On the Growth Effect of Stock Market Liberalizations

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Abstract

We investigate the effect of a stock market liberalization on industry growth in emerging markets. Consistent with the view that liberalization reduces financing constraints, we find that industries that are more externally dependent and face better growth opportunities grow faster following liberalization. However, this growth increase appears to come from an expansion in the size of existing firms rather than through the entry of financially constrained new firms. We show that following liberalization new firm growth occurs in countries and industries with lower entry barriers. Hence, liberalization has a more uniform growth impact if accompanied by competition-enhancing reforms.

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Many developing countries have reduced restrictions on foreign investment in domestic equity securities and on local investment abroad. A growing literature at the country level shows that such stock market liberalizations promote economic growth, particularly in countries with more developed financial markets and higher quality institutions (Bekaert, Harvey, and Lundblad (2005)). However, their overall impact and desirability continues to be intensely debated (see Edison, Klein, Ricci, and Sloek (2002) for a recent survey).[1] To address this important question we go beyond country-level analyses and use industry-specific data to investigate the disaggregated impact of liberalization.

We investigate whether the cross-sectional impact of a stock market liberalization across industries is consistent with the view that liberalization promotes economic growth by lowering the cost of external capital (Bekaert and Harvey (2000); Henry (2000a), (2000b)), and by improving the alignment between capital and growth opportunities at the country level (Fisman and Love (2004); Bekaert, Harvey, Lundblad, and Siegel (2007)). Using Rajan and Zingales' (1998) measure of external finance dependence, we find that industries that are technologically more dependent on external finance for their investment needs grow significantly faster following liberalization. And, using lagged values of the global price earnings ratio for each industry to capture growth opportunities (Bekaert, Harvey, Lundblad, and Siegel (2007)), we find that industries that face better growth opportunities experience significantly higher value added growth following liberalization. Hence, the industry level results support the view that liberalization leads to higher growth by reducing financing constraints.

However, the impact of liberalization within industries reveals a puzzle. The increase in value added growth following a stock market liberalization appears to come from an expansion in the size of existing firms rather than through the entry of new firms at the industry level. This observation holds even for industries that are more dependent on external financing and that face greater growth opportunities. Since new firms are likely

to be more financially constrained, this seems to contradict the finding that liberalization facilitates growth by reducing financing constraints. To reconcile these conflicting results we hypothesize that the differential impact of liberalization on new versus existing firms may be due to institutional and regulatory barriers to entry at the country and industry level.

Investigating barriers to entry at the country level first, we hypothesize that new firms may face higher entry barriers in countries that allocate capital less efficiently because of frictions arising out of institutional quality and regulatory barriers. Using a measure of capital allocative efficiency based on Wurgler (2000), we find that following liberalization more externally dependent industries and industries that face better growth opportunities experience an 8.4% and 0.4% higher growth rate respectively in the number of establishments if they are located in a country that allocates capital more efficiently. These results imply that a stock market liberalization will facilitate new firm growth if it is accompanied by complementary reforms that improve the allocative efficiency of capital. Second, at the industry level, we investigate whether industries that have natural barriers to entry arising out of technological factors such as economies of scale are differently affected by liberalization. Using U.S. industry concentration ratios to capture natural barriers to entry, we find that less concentrated industries, which have lower entry barriers, grow significantly faster following liberalization.

Third, we focus on the reduction of barriers to entry at the industry level by considering the privatization of government-owned firms. Government-owned firms are often successful at using their political connections to obtain protection from competition (Chari and Gupta (2007)). By reducing the presence of government-owned firms, privatization may lower entry barriers for new firms, allowing them to take advantage of lower financing constraints following liberalization. Consistent with this hypothesis, we find that following liberalization, industries that privatize government-owned firms ex-

perience a 15.6% higher growth in the number of establishments compared to industries that do not privatize.

This paper contributes to the debate on the growth effect of stock market liberalizations by demonstrating that the benefits of liberalization are likely to be unequally distributed both across and within industries. We show that the growth impact of a stock market liberalization is likely to be larger and more uniformly distributed across new and existing firms if it is accompanied by complementary reforms that enhance competition and improve the efficiency of capital allocation. In contrast, other studies on the growth effect of stock market liberalizations control for contemporaneous reforms but do not consider complementarities with liberalization (Henry (2000a); Bekaert, Harvey, and Lundblad (2005)).

Our paper is related to the literature on financing constraints in emerging markets. For example, Lins, Strickland, and Zenner (2005) show that the sensitivity of investment to cash flows decreases significantly following an ADR listing by firms from emerging markets, and Beck, Demirgüç-Kunt, Laeven, and Levine (2004) find that industries that are dominated by small firms grow faster in more financially developed markets. Our results suggest that financing constraints in emerging markets have a real impact on growth.

Among studies that examine how financial development can reduce financing constraints, Fisman and Love (2003) show that in countries with weaker financial institutions, industries that depend more on trade credit exhibit higher rates of growth. Laeven (2000) finds that banking sector deregulation relaxes financing constraints more for small firms in emerging markets, and Love (2003) finds that investment is less sensitive to internal funds at the firm level in more financially developed countries. Our results suggest that the reduction in financing constraints following liberalization is likely

to have a larger and more uniform impact across firms if liberalization is accompanied by complementary reforms that reduce entry barriers.

The remainder of the paper is organized as follows. In section 1 we describe the average effect of liberalization across industries. In section 2 we form testable hypotheses. In section 3 we describe the data, section 4 describes the results, and section 5 concludes the paper.

1. The average effect of liberalization on industrial growth

We start out by investigating the aggregate impact of a stock market liberalization on industry growth by estimating the following panel-data specification with industry-country fixed effects:

$$Growth_{i,j,t} = \beta_1 Liberalization_{j,t} + \beta_2 X_{i,j,t-1} + \beta_3 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}, \qquad (1)$$

where the dependent variables are the growth rates of 1) *real value added*, 2) *establishment size*, 3) *number of establishments*, 4) *investment per establishment,* 5) *average market capitalization,* and the level of 6) *(log) investment* in industry i, country j and year t; *Liberalization* is a dummy variable that is equal to one for all years including and after the year of a stock market liberalization; $X_{i,j,t-1}$ represents lagged values of annual industry and country-specific factors that may affect growth; $Year_t$ represents year dummies that capture contemporaneous shocks; and, $\alpha_{i,j}$ represents industry-country fixed effects. Note that *Growth in Real Value Added* $= \text{Log}(ValueAdded_{it}/ValueAdded_{it-1})$, and the other growth rates are similarly constructed. This is a difference in difference

approach with a control group in each year that includes those countries in the sample that have either not yet liberalized or never liberalize their stock markets during the sample period. The error term $\epsilon_{i,j,t}$, which captures unobservable shocks that affect industry performance, is corrected for heteroskedasticity and clustered for each industry and country observation in the fixed effects specifications.

From the results reported in Panel A of Table 1 we note that industry growth in real value added and growth in the average size of establishments increase significantly on average following a stock market liberalization (columns (1) and (3)). The significant increase in the level of investment (column (4)), the growth rates of investment per establishment (column (5)), and average market capitalization (column (6)), suggests that, on average, liberalization reduces the cost of external financing at the industry level. Note that the impact of liberalization on the level of investment is greater than the impact on average size and value added growth. However, liberalization is not followed by an increase in the growth rate of the number of establishments in an industry (column (2)). Hence, the increase in industry growth occurs mainly through an expansion in the size of existing firms rather than through the entry of new firms at the industry level.

In a country level study, Bekaert, Harvey, and Lundblad (2005) document that the effect of a stock market liberalization on GDP growth is between 1 and 2 percent, while the preliminary analysis in Table 1 suggests that the impact of liberalization on manufacturing industry growth is considerably higher (column (1)). To reconcile these findings, we conduct additional analyses that suggest that the size of the liberalization effect varies across industries, although its sign and statistical significance is robust to alternative specifications. In particular, results from a robust regression reported in Table 1B and a median regression reported in Appendix Table 2 suggest that liberalization has a smaller but highly significant impact on growth after controlling for the presence of influential observations.[2] In Table 1C we also report results from a quantile regression

indicating that while the liberalization effect varies in magnitude across different percentiles of value added growth, it is positive and statistically significant for almost the entire distribution from the lowest 1 percentile to the 90^{th} percentile of growth. From a policy perspective, these results suggest that liberalization has a robust positive and significant impact on industry growth that varies in size across industries. This evidence of a heterogeneous liberalization effect further motivates the analysis below where we focus on the cross-sectional impact of liberalization.

In equation (1) we control for industry-country fixed effects, which would address the endogeneity of the liberalization decision to unobservable industry and country factors that do not change over time. To address endogeneity that may arise if the liberalization decision is based on time-varying unobservable factors, we provide instrumental variable estimates in Panel D of Table 1. We use the mean pre-liberalization values of log per capita GDP and the share of international trade in GDP, and the rule of law at the country level as instrumental variables.[3] The first two variables capture initial economic conditions that are likely to influence the likelihood of liberalization, and have been used as an instrument for liberalization reforms by Godoy and Stiglitz (2006), while the rule of law variable has been used as an instrument for financial market development by Claessens and Laeven (2003). Since the instrumental variables are constant we do not include fixed effects in the instrumental variable regression. Appendix Table 3A provides pairwise correlations between the instrumental variables, liberalization, and industry growth, which show that none of the instruments are correlated with growth, while all three are significantly correlated with the probability of liberalization.[4] Overall the instrumental variable results reported in Table 1D are robust to correcting for potential omitted variable bias. The effect of liberalization remains similar with the exception of average market capitalization per firm. Note that results from a Sargan overidentification test reported in Panel D indicates that these instruments are valid and are not correlated

with any of the dependent variables. The first stage results with *Growth in Real Value Added* as the dependent variable are reported in Appendix Table 3B.

The results in Table 1 suggest that there is a significant increase in industry growth following liberalization but this increase occurs mainly through an increase in the size of existing firms rather than through the entry of new firms. Since new firms are likely to face higher financial constraints, the lack of a significant impact of liberalization on new firm growth seems to contradict the view that stock market liberalizations reduce financing constraints. In the remainder of this paper we examine the cross-sectional evidence to gain more insight into the impact of liberalization on industry growth.

2. Hypotheses

In this section we develop hypotheses examining whether the cross-sectional impact of liberalization is consistent with the country level evidence that liberalization reduces financing constraints by lowering the cost of external capital (Bekaert and Harvey (2000); Henry (2000a), (2000b)), and improving the alignment between capital and growth opportunities (Fisman and Love (2004); Bekaert, Harvey, Lundblad, and Siegel (2007)). Our first hypothesis provides a direct test of the argument that a stock market liberalization leads to higher growth by lowering the cost of external capital:

Hypothesis 1 *(External Dependence) If a stock market liberalization lowers the cost of external capital, then industries that depend more on external finance for their investment needs will grow faster following liberalization.*

This industry level hypothesis is motivated by the results in Table 1 indicating that industry investment and market capitalization increase significantly after liberalization,

and evidence at the country level suggesting that liberalization lowers the cost of external capital (Bekaert and Harvey (2000); Henry (2000a), (2000b)). It is based on Rajan and Zingales' (1998) results showing that industries that are more dependent on external finance will grow faster in financially developed countries, which have a lower wedge between the cost of external and internal capital. Therefore, if a stock market liberalization lowers the cost of external capital, then more externally dependent industries should grow faster following liberalization.

Our next hypothesis investigates whether liberalization facilitates industry growth by improving the alignment between capital and growth opportunities, as suggested by country level evidence (Fisman and Love (2004); Bekaert, Harvey, Lundblad, and Siegel (2007)). The following hypothesis describes the industry-specific implication:

Hypothesis 2 *(Growth Opportunity) If a stock market liberalization improves efficiency in capital allocation, then industries with better growth opportunities will grow faster following liberalization.*

The differential impact of liberalization on new versus existing firms described in Table 1 may be due to frictions that raise entry barriers for new firms, such as the quality of institutions and regulatory barriers. To capture this we hypothesize that new firms may face higher entry barriers in countries that allocate capital less efficiently due to the presence of such frictions. Inefficient allocation of capital at the country level may prevent new firms from benefiting from a reduction in the external cost of capital, or an increase in the allocative efficiency of capital following liberalization. The next two hypotheses develop this argument.

Hypothesis 3 *(Allocative Efficiency and External Dependence) Following liberalization, industries that depend more on external finance will experience higher new firm*

growth if they are located in countries that allocate capital more efficiently.

