



THE WILLIAM DAVIDSON INSTITUTE  
AT THE UNIVERSITY OF MICHIGAN BUSINESS SCHOOL

*Financial Dependence, Stock Market  
Liberalizations, and Growth*

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William Davidson Working Paper Number 562  
May 2003

# Financial Dependence, Stock Market Liberalizations, and Growth

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January 2002

## Abstract

Stock market liberalizations provide a natural experiment to test for the causal relation between financial development and economic growth. We test this relation by investigating whether liberalizations facilitate growth through the particular mechanism of reducing capital market imperfections that drive a wedge between the external and internal cost of capital to firms. Using panel data on a large sample of emerging markets, we find no evidence of a uniform shift across all sectors in average industry growth following liberalization. Instead, consistent with the hypothesis that liberalizations lower the incremental cost of external capital, it appears that industries that depend more on external finance experience significantly higher growth following liberalization. We also find that growth occurs through the creation of new establishments, which is more likely to require external funds, rather than through an expansion in the average size of existing establishments, which firms are more likely to finance with internal cash. These results are robust to alternative hypotheses, country and industry specific controls, other economic reforms, world business cycle effects, and contemporaneous macroeconomic shocks.

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## 1 Introduction

Recent evidence from the economic growth and finance literature suggests that a well-developed financial sector is critical for economic growth (for a survey see Levine (1997)). However, most studies in the literature find it difficult to establish a causal link between financial development and economic growth because of the potentially endogenous determination of the two. Our paper addresses this endogeneity issue in two ways. First, we use a natural experiment, stock market liberalizations, to measure financial development. Second, we investigate a particular microeconomic channel through which financial development facilitates growth. Specifically, we investigate if stock market liberalizations facilitate economic growth by reducing the wedge between the cost of internal and external capital, so that industries that depend more on external financing for their capital expenditures are likely to grow faster on average following liberalization.<sup>1</sup>

The literature linking economic growth and financial development is extensive. In his seminal work, Goldsmith (1969) found evidence of a positive relationship between economic growth and financial development. A number of recent studies have attempted to also establish causality. In one of the first broad cross-sectional studies, King and Levine (1993) show that the initial level of financial development can predict future economic growth. Also using a cross-sectional framework, Levine and Zervos (1997) show that the development of both banks and financial markets are important for economic growth. Rather than examining the broad correlation between finance and growth, Rajan and Zingales (1998) make a significant contribution to the causality issue by examining a mechanism by which financial development can affect economic growth. Based on the theoretical argument that well developed financial markets reduce the cost of external finance to firms, they

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<sup>1</sup>The Modigliani and Miller theorem (1958) states that a firm's capital structure is irrelevant to its value if capital markets are perfect, so internal and external financing are perfect substitutes. With imperfect capital markets, however, the costs of internal and external finance may diverge because of information asymmetries (Myers and Majluf 1984), costly monitoring (Townsend 1979), and contract enforcement and incentive problems (Jensen and Meckling 1976). The less developed a financial market, the larger the wedge between the internal and external cost of capital. Recent empirical firm-level studies also show that financial development reduces financing constraints for firms. Demirgüç-Kunt and Maksimovic (1998), Love (2001), and Laeven (2002) provide cross-country evidence that firms tend to be less financially constrained in countries with more developed financial markets. Forbes (2002) finds that Chilean capital controls make it more difficult for small firms to obtain external financing. Based on the existing theory and empirical evidence we take the hypothesis that financial development reduces external financing constraints as given, and investigate the real growth effect of this mechanism.

investigate whether industries that rely more on external finance for their investment needs are likely to grow faster in economies with more developed financial markets. They argue that since differences in external dependence between industries arise for technological reasons, these differences are likely to persist across countries.<sup>2</sup> Assuming that the well-developed capital markets of the U.S. allow firms to achieve the desired extent of external dependence, they use data on listed U.S. firms to construct industry measures of external finance dependence.<sup>3</sup> Using the ratio of domestic credit plus stock market capitalization to GDP and accounting standards in a country as measures of financial development, results from their cross-sectional analysis suggest that the *ex ante* development of financial markets facilitates the *ex post* growth of sectors dependent on external finance.

