		0.038**	0.019		0.036**	0.017
		(0.017)	(0.016)		(0.018)	(0.017)
Industry Share ($Share_{ict}$)	-2.324***	-2.290***	-2.333***	-2.312***	-2.282***	-2.319***
	(0.600)	(0.595)	(0.603)	(0.600)	(0.596)	(0.602)
Observations	13,806	13,806	13,806	13,335	13,335	13,335
R-squared	0.102	0.101	0.102	0.101	0.101	0.101

Table 4: Liberalizers - Stringent Specification

The dependent variable is output growth in industry i , country c , and year t . Only countries where equity liberalizations occurred during the sample period are included. All regressions are estimated by the OLS and include industry-country and country-time fixed effects. Coefficient for the constant term is not reported. The independent variables are defined in Table 1. Columns 1 and 4 report results for the full sample of the liberalizers. Columns 2 and 5 report results for the subsample of developing countries. Columns 3 and 6 report results for the subsample of developed countries. The first three columns use the official dates of equity liberalizations and the last three columns use the dates of the first liberalization sign. Robust standard errors clustered at the country level are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Official Liberalization			First Sign of Liberalization		
Equity Liberalization x Suppliers ($EL_{ct} * S_i$)	0.102*** (0.027)	0.099*** (0.029)	0.095 (0.062)	0.107*** (0.033)	0.103*** (0.036)	0.102 (0.073)
Equity Liberalization x Investors ($EL_{ct} * I_i$)	0.023 (0.017)	0.023 (0.020)	0.025 (0.019)	0.021 (0.018)	0.020 (0.021)	0.033 (0.018)
Industry Share ($Share_{ict}$)	-2.712*** (0.592)	-2.848*** (0.646)	-1.237 (0.763)	-2.705*** (0.592)	-2.837*** (0.643)	-1.171 (0.773)
Observations	13,806	11,302	2,504	13,335	11,302	2,033
R-squared	0.244	0.241	0.291	0.244	0.241	0.287

Table 5: Event Studies

The dependent variable is output growth acceleration in industry i and country c , following the event of equity liberalization. Only countries where equity liberalizations occurred during the sample period are included. All regressions are estimated by the OLS and control for the year when liberalization event occurred. The independent variables are defined in Table 1. Columns 1 and 4 report results for the full sample of the liberalizers. Columns 2 and 5 report results for the subsample of developing countries. Columns 3 and 6 report results for the subsample of developed countries. The first three columns use the official dates of equity liberalizations and the last three columns use the dates of the first liberalization sign. Robust standard errors clustered at the country level are in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
	Official Liberalization			First Sign of Liberalization		
Constant (ΔEL_{ct})	0.026 (0.016)	0.038** (0.017)	-0.077* (0.029)	-0.025 (0.017)	0.019 (0.020)	-0.078 (0.035)
Suppliers (S_i)	0.098*** (0.034)	0.096** (0.040)	0.111 (0.064)	0.106** (0.039)	0.105** (0.046)	0.107 (0.079)
Investors (I_i)	0.024 (0.021)	0.026 (0.027)	0.018 (0.016)	0.009 (0.021)	0.003 (0.026)	0.033 (0.015)
Diff. Industry Share ($\Delta Share_{ict}$)	-2.881*** (0.732)	-2.853*** (0.773)	-3.422*** (0.538)	-3.010*** (0.786)	-2.991*** (0.837)	-3.257*** (0.525)
Observations	576	455	121	542	437	105
R-squared	0.181	0.180	0.197	0.180	0.194	0.175