Hypothesis 4 *(Allocative Efficiency and Growth Opportunity) Following liberalization, industries with better growth opportunities will experience higher new firm growth if they are located in countries that allocate capital more efficiently.*

Considering entry barriers to new firms at the industry level, we examine whether the effect of liberalization varies based on barriers arising out of the technological characteristics of the industry. For example, industries that are highly concentrated because of economies of scale are likely to have high entry barriers. This argument leads to our next hypothesis:

Hypothesis 5 *(Concentration) If more concentrated industries have higher barriers to entry they will experience lower growth compared to less concentrated industries following a stock market liberalization.*

Lastly, we consider a reduction of barriers to entry at the industry level by focusing on the privatization of government-owned firms. Government-owned firms are often more successful than other firms at using their political connections to obtain protection from competition through regulatory barriers (Chari and Gupta (2007)). By reducing the presence of government-owned firms, a complementary privatization program may lower entry barriers for new firms, thereby allowing them to benefit from a stock market liberalization.

Hypothesis 6 *(Privatization) If privatized industries have lower barriers to entry, then these industries will grow faster following a stock market liberalization.*

Therefore, the growth impact of liberalization may be larger and more uniformly distributed if it is accompanied by complementary reforms that improve the allocation

of capital and reduce regulatory barriers to entry. In the next section we describe the data and variables used to test these hypotheses.

3. Data

3.1 Data on Industries

Industrial Growth: Our data consists of all emerging markets, based on the International Finance Corporation classification, that liberalized their stock markets after 1980 and for which we observe statistics on industrial growth. Annual data on value added, investment, and the number of establishments at the three-digit ISIC code level (International Standard Industrial Classification of All Economic Activities) for each country are obtained from the *Industrial Statistics Database* compiled by the United Nations Industrial Development Organization (UNIDO), and data on the market capitalization of all publicly listed firms in a country are from the Standard & Poor Emerging Markets Database. For the latter data we match four-digit SIC (Standard Industrial Classification) categories to three-digit ISIC categories and we aggregate market capitalization across firms to obtain market capitalization at the three-digit ISIC industry level.

For each country and each of the 27 three-digit ISIC industrial categories we use annual values of the level of industry investment, and the growth rates of real value added, number of establishments, average establishment size, investment per establishment, and average market capitalization per establishment as the dependent variables. Specifically, *Growth in Real Value Added* $= \text{Log}(\mathit{ValueAdded}_{it}/\mathit{ValueAdded}_{it-1})$, and the other growth rates are similarly constructed. We use the log value of the level of annual investment, where *Investment* is defined as the change in real gross fixed capital formation in an industry. Value added and investment are deflated using the GDP deflator obtained

from the World Bank's World Development Indicators. We also construct the following variables: *Size* is defined as real value added divided by the number of establishments in that industry, *Investment per establishment* is defined as *Investment* divided by the number of establishments in that industry, and *Average Market Capitalization* is defined as the market capitalization of all listed firms in an industry divided by the number of establishments. We observe an unbalanced panel of industrial statistics between 1981 and 1998 for the 31 countries in our sample.[5] In Table 2 we describe the distribution of the industry performance measures for each ISIC industry across the available countries and years.

External Finance Dependence: Data on the actual use of external financing at the country and industry level is typically not available for emerging markets. Moreover, the actual level of external financing undertaken by firms will depend on the characteristics of the financial markets in which they operate. Hence, we use an industry's technological dependence on external finance based on Rajan and Zingales (1998), which we denote *External Dependence*. Based on the argument that there are technological reasons for differences in industries' dependence on external finance, implying that these differences are likely to persist across countries, Rajan and Zingales (1998) construct measures of external finance dependence using data on listed U.S. firms. Since U.S. capital markets are relatively frictionless, this variable should capture differences in the technological demand for external financing among industries. Thus, the use of external funds by U.S. firms in an industry serves as a proxy for the amount foreign firms in the same industry would raise if their financial markets were as developed as the United States. The external finance dependence measure is constructed as the median value of the difference between capital expenditures and cash flow from operations, divided by capital expenditures for U.S. manufacturing firms over 1980-1989. Using Compustat data we construct this measure for three-digit ISIC sectors.

Growth Opportunity: We use the one year lagged value of the annual global price to earnings ratio (*Global PE Ratio*) from Bekaert, Harvey, Lundblad, and Siegel (2007) to capture growth opportunities at the industry level. This is a forward-looking measure that captures investors' expectations about an industry's future growth opportunities, and it is calculated for each three-digit ISIC industry in each year between 1980 and 1997. We use the lagged value so as to allow industries to adjust to demand shocks. Unlike the external finance dependence variable, *Global PE Ratio* varies over time because growth opportunities such as those arising out of global shocks are likely to be temporal. Note that this variable reflects exogenous growth opportunities in the world market for each industry rather than country-specific growth opportunities.

As a robustness check, we also use industry sales growth in U.S. firms to rank industries according to growth opportunities, based on Fisman and Love (2004). Since capital markets in the United States are relatively frictionless, U.S. firms are likely to react optimally to global demand shocks. Note that Fisman and Love's (2004) growth opportunity measure does not vary over time. To capture the effect of global demand shocks, we use Compustat data to construct an annual measure of sales growth in U.S. industries, where annual *Sales Growth* is the industry median of real sales growth in each year between 1981 and 1998 for 27 three-digit ISIC manufacturing industries. We use the one year lagged value of this variable. From Appendix Table 3C we note that the correlation between Fisman and Love's (2004) constant sales growth measure, *Sales Growth in 1980s*, and real value added industry growth is equal to 0.159 and is not statistically significant, whereas the correlation between annual *Sales Growth* and value added growth is equal to 0.329 and is highly significant. Note that the correlations for the time-varying variables, *Global PE Ratio* and *Sales Growth* are obtained from a panel data regression with value-added growth as the dependent variable and controlling for industry-country fixed effects and year dummies, with the error term clustered for

each industry-country observation. The correlations for the constant variables, *External Dependence* and *Sales Growth in 1980s* are obtained from pooled regressions with the error term clustered for each industry-country observation.

Concentration: The concentration variable is constructed using U.S. industry concentration data from the 1992 United States Economic Census available from the U.S. Census Bureau. Since the United States is one of the least regulated economies in the world, U.S. industry concentration is likely to most closely reflect technological entry barriers such as those due to economies of scale. The U.S. census data is collected for all establishments in the United States. It is available at the four-digit SIC level, which we then match to three-digit ISIC categories. The variable *Concentration* is defined as the proportion of output produced by the largest four firms in each industry. Higher values of this variable indicate that an industry is more concentrated. Note that actual industry concentration in each country, even if it were available, may capture regulatory or institutional barriers rather than technological differences across industries.

As a robustness check we use *Firm Size*, which measures an industry's technological composition of small firms relative to large firms. This grouping variable is based on Beck, Demirguc-Kunt, Laeven, and Levine (2004), and is defined as the share of employment in firms with less than 20 employees in each industry. It is constructed using data on U.S. industries from the 1992 U.S. Economic Census.

Privatization: We create a new dataset on privatization at the industry and country level, where privatization refers to the sale of government-owned firms to private owners. We document firm level data on privatization sales in each country between 1990 and 1999 from the World Bank Privatization Transactions Database. We also hand-collect data on pre-1990 privatization transactions for countries that privatized before that year from news and government sources. To create an industry level database we classify

each firm according to its three-digit ISIC industry code. The variable *Privatization* is a dummy variable that takes the value of one for all years including and after the year in which a government-owned firm is sold to private owners in a particular industry and country. Note that this variable varies by industry, country, and year.

3.2 Data on Countries

Liberalization Date: Our sample consists of 31 emerging economies of which all but four liberalized their stock markets between 1986 and 1995. The literature defines a stock market liberalization as the policy decision by a country's government to allow foreign investors to purchase shares in the country's stock markets. We follow this convention by selecting the official liberalization date from Bekaert and Harvey (2000) and Bekaert, Harvey, and Lundblad (2005), which refers to the year of a formal regulatory change after which foreign investors officially have the opportunity to invest in domestic equity securities in that country. In the analysis, *Liberalization* is defined as a dummy variable that is equal to one for all years including and after the year of stock market liberalization. Table 3 reports the stock market liberalization year and the sample period observed for each country.

Allocative Efficiency of Capital: We measure the efficiency of capital allocation in each country prior to a stock market liberalization, based on Wurgler (2000). Specifically, we estimate regressions with investment at the industry level as the dependent variable and growth in real value-added as the right-hand-side variable for each country across all years before liberalization. The coefficient of value-added growth is the measure of investment value-added elasticity at the country level. Higher values of this variable are associated with more efficient allocation of capital and therefore lower entry barriers for new firms, since it indicates that more investment funds are allocated to

growing industries. We define *Allocative Efficiency* as a dummy variable that is equal to one if the investment-value added elasticity measure of a country is above the 75^{th} percentile of elasticity for all countries, indicating a country with lower entry barriers.

Control Variables: We control for a range of country-specific factors in the regression analysis that are expected to be related to industry growth. These include the ratio of annual exports and imports to total GDP to control for the effects of trade liberalization and the overall availability of credit in the economy to control for other financial market reforms. Since the impact of liberalization may differ according to country size, we also control for annual per capita real GDP. The literature has found evidence of a significant impact of human capital on growth (King and Levine (1993); Bekaert, Harvey, and Lundblad (2005)), so we include the ratio of annual secondary school enrollment to total school enrollment. We may overstate the impact of liberalization if governments time liberalization to coincide with a boom in the world business cycle. To separate business cycle effects and contemporaneous macroeconomic shocks from the liberalization effect, we include the average annual economic growth rate of OECD economies and year dummies in all the regressions. To control for initial conditions and industrial structure in an economy, all the specifications include the lagged share of each industry's value added in the total value added of all industries in that country. We obtain most of the country economic variables from the World Bank's World Development Indicators, with the exception of the ratio of private credit to GDP, which is from Beck, Levine, and Loayza (2000). The summary statistics for all the country-level economic variables are reported in Table 4. As a robustness check we also control for institutional characteristics at the country level using the *Creditor Rights* index from La Porta, Lopez de Silanes, Shleifer, and Vishny (1998).

Contemporaneous Reforms: To control for the effect of other economic reforms, we investigate the effects of short-run macroeconomic stabilization programs at the coun-

try level. Data on stabilization programs is obtained from Henry (2000a) and Hutchison (2001). We select only those stabilization dates that are recorded in both sources for the countries in our data. The variable *Stabilization* is equal to one for the years in which a country entered into a stand-by agreement with the International Monetary Fund.

Instrumental Variables: For the instrumental variable analysis we use country-level data on initial economic conditions measured by the average pre-liberalization values of log per capita GDP and the share of international trade in GDP. These data are from the World Development Indicators Database. We also use the *Rule of Law* index from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1997).

4. Disaggregating the Impact of Stock Market Liberalization on Industry Growth

4.1 External Dependence and the Impact of Liberalization

To investigate the impact of a stock market liberalization across industries, we examine whether the cross-sectional impact is consistent with the view that liberalization reduces financing constraints by lowering the cost of external capital and improving the alignment between capital and growth opportunities.

In Hypothesis 1 we argue that if liberalization lowers the cost of external capital then it will lead to higher growth in industries that are more dependent on external finance. To test this hypothesis we estimate the following panel data specification with

industry-country fixed effects:

$$\begin{aligned} Growth_{i,j,t} &= \beta_1 Liberalization_{j,t} + \beta_2(Liberalization_{j,t} \times External\ Dependence) \\ &\quad +\beta_3\ X_{i,j,t-1} + \beta_4 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}, \end{aligned} \tag{2}$$

where *External Dependence* captures an industry's technological dependence on external finance, and the remaining variables are described below equation (1).[6] This is a difference in difference approach with a control group in each year that includes those countries in the sample that have either not yet liberalized or never liberalize their stock markets during the sample period. Note that in all the regressions here and below the error term is corrected for heteroskedasticity and clustered for each industry-country observation.

The results from estimating equation (2) are reported in Table 5, Panel A. Consistent with Hypothesis 1, we find that industries that are more dependent on external finance grow significantly faster following liberalization, which suggests that a stock market liberalization facilitates industry growth by reducing the cost of external capital. The coefficient of the interaction term is statistically significant at the 5 percent level with growth in value added (column (1)) and log investment (column (4)) as the dependent variables. This effect is also economically significant. For example, from the coefficient of the interaction between liberalization and external dependence in column (1) we estimate that on average a stock market liberalization leads to a 1.9 percentage point higher growth in real value added in the Textiles industry at the 75^{th} percentile of external finance dependence, relative to the Petroleum Refinery industry at the 25^{th} percentile.[7] We report this *Differential in Growth* in all the tables here and below. These results are robust to controlling for industry-country fixed effects and several industry and country characteristics. Hence, consistent with Hypothesis 1, the disaggregated industry

level results suggest that liberalization promotes industry growth by reducing financing constraints. However, note that liberalization does not have a significant impact on the growth rate of the number of establishments in more externally dependent industries.