In this paper, we extend Rajan and Zingales' (1998) methodology in two ways: first, we focus on a natural experiment that addresses the potential endogeneity of financial development; second, we use panel data to explore both cross-sectional and time series variation in financial development and economic growth. Stock market liberalizations are a political decision by the government to allow foreigners to invest in domestic stock markets, hence the literature on financial development treats liberalization as an exogenous event (see Kim and Singal (1989), Bekaert and Harvey (2000), Henry (2000a), (2000b), and Bekaert, Harvey, and Lundblad (2002a),(2002b)). We use differences in industry growth rates across temporal shocks of stock market liberalization and across industries with different degrees of external dependence to investigate the external finance mechanism described in Rajan and Zingales (1998).

Using data on a sample of 19 emerging economies that liberalized their stock markets between 1986 and 1995, we find no evidence of a uniform shift across all sectors in average industrial growth rates following liberalization. Instead, we find that industries that depend more on external finance grow significantly faster on average following liberalization. Hence, our results suggest that liberalizations facilitate economic growth not simply by reducing the overall cost of capital in the economy, but by reducing market imperfections that drive a wedge between the internal and external cost

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<sup>2</sup>For example, a sector like pharmaceuticals, with cash flows coming in at a later stage of development after huge research and development expenditures have been made upfront, will have a greater demand for external financing than sectors such as food processing.

<sup>3</sup>The external dependence measures developed by Rajan and Zingales (1998) have been widely used in the literature. Recent applications include Ceterolli and Gambera (2001), Laeven, Klingebiel, and Kroszner (2002), Claessens and Laeven (2002), and Fisman and Love (2002b).

of capital. Consider the industries in the 20<sup>th</sup> percentile (Apparel) and the 80<sup>th</sup> percentile (Machinery, except electrical) of external finance dependence with external dependence measures equal to .029 and .445, respectively. Our results suggest that in the first three years following a stock market liberalization, the real value added growth rate in these two industries increases by .18 and 2.8 percent, respectively on average.<sup>4</sup> For comparison, the average growth rate of real value added across all industries in our sample is 4.67 percent, while the growth rate of the industry at the median level of external dependence is 3.99 percent.<sup>5</sup> These results are robust to several alternative measures of external dependence among U.S. firms in the same industry. Decomposing the impact of liberalization further, we find that growth occurs primarily through the creation of new establishments rather than through an expansion in the average size of existing establishments. This is consistent with the hypothesis that companies are more likely to use external funds to set up new establishments and internal funds to expand the size of existing establishments.

To control for potential omitted variable bias, we include several time-varying country and industry specific variables in the estimations. In particular, all the specifications control for industry and country size, institutional environment, human capital, availability of credit in the economy, world business cycle effects, and contemporaneous economic shocks. The results are also robust to the use of a larger sample of 31 countries that include an additional four countries that do not liberalize and eight countries that liberalize during the sample period.

We also investigate alternative explanations for the observed relationship between stock market liberalization and growth. One potential explanation is that what we observe is faster growth following liberalization in more capital intensive industries due to a lower overall cost of capital, rather than in industries that depend more on external finance. We control for relative investment intensity to investigate whether it is the lower overall cost of capital or the lower incremental cost of external capital following liberalization that facilitates industrial growth. Another hypothesis is that other economic reforms that often accompany liberalization may have a confounding impact on industrial growth. To isolate the effects of liberalization, we control for potential changes in trade policy, macroeconomic stabilization programs, and the effect of privatization at the industry level.

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<sup>4</sup>These numbers are from the estimated coefficient of the interaction term reported in column 1 of Table 5B.

<sup>5</sup>These are the average growth rates for the 19 country sample.

Our paper is closely related to two strands of literature in the area of financial development and economic growth. The first strand investigates the impact of financial market deregulation on economic growth.<sup>6</sup> On this topic, Bekaert, Harvey, and Lundblad (2002a) study the effects of stock market liberalization on GDP growth rates. They find that liberalizations on average lead to a one percent increase in per capita GDP growth over a five-year period. Using proxy measures for costs of capital (country credit risk ratings) and financial constraints (enforcement of insider trading laws), they find evidence that lower capital costs and reduced financial constraints increase economic growth on average. Jayaratne and Strahan (1996) also use a natural experiment to investigate the causal link between finance and growth. Using bank branch deregulation at the state level in the United States, they find evidence that deregulation has a positive impact on growth in per capita state income and output. Our approach differs from these studies since, rather than examining the aggregate correlation between finance and economic growth, we investigate a microeconomic channel by which financial development can affect economic growth at the industry level.

The second strand of literature studies the relationship between financial development and industry growth. Ceterolli and Gambera (2001) use the external dependence measures developed by Rajan and Zingales (1998) to investigate the relationship between banking market structure and industrial growth. They find that higher bank concentration promotes the growth of more externally dependent industries, but has a negative impact on overall industrial growth. Also using these external dependence measures, Laeven, Klingebiel, and Kroszner (2002) find evidence that externally dependent industries contract more following a financial crisis in more developed financial markets. Following Rajan and Zingales (1998), Claessens and Laeven (2002) use U.S. data to construct industry measures of tangible and intangible asset allocation, and find that sectors that invest more in intangible assets are likely to grow faster in countries with more secure property rights. Finally, Fisman and Love (2002b) use an industry level “propensity for trade credit” measure constructed from U.S. data to find that industries with a greater reliance on trade credit are likely to grow faster in countries with weaker financial institutions. All these studies use a cross-sectional approach. Our framework differs by incorporating both the

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<sup>6</sup>There are also a number of studies that look at the effect of stock market liberalization on stock prices, volatility, and investment. Kim and Singal (1989) find that stock returns increase immediately after liberalization without an increase in volatility. Henry (2000a) and (2000b) finds an increase in stock price and an investment boom after liberalization. Chari and Henry (2001) find an increase in Tobin’s Q after liberalization.

cross-sectional effect (the growth of liberalized versus closed economies since liberalizations occur at different times in the sample), and the temporal effect (the growth of liberalizing economies before and after liberalization) of stock market liberalizations.

The remainder of the paper is organized as follows. In Section 2 we describe the data. Section 3 describes the empirical strategy and the results from the baseline growth regression. In Section 4 we decompose further the sources of the growth impact of liberalization, and also investigate the short-run and long-run impact on industry growth. In Section 5 we consider alternative hypotheses and describe additional robustness checks. Section 6 concludes the paper.

## 2 Data

### 2.1 Data on Industries

#### 2.1.1 External Dependence Measures

Data on the actual use of external financing at the country and industry level is typically not available for emerging markets. Moreover, the use of external financing would be endogenous to the availability of external capital in the country. To identify the dependence of an industry on external finance, we use the measures constructed by Rajan and Zingales (1998). Based on the argument that there are technological reasons for differences in industries' dependence on external finance, implying these differences are likely to persist across countries, Rajan and Zingales (1998) construct measures of external finance dependence using Compustat data on listed U.S. firms. Since U.S. capital markets are relatively frictionless, these measures 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 have liked to raise if their financial markets had been as developed. This does not imply that the same sectors in two countries are required to have the exact same optimal level of external dependence. Instead we assume that the rank order of external dependence across sectors is similar across countries.