The results suggest that industry growth is also significantly related to the relative size of the industry, to country level factors, and to global business cycles. For example, comparing an industry in the 75^{th} percentile of *Share of Industry Value Added* with a share of 5%, with an industry in the 25^{th} percentile with a share of 0.77%, we note from column (1) that the difference in growth rate of real value added between these two industries is about 20%. From column (1) we also note that a 1% increase in *Openness to Trade* and *Log Per Capita GDP* will be followed by an increase of about 0.2% and 0.32%, respectively, in value added growth. Lastly, we note that a 1% increase in *Private Credit/GDP* and *OECD Growth* would lead to a 0.3% decrease and a 3.3% increase, respectively, in value added growth.

4.2 Growth Opportunities and the Impact of Liberalization

In Hypothesis 2 we argue that if liberalization improves the alignment between capital and growth opportunities, it will lead to higher growth in industries that face better growth opportunities. To test this hypothesis we estimate the following panel data specification with industry-country fixed effects:

$$\begin{aligned} Growth_{i,j,t} &= \beta_1 Liberalization_{j,t} + \beta_2 (Liberalization_{j,t} \\ &\quad \times Growth\ Opportunities_{it-1}) + \beta_3 Growth\ Opportunities_{it-1} \\ &\quad + \beta_4 X_{i,j,t-1} + \beta_5 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}. \end{aligned} \tag{3}$$

where *Growth Opportunities* is an industry-specific annual variable that captures investors' expectations about an industry's future growth opportunities. The variable is lagged one year to allow the market to adjust to global industry demand shocks. The results are reported in Panel B of Table 5.

Consistent with Hypothesis 2, the industry level evidence suggests that the allocative efficiency of capital will improve following a stock market liberalization, although the effect is less statistically significant at the 10 percent level compared to the results in Panel A. From the estimated coefficient of the interaction between liberalization and growth opportunities, we estimate that on average a stock market liberalization leads to a 1.8 percentage point higher growth in real value added in the Printing industry at the 75^{th} percentile of growth opportunities before liberalization, relative to the Beverages industry at the 25^{th} percentile.[8]

The disaggregated industry level results reveal the complex nature of the growth impact of a stock market liberalization. The cross-industry evidence suggests that liberalization relaxes financing constraints, since more externally dependent industries and industries with better growth opportunities grow significantly faster following liberalization. However, within these industries, liberalization appears to benefit existing firms rather than facilitating the entry of new firms. This suggests that liberalization may not ease access to credit for new firms, which typically face the greatest credit constraints. To reconcile these *prima facie* conflicting results, we explore whether barriers to entry may prevent new firms from benefiting from a stock market liberalization.

4.3 Barriers to Entry and the Impact of Liberalization

We investigate whether the impact of liberalization on industry growth is affected by country and industry level barriers that prevent new firm entry following liberalization.

4.3.1 Capital Allocative Efficiency

In Hypothesis 3, we argue that new firms will benefit less from a reduction in financing constraints following liberalization if they are located in countries that allocate capital less efficiently because of regulatory barriers and institutional frictions. To investigate this hypothesis, we estimate the following panel data specification with industry-country fixed effects:

$$\begin{aligned} Growth_{i,j,t} &= \beta_1 Liberalization_{j,t} + \beta_2(Liberalization_{j,t} \times External\ Dependence_i) \\ &\quad +\beta_3(Liberalization_{j,t} \times External\ Dependence_i \\ &\quad \times Allocative\ Efficiency_j) + \beta_4 X_{i,j,t-1} + \beta_5 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}, \end{aligned} \tag{4}$$

where *Allocative Efficiency* is a dummy variable that takes the value of one for countries that allocate capital more efficiently before liberalization, and the remaining variables are as defined earlier.[9]

The results reported in Panel A of Table 6 confirm Hypothesis 3. From the coefficient of the interaction term β_3 reported in columns (1) and (2), we estimate that compared to a country that allocates capital less efficiently, industries that depend more on external finance will experience an 8.4% higher growth in the number of establishments and a 9.5% higher growth in value added following liberalization if they are located in a country that allocates capital more efficiently. This effect is highly statistically significant for both growth in real value-added and growth in the number of establishments at the 5 percent level.

Next, to investigate Hypothesis 4, that in countries that allocate capital more efficiently, liberalization will lead to new firm growth in industries that face better growth opportunities, we estimate the following panel data specification with industry-country

fixed effects:

$$\begin{aligned} Growth_{i,j,t} &= \beta_1 Liberalization_{j,t} + \beta_2(Liberalization_{j,t} \times Growth\ Opportuniti\ es_{it-1}) \\ &+\beta_3 Growth\ Opportunities_{it-1} + \beta_4(Growth\ Opportunities_{it-1} \\ &\times Allocative\ Efficiency_j) + \beta_5(Liberalization_{j,t} \times Growth\ Opportunities_{it-1} \\ &\times Allocative\ Efficiency_j) + \beta_6 X_{i,j,t-1} + \beta_7 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}, \end{aligned} \quad (5)$$

where the variables are as described earlier.[10] The results reported in Panel B of Table 6 are consistent with Hypothesis 4. The interaction term β_5 is highly statistically significant at the 1 percent level for growth in the number of establishments, and significant at the 10 percent level for growth in real value-added and establishment size. From the coefficient of the interaction term β_5 in columns (1) and (2), we estimate that compared to a country that allocates capital less efficiently, industries with better growth opportunities experience a 0.4% higher growth in the number of establishments and 0.2% higher growth in value added following liberalization if they are located in a country with more efficient capital allocation.

These results suggest that the reduction in financing constraints due to a stock market liberalization will lead to a larger and more uniformly distributed growth impact if it is accompanied by complementary reforms that increase the allocative efficiency of capital in the country.

4.3.2 Industry Concentration

From a policy perspective it is useful to identify industry level barriers that may affect the cross-sectional impact of liberalization. To investigate Hypothesis 5 that industries that are more concentrated for technological reasons will benefit less from a stock market

liberalization, we estimate the following panel data specification with industry-country fixed effects:

$$\begin{aligned} Growth_{i,j,t} &= \beta_1 Liberalization_{j,t} + \beta_2(Liberalization_{j,t} \times Concentration_i) \\ &\quad + \beta_3 X_{i,j,t-1} + \beta_4 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}, \end{aligned} \tag{6}$$

where *Concentration* is defined as the proportion of output produced by the largest four firms in an industry based on U.S. data, and the remaining variables are as defined earlier.[11] The results are reported in Table 7. Consistent with Hypothesis 5, we note from the negative and statistically significant (at the 10 percent level) coefficient of the interaction term β_2 that following liberalization, less concentrated industries experience a greater increase in real value added growth (column (1)). In the last row, we report that on average a stock market liberalization leads to a 3.1 percentage point higher growth in real value added in industry at the 75^{th} percentile relative to the industry at the 25^{th} percentile of industrial concentration. However, industry concentration does not appear to be significantly related to the other dependent variables.

4.3.3 Privatization

Next, we focus on the reduction of barriers to entry at the industry level by considering the privatization of government-owned firms in a particular industry and country. To investigate Hypothesis 6 that liberalization will lead to higher establishment growth in industries that privatize government-owned firms, we estimate the following panel data specification with industry-country fixed effects:

$$\begin{aligned} Growth_{i,j,t} &= \beta_1 Liberalization_{j,t} + \beta_2(Liberalization_{j,t} \times Privatization_{i,j,t}) \\ &\quad + \beta_3 Privatization_{i,j,t} + \beta_4 X_{i,j,t-1} + \beta_5 Year_t + \alpha_{i,j} + \epsilon_{i,j,t}, \end{aligned} \tag{7}$$

where *Privatization* is a dummy variable that takes the value of one for all years including and after the year in which a government-owned firm in industry i, located in country j, is privatized. The remaining variables are as defined earlier. The results are reported in Table 8.

Consistent with Hypothesis 6, we find that privatizing government-owned firms will encourage the entry of new firms. The positive and highly statistically significant coefficient of the interaction between *Privatization* and *Liberalization* (at the 1 per cent level) suggests that privatizing industries experience a significant increase in both real value added and establishment growth following liberalization. From the coefficient of the interaction between liberalization and privatization in column (2) we estimate that among privatizing industries, those located in liberalized countries experience 15.6% higher growth in the number of establishments. Note that value added growth increases and growth in investment per establishment decreases, which is consistent with the result that growth in the number of establishments in privatizing industries increases following liberalization.

The result that a stock market liberalization does not lead to an increase in new firm growth is puzzling since new firms are likely to be more financially constrained. Disaggregating the effect of liberalization we find evidence suggesting that other frictions in emerging markets may prevent new firms from benefiting from liberalization. In particular, we find that growth in the number of establishments is higher in more externally dependent industries and in industries that face better growth opportunities following liberalization, if these industries are located in countries that allocate capital more efficiently. We also find that industries with lower structural barriers to entry grow faster following liberalization. Lastly, the results show that liberalization leads to new firm growth in industries that privatize government-owned firms. These results suggest that a stock market liberalization is likely to have a larger and more uniformly

distributed growth impact if it is accompanied by complementary reforms that enhance competition and increase efficiency in capital allocation.

4.4 Additional Robustness Checks

Institutional Environment: Since financial market frictions are likely to be lower in countries with better governance mechanisms, the growth impact of a stock market liberalization may depend on country level governance factors. In Table 9, Panel A we investigate whether the impact of a stock market liberalization varies based on the protection of creditor rights in the economy. The results show that the growth rate of the number of establishments is higher in countries with better creditor rights, and this effect is more pronounced following liberalization. Consistent with the previous results on barriers to entry, liberalization appears to facilitate higher growth through the establishment of new firms in countries with better creditor rights. We also note that privatization is not a proxy for these institutional factors since the coefficients of both the privatization variable and its interaction with liberalization retain their sign and significance in the regressions.[12] Lastly, we find that industry value added growth is higher in countries with strong creditor rights, which is consistent with the country level growth results in Bekaert, Harvey, and Lundblad (2005). Note that all the regressions in Table 9, Panels A-D include all the control variables used in equations $(1) - (7)$, which we do not report to save space.

Contemporaneous Economic Reforms: Since stock market liberalizations are often part of a larger economic reform program, as a robustness check we also investigate whether we are overstating the growth impact of liberalization because of other economic reforms that are simultaneously implemented. In particular, we control for the effect of short-run macroeconomic stabilization programs by including a dummy variable equal

to one in the years in which a country entered into a stand-by agreement with the International Monetary Fund. From Table 9, Panel B we note that the results for external dependence and privatization remain robust after controlling for the effect of contemporaneous reforms. Undertaking a stabilization program appears to significantly reduce the growth rate of real value added and average market capitalization in a given year, while industry investment increases following stabilization. However, stabilization programs are also more likely to be implemented during an economic downturn. Note that in all the specifications we also control for trade liberalization by including openness to trade at the country level, and for other financial market reforms by including the ratio of private credit to GDP.[13]

Firm Size: We investigate whether liberalization increases economic growth by easing financing constraints for industries that are technologically more dependent on small firms. Small firms may face greater financial constraints because of high information costs for investors. The results reported in Table 9, Panel C show that following liberalization, industries that are technologically more dependent on small firms experience significantly higher growth in real value added. This is consistent with the results obtained for industry concentration. Also note that the results for external finance dependence and privatization are robust.

Alternative Measure of Growth Opportunities: As a robustness check, we use lagged industry sales growth in U.S. firms to rank industries according to growth opportunities, based on Fisman and Love (2004). The results reported in Table 9, Panel D are similar although less significant than those obtained using the *Global PE Ratio* in Table 6. We find that industries that face better growth opportunities experience significantly higher establishment growth following liberalization if they are located in countries that allocate capital more efficiently.

5. Conclusion

Financial market liberalization in developing countries has generated considerable controversy. While one side maintains that financial liberalization sets the stage for more rapid growth (Summers (2000)), the other side argues that it increases the potential for crises and a collapse in growth (Bhagwati (1998)). To gain more insight into this important question of whether stock market liberalization benefits developing countries we use panel data at the industry level to investigate the cross-sectional impact of liberalization on industry growth in a large sample of emerging markets.

We find that liberalization is followed by an increase in industry value added growth, investment, and average market capitalization, which is consistent with the view that financing constraints are reduced when the stock market is liberalized. However, the increase in industry growth appears to come from an expansion in the size of existing firms, rather than through the entry of new firms into an industry. Since new firms typically face high financial constraints, this seems to contradict the view that liberalization promotes growth by reducing financing constraints. To investigate this puzzle we examine the cross-sectional and within-industry impact of liberalization. Our results reveal the complex nature of liberalization. While the cross-sectional results support the view that liberalization reduces financing constraints, the within-industry results indicate that establishment growth in these industries does not increase following liberalization.

To reconcile the cross-sectional and within-industry results we find evidence suggesting that barriers to entry at the industry and country level may prevent new firms from benefiting uniformly from liberalization. The results show that establishment growth is significantly higher in industries that depend more on external finance and industries that face better growth opportunities if these industries are located in countries that allocate capital more efficiently. We also find that barriers to entry at the industry level

arising out of technological factors can affect growth. Lastly, the evidence shows that establishment growth is significantly higher in privatizing industries following a stock market liberalization. This finding is consistent with the view that the privatization of government-owned firms reduces entry barriers, thereby allowing new firms to benefit from a stock market liberalization.