More specifically, a firm's dependence on external finance is defined as the difference between capital expenditures and cash flow from operations, divided by capital expenditures; its dependence on equity finance is defined as the ratio of the net amount of equity issues to capital expenditures; and

its investment intensity is defined as the ratio of capital expenditures to net property, plant, and equipment. To construct dependence on external finance in the 1980s for each U.S. firm, the use of external finance is aggregated over the 1980's and divided by the sum of capital expenditures in the 1980s. We use the median value of external dependence for U.S. firms belonging to the same industry. Rajan and Zingales (1998) construct these measures for a mixture of three and four digit ISIC level manufacturing industries. Since the breakdown between the two ISIC levels is somewhat arbitrary, we only use the external dependence measures for three digit ISIC sectors. We also use external dependence in U.S. firms belonging to the same industry measured over the 1970-1980 period, external dependence among young firms (less than ten years since listing) and older firms (more than ten years since listing). In Table 1 we report the median value of average external dependence among U.S. firms in the same industry for each ISIC sector, and for each of the measures of external dependence. We also report the median value of average investment intensity and cash flow intensity between 1980-1990 in U.S. firms belonging to the same industry.

### 2.1.2 Data on Industry Growth

Annual data on value added and number of establishments at the three-digit ISIC code level for each country are obtained from the *Industrial Statistics Database* (1980-1999) compiled by the United Nations Industrial Development Organization (2001). Real value added is calculated by deflating value added with the GDP deflator obtained from the World Bank's World Development Indicators.<sup>7</sup> We observe an unbalanced panel of industrial statistics between the years 1981 to 1998 for the countries in our sample.

For each country and each of the 27 ISIC industrial categories we use the annual growth rates of real value added, number of establishments, and average establishment size as the dependent variables. Average industry establishment size is defined as real value added divided by number of establishments. Growth rates are calculated as the difference in the logs of current and previous year values. In Table 1 we report the average growth rate of real value added, number of establishments, and average establishment size for each ISIC industry over the entire sample period.

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<sup>7</sup>It may be appropriate to use the producer price index (PPI) rather than the GDP deflator to deflate industrial statistics, however PPI data is not complete for the countries and years in our sample. Results using the PPI deflator on the smaller sample were substantively similar to the GDP deflator results.



## 2.2 Data on Countries

A stock market liberalization refers to the policy decision by a country's government to allow foreign investors to purchase shares in the country's stock markets. While the literature has also used other criteria in addition to the policy decree to date liberalization (see Kim and Singal (1989), Henry (2000b), and Bekaert and Harvey (2000)), we select the liberalization date based on the year of the policy change. In contrast to this official liberalization date, other measures of stock market liberalization such as when foreign investors first access a market or the first country fund is established may be endogenous to economic growth.

From the International Finance Corporation's (IFC) classification of economies we include all emerging economies that liberalized their stock markets after 1980 (using the official date of policy change) for which we observe industrial statistics. Our initial sample consists of 19 economies that liberalized their stock markets between 1986 and 1995. As a robustness check, we also use an expanded sample of 31 countries, including an additional eight liberalizing countries from Bekaert, Harvey and Lundblad (2002b), who list these liberalizations as official policy changes and describe the specific change in policy in Table 2 of their paper. The larger sample also includes four emerging markets that did not liberalize during the duration of our data.

We obtain most of the country variables from the World Bank's World Development Indicators, with the exceptions of legal origin (La Porta, Lopez de Silanes, Shleifer, and Vishny (1998)), and the ratio of private credit to GDP (Beck, Levine, and Loayza (2000)). 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. We also create a new dataset on privatization at the industry level using data from the World Bank Privatization Database which reports all privatization transactions at the firm level between 1989 and 1998. We add industry information for each firm and obtain data on pre-1989 transactions for countries that privatized prior to that year. This supplementary data is obtained from news reports and reports published by country governments.<sup>8</sup> Thus we observe annual data on privatizations undertaken in each country in a given industry during the sample period.

Table 2 reports the stock market liberalization year for the liberalizing countries and sample start and end years for all the countries. Table 3 reports the average values of openness (ratio of export and imports to GDP),

<sup>8</sup>Data on stabilization programs and privatization are available on request.

per capita real GDP, ratio of secondary school enrollment to total enrollment, ratio of total credit to private firms to GDP, and the legal origin of each country over the sample period.

### 3 The Effect of Stock Market Liberalization on Industrial Growth

#### 3.1 An Empirical Model of Growth

To investigate the hypothesis that a stock market liberalization will lead to faster growth in particular industries, we start with the following baseline specification:

$$\begin{aligned}
 Growth_{j,k,t} = & \alpha_0 + \alpha_1 Lib_{k,t} + \alpha_2 (Lib \times External\ finance\ dependence)_{j,k,t} \\
 & + \alpha_3 (Industry\ share\ of\ manufacturing)_{j,k,t-1} \\
 & + \alpha_4 Openness_{k,t} + \alpha_5 English_k \\
 & + \alpha_6 \log(Per\ capita\ GDP)_{k,t} + \alpha_7 Human\ capital_{k,t} \\
 & + \alpha_8 (Private\ credit/GDP)_{k,t} + \alpha_9 OECD\ growth_t \\
 & + \alpha_k Country\ dummies + \alpha_t + \epsilon_{j,k,t},
 \end{aligned} \tag{1}$$

where the dependent variables are the annual growth rates of real value added, number of establishments, and average establishment size of industry  $j$  in country  $k$  in year  $t$ .  $Lib$  is the liberalization dummy that is equal to one for all years including and after the year of the regulatory change and  $\alpha_t$  represents year dummies. Our approach is similar to a difference in difference approach with a control group in each year that includes those countries that have not yet liberalized.<sup>9</sup> Since all industries in a given country share the same liberalization date in addition to other country-specific characteristics, the standard assumption that the error term is random and uncorrelated across industries within each country may not be valid. Thus, in addition to including country fixed effects in the regression, we adjust the variance-covariance matrix used to calculate the standard errors in all the regressions to account for clustering.

To investigate whether stock market liberalizations facilitate economic growth by reducing the wedge between the cost of external and internal finance to firms, we interact the liberalization dummy with different measures

<sup>9</sup>The control group includes Nigeria, which liberalized in 1995 but for which industrial statistics are not available after 1994. As a robustness check we subsequently expand this sample to include 12 additional liberalizing and non-liberalizing countries.

of external dependence in the corresponding industry in the U.S.<sup>10</sup> These measures include the fraction of capital expenditures not financed with internal funds by U.S. firms between 1980-1990 (external finance dependence in 1980s), the fraction of capital expenditures not financed with internal funds by U.S. firms between 1970-1980 (external finance dependence in 1970s), and the fraction of capital expenditures financed through public offerings by U.S. firms between 1980-1990 (equity finance dependence in 1980s).

The principal variable of interest in equation (1) for our analysis is the interaction term, which asks whether the effect of liberalization on average industry growth differs across industries with different degrees of dependence on external funds. This offers a direct test of the hypothesis that liberalization facilitates economic growth by reducing the incremental cost of external capital. A positive coefficient indicates that more externally dependent industries are likely to grow faster following liberalization. Also of interest in equation (1) is the coefficient of the liberalization dummy, which tests whether there is a uniform shift in the average growth rate across sectors following stock market liberalization.

However, there is still a question as to whether even official liberalizations are truly exogenous political decisions, or whether countries liberalize in anticipation of higher growth. Bekaert, Harvey, and Lundblad (2002a) argue that endogeneity of the liberalization decision may be an issue for countries that join a free market, such as the European Union, where membership conditions require a simultaneous reduction in capital controls and improvement in economic growth prospects. We do not have such liberalizations in our sample. Moreover, we avoid this potential endogeneity by investigating whether particular industries grow faster following liberalization rather than the impact of liberalization on aggregate economic growth. As described below, we also conduct several robustness checks to determine that the liberalization effect is driving the results.