The result that the growth impact of stock market liberalization is larger if it is accompanied by competition enhancing reforms implies that the issue of complementarities in financial reforms deserves further research. Complementarities were shown to be a crucial aspect of economic reforms in transition economies (e.g., price liberalization and ownership reform (Roland (2000)), and may be similarly important in financial market reforms in developing countries.

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Notes

[1]See Prasad, Rogoff, Wei, and Kose (2004), Eichengreen (2002), and Errunza (2001) for surveys regarding the effect of financial globalization, capital account liberalization, and foreign portfolio investment on economic growth, respectively.

[2]The robust regression, estimated using the *rreg* procedure in Stata, mitigates the effect of any influential observations. It is an iterative procedure which starts with an OLS estimation, obtains residuals and iteratively assigns weights such that observations with larger residuals are assigned smaller weights. The robust regression algorithm used by Stata is formally called "M estimation" and uses Huber and Tukey bisquare weight functions ($http://www.nyu.edu/its/statistics/Docs/robust\_reg3.pdf$).

[3]With the exception of Bekaert, Harvey, and Lundblad (2005), who address endogeneity by including country-specific growth opportunities in the growth regression, the literature has typically not addressed the endogeneity of the liberalization decision to economic growth.

[4]The correlations with *Liberalization* are estimated coefficient values obtained from univariate cross-sectional probit regressions with the error term clustered for each industry-country observation. The correlations with value added growth are the estimated coefficients obtained from pooled regressions with the error term clustered for each industry-country observation.

[5]Countries in our data implemented stock market liberalization between 1986 and 1995.

[6]Note that the external dependence variable is not included separately in the speci-

fication since it is time-invariant and we control for industry-country fixed effects.

[7]This is obtained by multiplying the difference between the 75^{th} percentile of external dependence (0.400) and the 25^{th} percentile of external dependence (0.042) by 0.052, the estimated coefficient of the interaction between external finance dependence and liberalization reported in column (1) of Panel A in Table 5.

[8]This is obtained by multiplying the difference between the 75^{th} percentile of growth opportunities (21.612) and the 25^{th} percentile of growth opportunities (13.218) prior to liberalization, by 0.002, the estimated coefficient of the interaction between growth opportunities and liberalization reported in column (1) of Panel B in Table 5. Note that we use annual lagged values of growth opportunities in the regressions.

[9]Note that *Allocative Efficiency* does not enter the specification separately since it is time-invariant and the specification controls for industry-country fixed effects.

[10]Note that equation (5) includes more interaction terms than equation (4) because annual *Growth Opportunities* can be identified separately with industry-country fixed effects.

[11]Since the concentration measure is time-invariant it cannot be identified separately in a specification with industry-country fixed effects.

[12]The results for external dependence are also robust to controlling for creditor rights. We do not report these results to save space.

[13]Bekaert, Harvey, and Lundblad (2005) also control for contemporaneous reforms as an alternative explanation for the liberalization effect.

Table 1

The Average Impact of a Stock Market Liberalization: Preliminary Results

Panel A presents results from industry-country fixed effects regressions of the impact of liberalization, Panel B presents results from a robust regression specification with industry-country fixed effects, Panel C presents results from a quantile regression with industry and country fixed effects, where the impact of liberalization on Growth in Real Value Added is investigated for different percentiles of the dependent variable, and Panel D presents results from an instrumental variable regression with industry-country fixed effects, treating liberalization as endogenous. Standard errors (in parentheses) are corrected for heteroskedasticity and are clustered for each industry-country observation in Panels A and D. R^2 in the robust regressions of Panel B is defined with respect to the norm used and differs from the OLS regressions of Panel A. The variables are described in Appendix Table 1.

Panel A : Fixed Effects Regression of the Average Impact of Stock Market Liberalization

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.159 ***	-0.015	0.174 ***	0.329 ***	0.280 ***	0.536 ***
	(0.027)	(0.016)	(0.027)	(0.055)	(0.050)	(0.097)
Share of Industry Value Added $_{t-1}$	-0.047 ***	-0.003 *	-0.044 ***	0.058 ***	-0.009	-0.003
	(0.005)	(0.002)	(0.005)	(0.014)	(0.008)	(0.010)
Openness to Trade $_{t-1}$	0.002 ***	0.002 ***	0.000	0.003	0.002 *	0.008 ***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Log Per Capita GDP $_{t-1}$	0.313 ***	0.123 ***	0.195 ***	3.941 ***	-0.045	-0.724 ***
	(0.064)	(0.037)	(0.073)	(0.252)	(0.117)	(0.192)
OECD Growth $_t$	0.036 ***	0.044	-0.008	-0.076 ***	-0.052 ***	0.205 ***
	(0.007)	(0.005) ***	(0.008)	(0.012)	(0.019)	(0.036)
Human Capital $_{t-1}$	-0.001	-0.002 **	0.002	0.007 **	0.008 ***	0.002
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.003 ***	-0.002 ***	-0.002 **	-0.010 ***	0.000	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8277	8241	5810	5438	1330
R^2	0.090	0.100	0.080	0.880	0.070	0.250

Panel B: Robust Regression of the Average Impact of Stock Market Liberalization

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.033 ***	0.003	0.041 ***	0.166 ***	0.276 ***	0.365 ***
	(0.008)	(0.003)	(0.009)	(0.033)	(0.035)	(0.068)
Share of Industry Value Added $_{t-1}$	-0.018 ***	-0.001 **	-0.016 ***	0.064 ***	-0.003	-0.018 **
	(0.001)	(0.000)	(0.001)	(0.006)	(0.006)	(0.007)
Openness to Trade $_{t-1}$	0.001 ***	0.001 ***	0.000	0.007 ***	-0.002	0.000
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)
Log Per Capita GDP $_{t-1}$	0.057 **	-0.002	0.026	3.541 ***	-0.015	-0.405 **
	(0.025)	(0.010)	(0.028)	(0.098)	(0.104)	(0.188)
OECD Growth $_t$	0.018 ***	0.002	0.006	-0.085 ***	0.021 *	0.053
	(0.003)	(0.001)	(0.004)	(0.012)	(0.013)	(0.038)
Human Capital $_{t-1}$	0.000	0.001 ***	-0.001	0.005 ***	0.003	-0.005
	(0.000)	(0.000)	(0.001)	(0.002)	(0.002)	(0.004)
Private Credit/GDP $_{t-1}$	-0.001 ***	0.000	-0.001 ***	-0.008 ***	0.000	-0.002
	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8277	8241	5810	5438	1330
R^2	0.310	0.400	0.230	0.920	0.200	0.340

Table 1 continued

Panel C :Quantile Regression of the Impact of a Stock Market Liberalization on Growth in Real Value Added

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Percentile of Growth in Real Value Added						
	1%	10%	25%	50%	75%	90%	99%
Liberalization $_t$	.212 ***	.055 ***	.051 ***	.039 ***	.037 **	.033 *	-.014
	(0.079)	(0.013)	(0.013)	(0.009)	(0.015)	(0.020)	(0.060)
Share of Industry	-.007	-.001	-.001	-.003 ***	-.005 ***	-.009 ***	-.026 ***
Value Added $_{t-1}$	(0.008)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.006)
Openness to Trade $_{t-1}$	.002	.001 *	.001 ***	.001 ***	.001 **	.001 ***	.005 *
	(0.002)	(0.001)	0.000	(0.000)	(0.000)	(0.000)	(0.003)
Log Per Capita GDP $_{t-1}$	.467 *	.128 ***	.081 **	.029	.066 *	.133 **	.468
	(0.256)	(0.039)	(0.033)	(0.026)	(0.036)	(0.062)	(0.376)
OECD Growth $_t$	.135 ***	.042 ***	.022 ***	.019 ***	.026 ***	.023 ***	.076 ***
	(0.036)	(0.007)	(0.003)	(0.004)	(0.004)	(0.007)	(0.027)
Human Capital $_{t-1}$	.012 ***	.000	.000	.001 *	.000	-.001	-.005
	(0.005)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.004)
Private Credit/GDP $_{t-1}$	-.001	-.002 ***	-.001 ***	-.001 ***	-.001 ***	-.002 ***	-.009 ***
	(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.002)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8320	8320	8320	8320	8320	8320

Panel D : Instrumental Variable Estimates of the Average Impact of Stock Market Liberalization

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.437 ***	0.084	0.356 **	8.415 ***	0.858 ***	-0.040
	(0.136)	(0.076)	(0.142)	(0.647)	(0.241)	(0.526)
Share of Industry	-0.005 **	-0.002	-0.003	0.218 ***	0.004	0.000
Value Added $_{t-1}$	(0.002)	(0.001)	(0.002)	(0.012)	(0.005)	(0.005)
Openness to Trade $_{t-1}$	0.001 **	0.001 ***	0.000	-0.023 ***	0.000	-0.001
	(0.001)	(0.000)	(0.001)	(0.002)	(0.001)	(0.001)
Log Per Capita GDP $_{t-1}$	-0.046 **	-0.015	-0.033	-1.033 ***	-0.124 ***	0.044
	(0.020)	(0.011)	(0.021)	(0.110)	(0.040)	(0.068)
OECD Growth $_t$	0.019	0.041 ***	-0.024 *	-0.330 ***	-0.054 **	0.136 ***
	(0.013)	(0.007)	(0.014)	(0.071)	(0.026)	(0.051)
Human Capital $_{t-1}$	0.001	0.000	0.001	0.020 ***	0.005 ***	0.002
	(0.001)	(0.000)	(0.001)	(0.003)	(0.001)	(0.002)
Private Credit/GDP $_{t-1}$	0.000	0.000	0.000	0.058 ***	0.001	-0.003 *
	(0.001)	(0.000)	(0.001)	(0.004)	(0.001)	(0.002)
Industry-Country FE	No	No	No	No	No	No
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	3713	3729	3704	2638	2487	627
Sargan Test χ^2 (p value)	0.824 (0.662)	4.209 (0.122)	1.36 (.507)	3.004 (0.223)	0.528 (0.768)	4.191(0.123)

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.

Table 2
Pattern of Growth Across Industries

This first row in this table reports the mean value of industry characteristics for 31 countries between 1981 and 1998 with standard deviations in parentheses. The remaining rows describe the median, minimum, maximum, 1st percentile (1%), 5th percentile (5%), 95th percentile (95%), and 99th percentile (99%) of each variable for each industry across all sample years and countries. Note that all the growth rates are in logs. The summary statistics are computed for each 3-digit ISIC industry across all available countries and years. The variables are described in Appendix Table 1.