To avoid potential omitted variable bias, we include a number of country and industry specific variables in the specifications. At the industry level the external dependence measures may act as a proxy for other indus-

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<sup>10</sup>The external dependence measure does not enter the regression separately because there is no theoretical basis for why growth rates should differ according to relative external dependence at a given level of financial development. Thus, we set the coefficient of external dependence equal to zero before liberalization by not including it separately in equation (1). However, to test this assumption we enter external dependence in place of the interaction term in equation (1) and estimate this regression separately for the pre- and post-liberalization data. The results support the assumption since we find that external dependence does not affect growth using pre-liberalization data, but it has a statistically significant and positive coefficient using the post-liberalization data.

try characteristics that affect growth. For example, there may be existing cross-country differences in initial comparative advantage in certain industries that are due to factors not related to financial development. Also, industries with large market shares may have a lower growth potential than smaller industries if there is industry-specific convergence. To address this potential bias, we include each industry's share of manufacturing, which is the lagged ratio of annual real value added for each industry to total annual real value added of manufacturing in each country, in all the regressions. It may also be the case that external dependence acts as a proxy for capital intensity. In Section 5 we directly test whether relative capital intensity rather than external dependence drives the results. Lastly, we also estimate the regressions including two-digit industry dummies, but do not report these results as they are similar.

In addition to including country dummies we also include a number of country specific variables in all the regressions. We control for the effects of a potential change in trade liberalization policy by including the ratio of annual exports and imports to total GDP for each country. Since the impact of stock market liberalization may differ according to the size of the country, we include annual per capita real GDP for each country. Following the financial development and growth literature, which has found evidence of a significant impact of human capital on growth (Bekaert, Harvey and Lundblad (2002a), King and Levine (1993)), we include the ratio of annual secondary school enrollment to total school enrollment in each country. To control for potential differences in the institutional environment that can have an impact on investment behavior we include a dummy variable that is equal to one for countries that have an English legal origin (La Porta, Lopez de Silanes, Shleifer and Vishny (1998)). We also control for changes in the overall availability of credit in the economy by including the annual ratio of total credit given to private firms to GDP. Finally, we may overstate the impact of liberalization if governments are likely to 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 on industrial growth, we include the average annual economic growth rate of OECD economies and year dummies in all the regressions.

Table 4 reports the results from estimating equation (1) on the sample of 19 countries for which we have an official liberalization date, with the growth rate of real value added as the dependent variable. We observe that the estimated coefficient of the liberalization dummy is positive but not statistically significant in any of the specifications. However, the coefficient of the interaction term in the first column, external dependence in the 1980s

times liberalization, is positive and statistically significant at the five percent level.<sup>11</sup> We also find that the next period growth rate in real value added is significantly lower (at the one percent level) for industries with relatively high market shares, suggesting that there may be industry-specific convergence. Openness to international trade, per capita GDP, fraction of secondary school enrollment, and the availability of private credit do not have a statistically significant impact on industrial growth. However, countries of English legal origin experience significantly higher industrial growth (at the ten percent level). Faster growth in OECD economies on average also has a positive and statistically significant impact on industrial growth (at the one percent level).