ISIC	Industrial Sectors		Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
311	Food products	Mean	0.036	0.007	0.024	11.859	0.013	0.191
		Standard Deviation	(0.548)	(0.339)	(0.597)	(1.313)	(0.639)	(0.634)
		Median	0.035	0.004	0.016	11.975	0.050	0.115
		Min	-3.039	-2.960	-2.181	7.077	-4.697	-1.252
		Max	7.262	2.689	7.454	14.946	2.973	2.539
		1%	-1.689	-0.951	-1.665	8.090	-1.806	-1.244
		5%	-0.349	-0.216	-0.517	9.503	-0.732	-0.724
		95%	0.362	0.210	0.376	13.978	0.684	1.299
		99%	1.471	1.081	2.040	14.720	2.564	2.165
313	Beverages	Mean	0.037	0.002	0.034	10.397	0.033	0.127
		Standard Deviation	(0.585)	(0.277)	(0.644)	(1.620)	(0.768)	(0.953)
		Median	0.042	0.000	0.027	10.635	0.074	0.161
		Min	-3.039	-2.470	-2.455	3.939	-3.422	-3.348
		Max	7.715	2.108	7.889	14.024	2.962	4.595
		1%	-1.611	-0.583	-1.637	4.840	-2.203	-3.348
		5%	-0.368	-0.230	-0.502	7.560	-1.178	-1.810
		95%	0.435	0.259	0.455	12.605	1.182	1.293
		99%	1.378	0.674	2.034	13.805	2.242	4.595
314	Tobacco	Mean	-0.001	-0.011	0.010	9.246	0.018	0.179
		Standard Deviation	(0.863)	(0.276)	(0.913)	(1.459)	(1.291)	(0.729)
		Median	0.038	0.000	0.016	9.226	-0.023	0.138
		Min	-7.801	-1.978	-7.801	0.410	-7.164	-2.321
		Max	8.272	2.511	8.372	12.450	5.421	2.948
		1%	-3.039	-0.412	-2.951	5.320	-5.627	-2.321
		5%	-0.419	-0.291	-0.588	6.962	-1.810	-0.695
		95%	0.415	0.288	0.512	11.202	1.838	0.978
		99%	1.775	0.693	2.516	11.699	5.262	2.948
321	Textiles	Mean	-0.007	0.004	-0.017	11.408	-0.023	0.081
		Standard Deviation	(0.623)	(0.277)	(0.677)	(1.978)	(0.661)	(0.958)
		Median	0.024	0.000	0.016	11.482	0.030	-0.007
		Min	-3.078	-2.603	-4.027	5.007	-3.985	-2.706
		Max	7.351	1.738	7.500	14.948	2.130	4.803
		1%	-2.473	-0.909	-2.342	5.220	-1.798	-2.152
		5%	-0.487	-0.209	-0.711	7.674	-1.104	-1.476
		95%	0.393	0.273	0.347	14.416	0.939	1.460
		99%	1.670	0.949	1.766	14.908	1.603	3.298
322	Wearing apparel, except footwear	Mean	0.082	0.047	0.027	9.768	0.035	-0.304
		Standard Deviation	(0.651)	(0.466)	(0.689)	(1.753)	(0.837)	(0.867)
		Median	0.047	0.013	0.019	9.798	0.040	-0.164
		Min	-3.039	-4.116	-2.433	5.003	-3.959	-2.675
		Max	7.646	2.757	7.827	13.574	4.162	1.305
		1%	-1.611	-2.046	-2.014	5.619	-2.145	-2.675
		5%	-0.403	-0.164	-0.582	6.404	-1.462	-2.155
		95%	0.547	0.587	0.475	12.631	1.246	1.076
		99%	1.321	2.318	1.950	12.933	2.342	1.305
323	Leather products	Mean	0.020	0.041	-0.024	8.231	-0.006	NA
		Standard Deviation	(0.479)	(0.307)	(0.503)	(1.816)	(0.819)	NA
		Median	0.017	0.004	-0.004	8.311	-0.038	NA
		Min	-4.451	-1.671	-4.269	3.519	-2.807	NA
		Max	3.575	1.633	3.225	12.135	4.017	NA
		1%	-1.126	-1.198	-1.403	3.721	-1.935	NA
		5%	-0.542	-0.234	-0.685	5.009	-1.238	NA
		95%	0.521	0.491	0.494	11.703	1.422	NA
		99%	1.160	1.198	1.386	11.954	2.973	NA
324	Footwear, except rubber or plastic	Mean	0.029	0.023	0.005	8.536	-0.020	-0.372
		Standard Deviation	(0.426)	(0.389)	(0.479)	(1.851)	(1.104)	(1.102)
		Median	0.006	0.000	0.002	8.416	-0.004	-0.053
		Min	-2.582	-2.269	-2.518	0.357	-6.838	-3.101
		Max	1.680	1.974	2.499	12.920	7.445	2.027
		1%	-1.471	-1.754	-1.556	3.851	-3.833	-3.101
		5%	-0.503	-0.326	-0.892	5.654	-1.428	-2.481
		95%	0.677	0.486	0.705	11.738	1.291	0.823
		99%	1.329	1.649	1.558	12.491	3.344	2.027

Table 2 continued

331	Wood products, except furniture	Mean	-0.002	-0.010	0.003	9.490	-0.038	0.240
		Standard Deviation	(0.593)	(0.326)	(0.603)	(2.075)	(0.846)	(0.918)
		Median	0.006	0.000	0.004	9.523	-0.007	-0.029
		Min	-3.039	-1.921	-2.208	2.975	-5.957	-1.495
		Max	6.704	1.797	6.912	13.311	1.961	3.274
		1%	-1.777	-1.416	-1.635	3.969	-2.095	-1.495
		5%	-0.541	-0.316	-0.693	5.867	-1.252	-0.899
		95%	0.482	0.272	0.489	12.669	1.384	1.842
		99%	1.788	1.424	2.076	13.180	1.956	3.274
332	Furniture, except metal	Mean	0.045	0.024	0.022	8.388	0.055	-1.002
		Standard Deviation	(0.649)	(0.388)	(0.652)	(1.945)	(1.154)	(1.020)
		Median	0.017	0.002	-0.004	8.371	0.046	-0.691
		Min	-3.039	-2.436	-2.238	2.822	-3.911	-2.477
		Max	7.319	2.503	7.525	15.286	5.317	-0.147
		1%	-1.700	-1.300	-1.821	3.993	-3.653	-2.477
		5%	-0.473	-0.245	-0.646	5.230	-1.791	-2.477
		95%	0.686	0.372	0.456	11.769	2.370	-0.147
		99%	1.866	1.386	2.224	12.545	3.244	-0.147
341	Paper and pulp products	Mean	0.043	0.019	0.021	10.623	-0.013	0.079
		Standard Deviation	(0.560)	(0.224)	(0.575)	(1.789)	(0.938)	(0.726)
		Median	0.044	0.014	0.009	10.619	0.041	0.012
		Min	-3.039	-1.441	-2.802	5.624	-3.168	-1.756
		Max	7.519	1.758	7.641	14.529	3.400	2.181
		1%	-1.611	-0.886	-1.450	6.445	-2.723	-1.756
		5%	-0.427	-0.245	-0.505	7.324	-1.865	-0.948
		95%	0.504	0.298	0.535	13.492	1.268	1.529
		99%	1.058	0.604	0.846	14.276	2.305	2.089
342	Printing and publishing	Mean	0.058	0.014	0.038	10.020	0.015	-0.264
		Standard Deviation	(0.680)	(0.247)	(0.694)	(1.566)	(0.948)	(0.227)
		Median	0.049	0.002	0.026	10.086	0.082	-0.264
		Min	-3.039	-1.746	-2.628	5.627	-4.954	-0.425
		Max	7.659	1.450	7.856	13.434	2.821	-0.103
		1%	-2.188	-0.968	-1.942	5.930	-3.567	-0.425
		5%	-0.410	-0.203	-0.522	7.046	-1.390	-0.425
		95%	0.424	0.278	0.494	12.403	1.263	-0.103
		99%	2.284	1.038	2.372	13.159	2.515	-0.103
352	Other chemicals	Mean	0.033	0.021	0.012	10.890	0.017	-0.021
		Standard Deviation	(0.293)	(0.171)	(0.306)	(1.439)	(0.564)	(0.731)
		Median	0.052	0.008	0.024	10.937	0.049	-0.089
		Min	-1.913	-0.933	-1.956	7.317	-3.349	-1.789
		Max	2.011	1.609	2.047	14.435	2.099	1.465
		1%	-0.873	-0.625	-1.074	7.756	-1.776	-1.789
		5%	-0.334	-0.166	-0.409	8.328	-0.854	-1.789
		95%	0.371	0.196	0.408	13.420	0.804	1.465
		99%	0.655	0.574	0.756	14.132	1.093	1.465
353	Petroleum refineries	Mean	0.031	0.032	-0.011	10.823	-0.059	0.015
		Standard Deviation	(0.454)	(0.315)	(0.563)	(2.006)	(0.989)	(0.573)
		Median	0.041	0.000	0.013	11.142	0.022	0.043
		Min	-1.377	-0.941	-2.115	3.199	-3.128	-2.416
		Max	2.116	2.051	2.036	14.703	2.388	1.477
		1%	-1.270	-0.916	-1.565	5.276	-2.776	-2.416
		5%	-0.787	-0.405	-1.028	7.507	-2.046	-1.015
		95%	0.725	0.549	0.899	13.741	1.586	0.878
		99%	1.631	1.609	1.662	14.382	2.253	1.477
354	Misc. petroleum and coal products	Mean	0.074	0.045	0.017	8.108	-0.040	0.101
		Standard Deviation	(0.390)	(0.281)	(0.415)	(2.128)	(1.283)	(0.662)
		Median	0.050	0.000	0.012	8.163	0.050	0.135
		Min	-1.662	-0.916	-2.380	0.065	-5.612	-1.079
		Max	2.010	2.565	1.990	12.166	6.812	1.558
		1%	-1.036	-0.693	-1.374	2.092	-5.406	-1.079
		5%	-0.453	-0.272	-0.497	4.395	-1.600	-1.079
		95%	0.720	0.464	0.651	10.968	1.518	1.558
		99%	1.584	0.827	1.540	11.663	2.201	1.558
355	Rubber products	Mean	0.000	0.014	-0.017	9.713	-0.029	NA
		Standard Deviation	(0.630)	(0.341)	(0.684)	(2.145)	(0.920)	NA
		Median	0.023	0.000	0.008	9.708	0.018	NA
		Min	-3.131	-2.258	-3.147	1.966	-4.911	NA
		Max	7.195	2.278	7.341	13.669	3.243	NA
		1%	-2.250	-0.952	-2.155	3.406	-4.791	NA
		5%	-0.549	-0.276	-0.994	5.636	-1.340	NA
		95%	0.469	0.325	0.583	13.002	1.261	NA
		99%	1.468	1.224	1.685	13.336	2.700	NA

Table 2 continued

356	Plastic products	Mean	0.058	0.042	0.011	10.232	0.045	NA
		Standard Deviation	(0.614)	(0.199)	(0.634)	(1.849)	(0.780)	NA
		Median	0.067	0.017	0.025	10.348	0.069	NA
		Min	-3.039	-0.879	-2.840	2.826	-3.417	NA
		Max	7.458	1.350	7.609	14.904	3.222	NA
		1%	-1.894	-0.477	-2.094	5.520	-2.299	NA
		5%	-0.527	-0.161	-0.562	7.135	-1.023	NA
		95%	0.504	0.288	0.444	13.199	0.916	NA
		99%	1.899	0.877	1.944	14.554	2.829	NA
361	Pottery, china,	Mean	0.011	-0.031	0.041	8.947	-0.019	NA
	earthenware	Standard Deviation	(0.750)	(0.553)	(0.890)	(1.774)	(1.053)	NA
		Median	0.016	0.000	0.021	8.987	0.027	NA
		Min	-4.140	-4.736	-3.536	2.646	-4.838	NA
		Max	7.235	2.694	7.442	12.450	4.989	NA
		1%	-3.039	-2.378	-2.523	3.758	-3.756	NA
		5%	-0.783	-0.458	-1.005	6.080	-1.576	NA
		95%	0.613	0.469	0.803	11.456	1.317	NA
		99%	2.064	1.551	3.553	12.152	3.156	NA
362	Glass and	Mean	0.036	0.022	0.010	9.586	0.036	NA
	products	Standard Deviation	(0.289)	(0.274)	(0.364)	(2.019)	(1.277)	NA
		Median	0.027	0.000	0.018	9.765	0.045	NA
		Min	-1.264	-1.872	-1.817	0.883	-5.693	NA
		Max	1.482	1.763	1.518	13.706	4.734	NA
		1%	-0.726	-1.074	-1.299	2.661	-4.414	NA
		5%	-0.513	-0.246	-0.594	6.118	-1.758	NA
		95%	0.474	0.365	0.499	12.468	1.945	NA
		99%	1.117	0.963	1.106	13.325	4.638	NA
369	Other non-metallic	Mean	0.015	0.016	-0.009	11.297	0.027	NA
	mineral products	Standard Deviation	(0.364)	(0.334)	(0.461)	(1.708)	(0.931)	NA
		Median	0.030	0.006	0.022	11.283	0.057	NA
		Min	-4.215	-2.126	-3.800	6.304	-4.967	NA
		Max	0.997	2.594	2.867	14.752	2.989	NA
		1%	-1.714	-1.882	-1.861	6.834	-2.096	NA
		5%	-0.337	-0.194	-0.549	8.092	-1.342	NA
		95%	0.385	0.202	0.469	14.046	1.658	NA
		99%	0.832	1.352	0.896	14.601	2.812	NA
371	Iron and steel	Mean	0.053	0.017	0.038	11.221	0.010	0.024
		Standard Deviation	(0.745)	(0.304)	(0.750)	(2.310)	(1.139)	(0.743)
		Median	0.044	0.000	0.030	11.284	0.038	0.005
		Min	-3.856	-2.667	-3.107	3.994	-5.587	-2.098
		Max	7.294	1.693	7.200	15.791	3.837	2.798
		1%	-2.367	-0.890	-2.065	5.297	-3.482	-1.663
		5%	-0.712	-0.297	-0.921	6.709	-1.803	-1.396
		95%	0.790	0.389	0.862	14.696	2.045	1.232
		99%	2.292	0.916	2.488	15.491	3.767	1.650
372	Non-ferrous metals	Mean	0.056	0.035	0.025	10.109	0.040	0.074
		Standard Deviation	(0.586)	(0.273)	(0.562)	(2.222)	(0.987)	(0.778)
		Median	0.026	0.000	-0.028	10.578	0.060	0.052
		Min	-1.875	-1.317	-1.706	3.893	-4.219	-2.506
		Max	3.295	1.361	3.480	14.066	3.839	2.719
		1%	-1.609	-0.795	-1.570	4.074	-3.058	-1.565
		5%	-0.700	-0.310	-0.783	5.221	-1.289	-0.746
		95%	0.760	0.405	0.743	13.263	1.495	1.339
		99%	2.520	1.253	2.118	13.711	3.550	2.691
381	Fabricated metal	Mean	0.029	0.032	-0.010	10.567	-0.010	0.086
	products	Standard Deviation	(0.287)	(0.385)	(0.410)	(1.699)	(0.788)	(0.860)
		Median	0.037	0.005	0.010	10.702	0.070	0.178
		Min	-2.739	-2.682	-2.674	6.131	-4.103	-3.428
		Max	1.072	3.013	2.666	14.531	2.386	2.843
		1%	-0.623	-1.092	-1.295	6.541	-2.930	-3.428
		5%	-0.352	-0.154	-0.523	7.563	-1.091	-1.172
		95%	0.462	0.265	0.387	13.386	1.094	1.194
		99%	0.912	1.480	1.169	14.409	1.854	2.843
382	Machinery, except	Mean	0.064	0.048	0.034	10.076	0.006	-0.035
	electrical	Standard Deviation	(0.815)	(0.358)	(0.709)	(2.197)	(0.765)	(0.688)
		Median	0.058	0.008	0.035	10.039	0.064	0.013
		Min	-6.400	-1.390	-4.302	3.734	-4.150	-2.888
		Max	7.346	2.634	7.519	15.110	2.995	1.168
		1%	-2.367	-1.115	-2.007	4.901	-3.024	-2.888
		5%	-0.391	-0.238	-0.706	5.856	-1.121	-1.212
		95%	0.704	0.356	0.733	13.669	1.134	0.770
		99%	1.809	1.449	1.809	15.073	2.641	1.168
383	Machinery, electric	Mean	0.041	0.035	0.015	10.732	0.011	-0.002
		Standard Deviation	(0.631)	(0.215)	(0.602)	(2.254)	(0.615)	(0.670)
		Median	0.049	0.013	0.018	10.617	0.075	-0.023
		Min	-3.757	-0.823	-2.701	5.072	-2.735	-2.064
		Max	7.553	1.967	7.697	16.300	2.332	2.034
		1%	-2.310	-0.442	-1.747	6.090	-1.629	-2.064
		5%	-0.487	-0.203	-0.516	6.881	-1.046	-1.395
		95%	0.500	0.324	0.427	14.810	0.926	0.877
		99%	1.156	0.817	1.036	16.025	1.757	2.034

Table 2 continued

384	Transport equipment	Mean	0.044	0.034	0.007	10.547	-0.004	0.093
		Standard Deviation	(0.736)	(0.279)	(0.701)	(2.507)	(0.828)	(0.745)
		Median	0.037	0.000	0.009	10.741	-0.023	0.075
		Min	-3.039	-1.493	-2.463	1.060	-5.116	-2.147
		Max	7.733	1.723	7.907	16.186	5.472	3.521
		1%	-2.081	-0.865	-1.914	3.094	-2.071	-1.473
		5%	-0.648	-0.216	-0.834	6.281	-1.153	-1.118
		95%	0.622	0.457	0.663	14.132	1.089	1.349
		99%	1.998	1.136	2.005	15.820	1.935	1.952
385	Professional & scientific equipment	Mean	0.059	0.034	0.023	8.241	0.017	NA
		Standard Deviation	(0.707)	(0.392)	(0.726)	(2.305)	(1.084)	NA
		Median	0.048	0.000	0.016	8.263	0.074	NA
		Min	-3.039	-1.874	-3.374	2.150	-4.419	NA
		Max	7.246	3.258	7.429	13.923	3.644	NA
		1%	-2.479	-1.065	-2.340	2.332	-3.237	NA
		5%	-0.657	-0.379	-0.968	4.110	-1.707	NA
		95%	0.895	0.375	0.887	11.727	1.675	NA
		99%	1.666	1.946	1.781	12.704	3.114	NA
390	Other manufactured products	Mean	0.049	0.022	0.023	8.507	0.128	NA
		Standard Deviation	(0.551)	(0.510)	(0.560)	(1.982)	(1.049)	NA
		Median	0.022	0.007	0.015	8.490	0.066	NA
		Min	-4.245	-4.797	-3.902	0.727	-4.462	NA
		Max	4.303	3.762	3.600	13.415	5.213	NA
		1%	-1.650	-1.895	-1.853	2.978	-2.546	NA
		5%	-0.397	-0.221	-0.606	5.203	-1.494	NA
		95%	0.638	0.435	0.668	12.157	1.962	NA
		99%	1.730	1.643	1.797	12.581	3.038	NA
	All Industries	Mean	0.036	0.020	0.013	9.989	0.007	0.065
		Standard Deviation	(0.602)	(0.334)	(0.629)	(2.198)	(0.933)	(0.783)
		Median	0.034	0.000	0.014	10.179	0.040	0.053
		Min	-7.801	-4.797	-7.801	0.065	-7.164	-3.428
		Max	8.272	3.762	8.372	16.300	7.445	4.803
		1%	-1.695	-0.965	-1.898	4.001	-2.816	-2.219
		5%	-0.505	-0.255	-0.645	6.183	-1.393	-1.211
		95%	0.555	0.356	0.578	13.315	1.366	1.232
		99%	1.666	1.157	1.855	14.694	2.643	2.372

Table 3
Stock Market Liberalization Year and Sample Period

Liberalization year refers to the official year of policy change announced by the government. The start and end dates refer to the sample length of industrial statistics for each country.

		Industrial Statistics	
Liberalizing Countries	Liberalization Year	Start Date	End Date
Argentina	1989	1985	1994
Bangladesh	1991	1981	1992
Brazil	1991	1985	1995
Chile	1992	1981	1997
Colombia	1991	1981	1997
Cote d'Ivoire	1995	1981	1997
Egypt	1992	1981	1995
Greece	1987	1981	1992
India	1992	1981	1997
Indonesia	1989	1981	1997
Israel	1993	1987	1994
Jamaica	1991	1981	1996
Jordan	1995	1981	1997
Kenya	1995	1981	1998
Korea	1992	1981	1998
Malaysia	1988	1981	1997
Mexico	1989	1981	1995
Morocco	1988	1985	1997
Nigeria	1995	1981	1994
Pakistan	1991	1981	1996
Philippines	1991	1981	1995
Portugal	1986	1981	1995
Sri Lanka	1990	1981	1995
Thailand	1987	1982	1994
Turkey	1989	1981	1994
Venezuela	1990	1981	1996
Zimbabwe	1993	1983	1995
Non-Liberalizing Countries			
Guatemala		1981	1988
Niger		1990	1998
Sierra Leone		1981	1993
Trinidad and Tobago		1981	1995

Table 4
Country Characteristics

The table reports summary statistics for country-specific control variables. The variables are described in Appendix Table 1. Standard deviations are in parentheses.

Country	Openness to Trade	Per Capita GDP	Human Capital	Private Credit / GDP
Argentina	15.633	8.796	70.383	12.271
	(1.910)	(0.053)	(1.037)	(0.848)
Bangladesh	20.930	5.629	18.989	19.565
	(1.711)	(0.044)	(0.064)	(2.021)
Brazil	16.714	8.347	39.540	22.955
	(1.925)	(0.033)	(2.982)	(6.625)
Chile	56.991	8.108	67.744	52.502
	(6.771)	(0.255)	(6.295)	(7.768)
Colombia	31.273	7.652	50.725	28.229
	(4.683)	(0.109)	(8.981)	(7.372)
Cote d'Ivoire	69.550	6.614	22.550	30.364
	(10.922)	(0.067)	(1.171)	(7.668)
Egypt	54.052	6.828	66.432	28.396
	(8.518)	(0.074)	(8.731)	(3.211)
Greece	45.546	9.231	90.473	42.981
	(2.173)	(0.051)	(3.801)	(6.791)
Guatemala	30.644	7.169	19.462	18.062
	(0.000)	(0.000)	(0.000)	(0.000)
India	18.401	5.738	41.681	26.713
	(4.395)	(0.163)	(5.977)	(2.690)
Indonesia	49.103	6.644	43.762	29.096
	(4.340)	(0.240)	(5.923)	(14.863)
Israel	79.470	9.557	85.641	52.532
	(3.176)	(0.046)	(1.788)	(2.801)
Jamaica	109.763	7.517	64.563	27.453
	(7.161)	(0.095)	(2.115)	(3.688)
Jordan	122.619	7.429	51.608	64.658
	(16.164)	(0.109)	(4.128)	(8.167)
Kenya	64.963	5.828	24.923	30.796
	(10.357)	(0.020)	(1.981)	(1.493)
Korea	64.234	8.906	91.374	85.784
	(5.662)	(0.329)	(5.850)	(23.019)
Malaysia	140.883	8.074	55.575	84.861
	(31.634)	(0.224)	(3.531)	(21.616)
Mexico	35.371	8.070	55.179	16.604
	(7.950)	(0.038)	(1.497)	(8.310)
Morocco	56.439	7.170	37.234	30.284
	(3.318)	(0.042)	(1.180)	(12.428)
Niger	38.119	5.352	6.609	9.832
	(4.004)	(0.043)	(0.156)	(2.728)
Nigeria	55.574	5.494	30.171	15.885
	(21.537)	(0.066)	(5.916)	(3.826)
Pakistan	35.632	6.013	18.367	23.853
	(2.655)	(0.104)	(3.103)	(2.450)
Philippines	58.480	6.968	70.493	28.128
	(10.473)	(0.056)	(4.862)	(9.767)
Portugal	66.877	9.105	66.412	62.595
	(4.197)	(0.145)	(20.895)	(14.406)
Sierra Leone	53.526	5.480	17.384	3.130
	(8.027)	(0.078)	(0.238)	(0.234)
Sri Lanka	71.883	6.423	73.271	19.520
	(6.634)	(0.089)	(1.564)	(1.201)
Thailand	65.684	7.476	31.634	64.652
	(13.489)	(0.255)	(4.134)	(16.946)
Trinidad and Tobago	79.858	8.335	78.018	50.864
	(6.867)	(0.041)	(2.228)	(5.619)
Turkey	34.003	7.865	48.157	14.142
	(3.660)	(0.051)	(3.135)	(1.177)
Venezuela	49.056	8.162	30.854	37.989
	(7.861)	(0.037)	(6.318)	(16.999)
Zimbabwe	53.287	6.478	45.233	20.037
	(12.113)	(0.039)	(6.356)	(4.650)

Table 5

Disaggregating the Impact of Stock Market Liberalization Across Industries

This table presents results from industry-country fixed effects regressions of the impact of liberalization based on industry external finance dependence in Panel A and industry growth opportunities in Panel B. The variables are described in Appendix Table 1. In Panel A the Differential in Growth Rate measures how much faster an industry in the 75th percentile level of *External Dependence* grows with respect to an industry in the 25th percentile level after liberalization. Panel B measures the same for *Growth Opportunities* . Standard errors (in parentheses) are corrected for heteroskedasticity and clustered for each industry-country observation.

Panel A: Disaggregating by Industry External Finance Dependence

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.152 ***	-0.021	0.174 ***	0.280 ***	0.259 ***	0.523 ***
	(0.028)	(0.018)	(0.029)	(0.066)	(0.052)	(0.104)
Interaction (Liberalization $_t$ *	0.052 **	0.018	0.029	0.256 **	0.083	0.070
External Dependence)	(0.026)	(0.021)	(0.032)	(0.120)	(0.071)	(0.177)
Share of Industry Value	-0.047 ***	-0.003	-0.045 ***	0.060 ***	-0.008	-0.004
Added $_{t-1}$	(0.005)	(0.002)	(0.005)	(0.014)	(0.008)	(0.010)
Openness to Trade $_{t-1}$	0.002 ***	0.002 ***	0.000	0.003	0.002	0.008 ***
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.002)
Log Per Capita GDP $_{t-1}$	0.322 ***	0.128 ***	0.198 ***	3.899 ***	-0.056	-0.728 ***
	(0.065)	(0.037)	(0.075)	(0.254)	(0.118)	(0.193)
OECD Growth $_t$	0.033 ***	0.043 ***	-0.011	-0.079 ***	-0.056 ***	0.206 ***
	(0.007)	(0.005)	(0.008)	(0.013)	(0.019)	(0.037)
Human Capital $_{t-1}$	0.000	-0.002 **	0.002 *	0.009 ***	0.008 ***	0.002
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.003 ***	-0.002 ***	-0.001 **	-0.010 ***	0.000	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8030	7988	7952	5626	5264	1330
R^2	0.090	0.100	0.080	0.880	0.060	0.250
Differential in Growth Rate	0.019			0.092		

Table 5 continued

Panel B: Disaggregating by Industry Growth Opportunities

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.112 ***	-0.024	0.149 ***	0.398 ***	0.286 ***	0.463 ***
	(0.035)	(0.023)	(0.035)	(0.092)	(0.077)	(0.123)
Interaction (Liberalization $_t$ *	0.002 *	0.001	0.001	-0.003	-0.001	0.001
Global PE Ratio $_{t-1}$ *)*	(0.001)	(0.001)	(0.001)	(0.004)	(0.003)	(0.004)
Global PE Ratio $_{t-1}$	0.001	0.000	0.001	0.001	0.002	0.003
	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.003)
Share of Industry Value	-0.047 ***	-0.003 *	-0.045 ***	0.058 ***	-0.010	-0.005
Added $_{t-1}$	(0.005)	(0.002)	(0.005)	(0.014)	(0.008)	(0.012)
Openness to Trade $_{t-1}$	0.002 **	0.002 ***	0.000	0.005 **	-0.006 ***	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Log Per Capita GDP $_{t-1}$	0.337 ***	0.144 ***	0.195 **	3.984 ***	-0.045	-0.688 ***
	(0.068)	(0.037)	(0.077)	(0.247)	(0.112)	(0.188)
OECD Growth $_t$	0.033 ***	0.042 ***	-0.010	-0.082 ***	-0.054 ***	0.196 ***
	(0.007)	(0.005)	(0.008)	(0.013)	(0.019)	(0.040)
Human Capital $_{t-1}$	-0.001	-0.002 **	0.001	0.008 **	0.005 **	-0.001
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.004 ***	-0.002 ***	-0.002 **	-0.011 ***	-0.002	-0.003
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8277	8241	5810	5438	1330
R^2	0.090	0.100	0.080	0.880	0.070	0.250
Differential in Growth Rate	0.018					

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.

Table 6
Capital Allocative Efficiency and the Impact of Stock Market Liberalization

This table presents results from industry-country fixed effects regressions of the impact of liberalization based on the allocative efficiency of capital at the country level and industry external finance dependence in Panel A and industry growth opportunities in Panel B. The variables are described in Appendix Table 1. In Panel A the Differential in Growth Rate measures how much faster an industry in the 75th percentile level of *External Dependence* grows with respect to an industry in the 25th percentile level, following liberalization, in countries that allocate capital more efficiently. Panel B measures the same for *Growth Opportunities.* Standard errors (in parentheses) are corrected for heteroskedasticity and clustered for each industry-country observation.

Panel A: Disaggregating by Industry External Finance Dependence

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.151 ***	-0.022	0.174 ***	0.283 ***	0.238 ***	0.484 ***
	(0.028)	(0.019)	(0.029)	(0.066)	(0.054)	(0.108)
Interaction (Liberalization $_t$ *	0.018	-0.012	0.032	0.280 **	0.073	0.068
External Dependence)	(0.033)	(0.021)	(0.037)	(0.137)	(0.069)	(0.332)
Interaction (Liberalization $_t$ * *External*	0.095 **	0.084 **	-0.010	-0.088	0.037	-0.074
*Dependence *Allocative Efficiency)*	(0.044)	(0.037)	(0.051)	(0.185)	(0.176)	(0.346)
Share of Industry Value Added $_{t-1}$	-0.047 ***	-0.003 *	-0.045 ***	0.060 ***	-0.008	-0.005
	(.005)	(.002)	(.005)	(.014)	(.008)	(.012)
Openness to Trade $_{t-1}$	0.002 **	0.002 ***	0.000	0.005 ***	-0.006 ***	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Log Per Capita GDP $_{t-1}$	0.344 ***	0.149 ***	0.198 **	3.953 ***	-0.066	-0.691 ***
	(0.070)	(0.038)	(0.079)	(0.251)	(0.118)	(0.191)
OECD Growth $_t$	0.031 ***	0.041 ***	-0.011	-0.083 ***	-0.054 ***	0.206 ***
	(0.007)	(0.005)	(0.008)	(0.012)	(0.019)	(0.038)
Human Capital $_{t-1}$	0.000	-0.002 **	0.002 *	0.009 ***	0.005 **	-0.001
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.004 ***	-0.002 ***	-0.001 **	-0.010 ***	-0.001	-0.003
	(.001)	(.001)	(.001)	(.002)	(.001)	(.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8030	7988	7952	5626	5264	1330
R^2	0.090	0.110	0.080	0.880	0.070	0.250
Differential in Growth Rate	0.034	0.030				

Table 6 continued

Panel B: Disaggregating by Industry Growth Opportunities

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.116 ***	-0.027	0.156 ***	0.398 ***	0.288 ***	0.451 ***
	(0.035)	(0.023)	(0.035) ***	(0.093)	(0.078)	(0.125)
Interaction (Liberalization $_t$ *	0.001	-0.001	0.002	-0.002	-0.001	0.000
Global PE Ratio $_{t-1}$ *)*	(0.001)	(0.001)	(0.001)	(0.004)	(0.003)	(0.004)
Global PE Ratio $_{t-1}$	0.004 ***	0.000	0.004 ***	0.001	0.001	0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.003)	(0.003)
Interaction (Global PE Ratio $_{t-1}$ *	-0.008 ***	0.000	-0.008 ***	0.001	0.005	0.001
Allocative Efficiency)	(0.003)	(0.001)	(0.003)	(0.004)	(0.005)	(0.004)
Interaction (Liberalization $_t$ *	0.002 *	0.004 ***	-0.002 *	-0.003	-0.003	0.003
Global PE Ratio $_{t-1}$ **Allocative Efficiency)*	(0.001)	(0.001)	(0.001)	(0.003)	(0.003)	(0.003)
Share of Industry Value Added $_{t-1}$	-0.047 ***	-0.003 *	-0.045 ***	0.058 ***	-0.010	-0.005
	(0.005)	(0.002)	(0.005)	(0.014)	(0.008)	(0.012)
Openness to Trade $_{t-1}$	0.002 **	0.002 ***	0.000	0.005 **	-0.006 ***	0.001
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Log Per Capita GDP $_{t-1}$	0.338 ***	0.136 ***	0.206 ***	4.021 ***	-0.015	-0.722 ***
	(0.069)	(0.038)	(0.078)	(0.251)	(0.123)	(0.188)
OECD Growth $_t$	0.031 ***	0.042 ***	-0.011	-0.082 ***	-0.054 ***	0.197 ***
	(0.007)	(0.005)	(0.008)	(0.013)	(0.020)	(0.041)
Human Capital $_{t-1}$	-0.001	-0.001	0.001	0.007 **	0.005 **	0.000
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.004 ***	-0.002 ***	-0.001 *	-0.010 ***	-0.002	-0.003
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8277	8241	5810	5438	1330
R^2	0.090	0.110	0.090	0.880	0.070	0.250
Differential in Growth Rate	0.017	0.034	-0.017			

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.

Table 7
Disaggregating the Impact of Stock Market Liberalization based on Industry Concentration

This table presents results from industry-country fixed effects regressions of the impact of liberalization on concentrated industries. The variables are described in Appendix Table 1. The Differential in Growth Rate measures how much faster an industry in the 75th percentile level of *Concentration* grows with respect to an industry in the 25th percentile level, following liberalization. Standard errors (in parentheses) are corrected for heteroskedasticity and clustered for each industry-country observation.

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.190 ***	-0.007	0.196 ***	0.345 ***	0.284 ***	0.499 ***
	(0.035)	(0.025)	(0.039)	(0.117)	(0.076)	(0.147)
Interaction (Liberalization $_t$ * *Concentration)*	-0.001 *	0.000	-0.001	0.000	-0.001	0.000
	(0.000)	(0.001)	(0.001)	(0.003)	(0.001)	(0.003)
Share of Industry Value Added $_{t-1}$	-0.046 ***	-0.002	-0.043 ***	0.052 ***	-0.008	-0.004
	(0.005)	(0.002)	(0.005)	(0.014)	(0.008)	(0.011)
Openness to Trade $_{t-1}$	0.002 **	0.002 ***	0.000	0.005 **	-0.006 **	0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Log Per Capita GDP $_{t-1}$	0.365 ***	0.169 ***	0.195 **	4.029 ***	0.031	-0.775 ***
	(0.075)	(0.039)	(0.082)	(0.278)	(0.124)	(0.186)
OECD Growth $_t$	0.035 ***	0.041 ***	-0.007	-0.082 ***	-0.064 ***	0.207 ***
	(0.008)	(0.006)	(0.008)	(0.013)	(0.019)	(0.038)
Human Capital $_{t-1}$	0.000	-0.002 **	0.002 *	0.006 *	0.005 **	0.000
	(0.001)	(0.001)	(0.001)	(0.004)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.004 ***	-0.002 ***	-0.002 **	-0.012 ***	-0.003 *	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	6917	6882	6859	4826	4520	1251
R^2	0.090	0.100	0.090	0.880	0.070	0.220
Differential in Growth Rate	0.031					

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.

Table 8
Privatization and Stock Market Liberalization

This table presents results from industry-country fixed effects regressions of the impact of liberalization on industries that privatize government-owned firms. The variables are described in Appendix Table 1. Standard errors (in parentheses) are corrected for heteroskedasticity and clustered for each industry-country observation.

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.142 ***	-0.022	0.164 ***	0.327 ***	0.267 ***	0.526 ***
	(0.027)	(0.017)	(0.027)	(0.056)	(0.052)	(0.103)
Interaction (Liberalization $_t$ *	0.416 ***	0.156 ***	0.271	0.045	-0.356 **	-0.303
Privatization $_t$*)*	(0.154)	(0.039)	(0.170)	(0.185)	(0.157)	(0.191)
Privatization $_t$	-0.419 ***	-0.105 ***	-0.324 *	0.220	0.358 **	0.344 **
	(0.158)	(0.038)	(0.174)	(0.177)	(0.152)	(0.169)
Share of Industry Value	-0.047 ***	-0.003 *	-0.044 ***	0.058 ***	-0.009	-0.006
Added $_{t-1}$	(0.005)	(0.002)	(0.005)	(0.014)	(0.008)	(0.011)
Openness to Trade $_{t-1}$	0.002 ***	0.002 ***	0.000	0.004 **	-0.006 ***	0.000
	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
Log Per Capita GDP $_{t-1}$	0.340 ***	0.141 ***	0.202 ***	3.966 ***	-0.047	-0.689 ***
	(0.068)	(0.037)	(0.076)	(0.243)	(0.112)	(0.201)
OECD Growth $_t$	0.035 ***	0.042 ***	-0.007	-0.081 ***	-0.051 ***	0.203 ***
	(0.007)	(0.005)	(0.008)	(0.012)	(0.019)	(0.038)
Human Capital $_{t-1}$	-0.001	-0.002 **	0.001	0.008 **	0.005 **	-0.001
	(0.001)	(0.001)	(0.001)	(0.003)	(0.002)	(0.006)
Private Credit/GDP $_{t-1}$	-0.004 ***	-0.002 ***	-0.002 **	-0.010 ***	-0.001	-0.002
	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.003)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8277	8241	5810	5438	1330
R^2	0.090	0.110	0.080	0.880	0.070	0.250

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.

Table 9
Additional Robustness Checks

This table presents robustness checks of the industry-country fixed effects regressions. Panel A controls for the institutional environment by including creditor rights; Panel B controls for contemporaneous macroeconomic stabilization programs; Panel C considers the impact of liberalization on industries that are more likely to be dominated by small firms; and Panel D uses an alternative measure of industry growth opportunities. The variables are described in Appendix Table 1. Standard errors (in parentheses) are corrected for heteroskedasticity and clustered for each industry-country observation.

Panel A: Accounting for Institutional Environment

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.171 ***	-0.049 *	0.215 ***	0.571 ***	0.423 ***	0.421 ***
	(0.036)	(0.025)	(0.036)	(0.084)	(0.067)	(0.130)
Interaction (Liberalization $_t$ *	-0.006	0.013 **	-0.017 *	-0.131 ***	-0.096 ***	0.061
Creditor Rights)	(0.008)	(0.007)	(0.009)	(0.034)	(0.026)	(0.038)
Creditor Rights	0.068 ***	0.044 ***	0.019	0.151	0.001	0.247 **
	(0.026)	(0.013)	(0.028)	(0.107)	(0.047)	(0.108)
Interaction (Liberalization $_t$ *	0.406 **	0.120 ***	0.302	0.111	0.151	-0.330 **
Privatization $_t$*)*	(0.197)	(0.031)	(0.205)	(0.132)	(0.154)	(0.165)
Privatization $_t$	-0.387 **	-0.048 **	-0.356 *	0.154	-0.024	0.232 *
	(0.197)	(0.019)	(0.203)	(0.112)	(0.129)	(0.132)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8172	8133	8099	5694	5340	1330
R^2	0.090	0.100	0.080	0.880	0.070	0.250

Panel B: Accounting for Contemporaneous Economic Reforms

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.143 ***	-0.026	0.172 ***	0.274 ***	0.237 ***	0.521 ***
	(0.028)	(0.019)	(0.029)	(0.066)	(0.054)	(0.109)
Interaction (Liberalization $_t$ *	0.054 **	0.019	0.030	0.254 **	0.082	0.015
External Dependence)	(0.026)	(0.021)	(0.032)	(0.121)	(0.071)	(0.170)
Interaction (Liberalization $_t$ *	0.316 *	0.130 ***	0.198	0.042	-0.136	-0.359 **
Privatization $_t$*)*	(0.162)	(0.033)	(0.169)	(0.267)	(0.329)	(0.165)
Privatization $_t$	-0.300 *	-0.058 ***	-0.256	0.204	0.256	0.261 **
	(0.160)	(0.020)	(0.166)	(0.257)	(0.320)	(0.127)
Stabilization $_t$	-0.148 ***	0.002	-0.152 ***	0.173 **	-0.045	-0.193 *
	(0.035)	(0.024)	(0.037)	(0.078)	(0.068)	(0.110)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8030	7988	7952	5626	5264	1330
R^2	0.090	0.110	0.080	0.880	0.070	0.250

Table 9 continued

Panel C: Accounting for Firm Size

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added		Growth in Number of Establishments		Growth in Establishment Size	
Liberalization $_t$	0.135 ***	0.132 ***	-0.022	-0.020	0.159 ***	0.154 ***
	(0.029)	(0.028)	(0.020)	(0.018)	(0.031)	(0.029)
Interaction (Liberalization $_t$ *	0.002 *	0.003 **	0.000	0.000	0.002	0.003
Firm Size)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.002)
Interaction (Liberalization $_t$ *	0.049 *		0.018		0.026	
External Dependence)	(0.026)		(0.020)		(0.031)	
Interaction (Liberalization $_t$ *		0.324 **		0.128 ***		0.209
Privatization $_t$*)*		(0.160)		(0.032)		(0.167)
Privatization $_t$		-0.305 *		-0.057 ***		-0.261
		(0.158)		(0.020)		(0.163)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8030	8320	7988	8277	7952	8241
R^2	0.090	0.090	0.100	0.100	0.080	0.080

	(1)	(2)	(3)	(4)	(5)	(6)
	(Log) Investment		Growth in Investment/ Establishment		Growth in Average Market Capitalization	
Liberalization $_t$	0.321 ***	0.344 ***	0.192 ***	0.210 ***	0.494 ***	0.524 ***
	-0.0861	(0.078)	(0.061)	(0.060)	(0.113)	(0.111)
Interaction (Liberalization $_t$ *	-0.0055	-0.003	0.007	0.007	-0.002	-0.002
Firm Size)	-0.0074	(0.007)	(0.004)	(0.004)	(0.009)	(0.009)
Interaction (Liberalization $_t$ *	0.2632 **		0.075		0.026	
External Dependence i)	-0.1192		(0.072)		(0.172)	
Interaction (Liberalization $_t$ *		0.0409		-0.128		-0.345 **
Privatization $_t$*)*		-0.2685		(0.329)		(0.162)
Privatization $_t$		0.2026		0.250		0.251 **
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	5626	5810	5264	5438	1330	1330
R^2	0.88	0.880	0.070	0.070	0.250	0.250

Table 9 continued

Panel D: Using an Alternative Growth Opportunity Measure

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added		Growth in Number of Establishments		Growth in Establishment Size	
Liberalization $_t$	0.164 ***	0.158 ***	-0.025	-0.034 *	0.189 ***	0.193 ***
	(0.031)	(0.032)	(0.019)	(0.019)	(0.031)	(0.032)
Interaction (Liberalization $_t$ *	0.013	-0.003	0.051	0.050	-0.036	-0.049
Sales Growth $_{t-1}$ *)*	(0.065)	(0.065)	(0.048)	(0.050)	(0.078)	(0.079)
Sales Growth $_{t-1}$	0.028	0.053	-0.101 **	-0.122 ***	0.133 *	0.177 **
	(0.061)	(0.068)	(0.042)	(0.042)	(0.069)	(0.078)
Interaction (Liberalization $_t$ *		0.328		0.367 ***		-0.117
Sales Growth $_{t-1}$ **Allocative Efficiency)*		(0.214)		(0.096)		(0.233)
Interaction (Sales Growth $_{t-1}$ *		-0.037		0.039		-0.073
Allocative Efficiency)		(0.068)		(0.051)		(0.080)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8146	8126	8107	8087	8073	8053
R^2	0.090	0.090	0.100	0.110	0.080	0.090
	(Log) Investment		Growth in Investment/ Establishment		Growth in Average Market Capitalization	
Liberalization $_t$	0.364 ***	0.364 ***	0.249 ***	0.240 ***	0.456 ***	0.465 ***
	(0.062)	(0.064)	(0.059)	(0.058)	(0.107)	(0.110)
Interaction (Liberalization $_t$ *	-0.234	-0.232	0.150	0.168	0.370	0.335
Sales Growth $_{t-1}$ *)*	(0.166)	(0.165)	(0.189)	(0.190)	(0.263)	(0.263)
Sales Growth $_{t-1}$	0.134	0.146	0.107	0.123	0.187	0.389
	(0.116)	(0.131)	(0.133)	(0.146)	(0.178)	(0.262)
Interaction (Liberalization $_t$ *		-0.194		-0.186		0.053
Sales Growth $_{t-1}$ **Allocative Efficiency)*		(0.460)		(0.498)		(0.572)
Interaction (Sales Growtho $_{t-1}$ *		-0.031		-0.074		-0.310
Allocative Efficiency)		(0.157)		(0.170)		(0.307)
Industry-Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	5677	5662	5324	5310	1330	1330
R^2	0.880	0.880	0.070	0.070	0.250	0.250

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.

Appendix Table 1: Variable Definitions and Data Sources

Industry Variables	**Definition**	**Source**
External Dependence	Industry median of difference between capital expenditures and cash flow from operations, divided by capital expenditures in in each 3-digit ISIC industry in the United States over 1980-1989.	Compustat and Rajan and Zingales (1998)
Global PE Ratio	Annual global price earnings ratio between 1980 and 1997 for 3-digit ISIC industries.	Bekaert, Harvey, Lundblad, and Siegel (2005) and Datastream
Sales Growth	Annual industry median of real sales growth for each year between 1981 and 1998 in in each 3-digit ISIC industry in the United States.	Compustat
Growth in Real Value Added	Annual change in real value added in each ISIC industry in each country.	Industrial Statistics Database, *UNIDO*
Growth in Number of Establishments	Annual change in the number of establishments in each ISIC industry in each country.	Same as above
Growth in Establishment Size	Annual change in ratio of real value added to the number of establishments in each ISIC industry in each country.	Same as above
Investment	Annual fixed capital formation in each ISIC industry in each country.	Same as above
Growth in Investment/Establishment	Annual change in *Investment* divided by the number of establishments in each 3-digit ISIC industry in each country.	Same as above
Growth in Average Market Capitalization	Annual change in the total market capitalization of all listed firms divided by the number of establishments in each ISIC industry in each country.	S&P Emerging Markets Database
Concentration	Proportion of output produced by the largest four firms in each 3-digit ISIC industry in the United States.	1992 United States Economic Census
Firm Size	Share of employment in firms with less than 20 employees in each 3-digit ISIC industry in the United States.	Same as above
Privatization	Annual industry-country variable equal to one including and after the year in which a government-owned firm in an industry and country is sold to private owners.	World Bank Privatization Transactions Database (1989-1998); news sources; government reports.
Share in Industry Value Added	Ratio of value added in each industry to total value added of all industries in a country.	Industrial Statistics Database, *UNIDO*
Country Variables	**Definition**	**Source**
Country Indicators	Annual ratio of export and imports to GDP; Annual per capita real GDP; Annual ratio of secondary school enrollment to total enrollment; Annual ratio of private credit to GDP.	World Development Indicators and Beck, Levine, Loayza (2000) for Private Credit
Liberalization	Variable equal to one in all years including and after a stock market liberalization, which is defined as the year of a formal regulatory change after which foreign investors officially have the opportunity to invest in domestic equity securities.	Kim and Singal (1989); Bekaert and Harvey (2000); Bekaert, Harvey, and Lundblad (2002b); IFC.
Allocative Efficiency	Variable equal to one if the investment-value added elasticity measure of a country is above the 75th percentile across all countries, indicating a country that allocates capital more efficiently.	Industrial Statistics Database, *UNIDO*
Stabilization	Variable equal to one for the years in which a country entered into a stand-by agreement with the International Monetary Fund.	Henry (2000b) and Hutchison (2001)
Rule of Law	Rule of Law is an index from 0 to 10 measuring the law and order situation.	La Porta et al. (1997) and (1999)
Creditor Rights	An annual index aggregating creditor rights The index ranges from 0 (weak creditor rights) to 4 (strong creditor rights) and is constructed as of January for every year from 1978 to 2003.	La Porta et al. (1998)

Appendix Table 2

The Average Impact of Stock Market Liberalization: Median Regression

This table presents results from median regressions of the impact of liberalization. Standard errors are in parentheses. The variables are described in Appendix Table 1.

	(1)	(2)	(3)	(4)	(5)	(6)
	Growth in Real Value Added	Growth in Number of Establishments	Growth in Establishment Size	(Log) Investment	Growth in Investment/ Establishment	Growth in Average Market Capitalization
Liberalization $_t$	0.039 ***	-0.002	0.050 ***	0.233 ***	0.232 ***	0.382 ***
	(0.009)	(0.003)	(0.011)	(0.055)	(0.034)	(0.127)
Share of Industry Value Added $_{t-1}$	-0.003 ***	0.000	-0.004 ***	0.162 ***	0.000	-0.001
	(0.001)	(0.000)	(0.001)	(0.004)	(0.003)	(0.007)
Openness to Trade $_{t-1}$	0.001 ***	0.001 ***	-0.001	0.005 ***	-0.002 **	0.001
	(0.000)	(0.000)	(0.000)	(0.002)	(0.001)	(0.004)
Log Per Capita GDP $_{t-1}$	0.029	0.023 **	0.031	3.692 ***	-0.053	-0.347
	(0.026)	(0.009)	(0.031)	(0.161)	(0.097)	(0.338)
OECD Growth $_t$	0.019 ***	0.003 **	0.003	-0.091 ***	0.017	0.181 ***
	(0.004)	(0.001)	(0.004)	(0.020)	(0.012)	(0.064)
Human Capital $_{t-1}$	0.001 *	0.001 ***	0.000	0.006 **	0.002	0.002
	(0.001)	(0.000)	(0.001)	(0.003)	(0.002)	(0.008)
Private Credit/GDP $_{t-1}$	-0.001 ***	0.000	-0.001 **	-0.008 ***	-0.002	-0.004
	(0.000)	(0.000)	(0.000)	(0.002)	(0.001)	(0.004)
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of Observations	8320	8277	8241	5810	5438	1330

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels,

Appendix Table 3

Table 3A reports correlations between liberalization, industry growth, and the instrumental variables. The correlations with liberalization are coefficients from univariate cross-sectional probit regressions with the error term clustered for each industry-country observation, while the correlations with value added growth are obtained from pooled regressions with the error term clustered for each industry-country observation. Table 3B reports the first stage results from the IV regression in Table 1D with *Growth in Real Value Added* as the dependent variable. P-values and standard errors are in parentheses. Table 3C reports correlations between external dependence, growth opportunities, and industrial growth. The correlations for the time-varying variables are obtained from a panel data regression with industry-country fixed effects and year dummies and with the error term clustered for each industry-country observation. The correlations for the constant variables are obtained from pooled regressions with the error term clustered for each industry-country observation.

Appendix Table 3A: Pairwise Correlation between Liberalization, Growth, and Instrumental Variables

	Liberalization	Growth in Real Value Added
Pre-Liberalization Per Capita GDP	0.165 ***	0.001
	(0.021)	(0.005)
Pre-Liberalization Trade/GDP	-0.002 ***	0.000
	(0.001)	(0.000)
Rule of Law	0.098 ***	0.001
	(0.010)	(0.002)

Appendix Table 3B: First Stage Results of IV Regressions

This table presents the results from the first stage of the instrumental variable regressions in Table 1D with *Growth in Real Value Added* as the dependent variable. The first stage regressions include all the control variables from the second stage which we do not report to save space.

Rule of Law	0.021 ***
	(0.004)
Pre-Liberalization Trade/GDP	-0.002 ***
	(0.001)
Pre-Liberalization Per Capita GDP	-0.483 ***
	(0.039)
R^2	0.657

Appendix Table 3C: Pairwise Correlation between Growth, External Finance Dependence, and Growth Opportunities

	Growth in Real Value Added
External Dependence	0.023
	(0.011)
Global PE Ratio $_t$	0.001 *
	(0.001)
Sales Growth in 1980s	0.159
	(0.120)
Sales Growth $_t$	0.329 ***
	(0.125)

Notes: ***, **, and * denote statistical significance at the .01, .05, and .1 levels, respectively.