It can be argued that U.S. firms in the 1980s are not a good basis for comparison with the emerging market firms in our sample because the latter are at a different stage of development and may not face a similar technological need for external finance. As a robustness check we use external dependence among U.S. firms in the 1970s. From the results reported in column 2, we observe that the coefficient of the interaction term is positive and statistically significant (at the ten percent level). Using another alternative measure, dependence on equity finance in the 1980s, we find in column 3 that the coefficient of the interaction term remains positive but is no longer statistically significant.<sup>12</sup>

The results in Table 4 indicate that a stock market liberalization does not result in a uniform shift across all sectors in average industry growth, suggesting that it does not facilitate growth simply by lowering the overall cost of capital in the economy. Instead, it appears that liberalizations reduce capital market imperfections that drive a wedge between the cost of internal and external capital, so that industries that need more external financing grow faster on average following liberalization. We can use the coefficient estimates in Table 4 to infer how much higher the growth rate of the industry in the 90<sup>th</sup> percentile of external dependence would be compared to the industry in the 20<sup>th</sup> percentile following stock market liberalization. The industry in the 90<sup>th</sup> percentile of external dependence in the 1980s, Electric Machinery, has an external dependence ratio of .767. The industry in the 20<sup>th</sup> percentile, Apparel, has an external dependence ratio of .029. From the

<sup>11</sup>Including industry dummies in this specification the estimated coefficient and standard error of this interaction term is .034(.015), which is statistically significant at the five percent level.

<sup>12</sup>Estimating these specifications with industry dummies, we find that the estimated coefficients of external dependence in the 1970s and equity dependence interacted with liberalization have the correct sign but are not statistically significant.

coefficient of the interaction term in column 1 we see that a stock market liberalization would increase the real value added growth rate of the Electric Machinery industry by 2.45 percent and the Apparel industry by .09 percent on average.<sup>13</sup>

## 4 Further Decomposing the Sources of Growth

### 4.1 Growth in Number and Size of Establishments

To further explore the channels through which liberalization can affect industry growth, we investigate if growth occurs primarily through the addition of new establishments to an industry or through an expansion in the size of existing firms. The creation of new establishments is more likely to require new funds, while the expansion of existing establishments can be financed with internal funds. Thus, we would expect the effect of stock market liberalization to be more pronounced for growth in the number rather than the average size of establishments.

The results reported in Table 5A suggest that this is indeed the case. From the first three columns of Table 5A we observe that a stock market liberalization does not result in a uniform shift across all sectors in the average growth rate of new establishments. Instead, it facilitates the creation of new establishments in those sectors that rely more on external financing. From the last three columns of Table 5A, with growth in average establishment size as the dependent variable, we find that the coefficient of the liberalization dummy is statistically significant (at the ten percent level), but more importantly the coefficient of the interaction term is negative and not statistically significant. Hence, it appears that stock market liberalizations, by decreasing the relative cost of external capital, primarily affect industrial growth by stimulating the growth of new establishments.<sup>14</sup>

### 4.2 Growth Dynamics

Our results thus far suggest that stock market liberalizations will result in significantly higher growth on average in industries that rely more on external financing. Next we investigate the dynamics of the liberalization effect and separate the short, medium, and long-run impact of liberalization on

<sup>13</sup>The average growth rate in real value added of the Apparel industry is .083 while that of Electric Machinery is .057 in the 19 country sample.

<sup>14</sup>In the remaining sections we do not report results using growth in average establishment size as the dependent variable.

growth in real value added. We define the first three years following liberalization as the short run, the subsequent three year period as the medium-run, and the long-run as all the years following the first six years after liberalization. Using the 1980-1990 external dependence measures in the first column of Table 5B, we observe that liberalization has a statistically significant and positive effect (at the five percent level) on industries that rely more on external finance in the first three years following the opening up of the stock market.<sup>15</sup> Using the 1970-80 measures for external dependence, the coefficient of the short-run interaction term remains positive and statistically significant (at the five percent level). There also appears to be a positive but less statistically significant average impact on growth in the long-run (at the ten percent level). Using equity dependence in the last column of Table 5B we find that none of the coefficients are statistically significant, but they are correctly signed. These results are consistent with the previous evidence that the effect of liberalization depends on the relative external dependence of an industry, and also suggest that more externally dependent industries are able to access capital and catch up relatively quickly to the rest of the economy.<sup>16</sup> We obtain similar results if we define the short-run as the first five-year period following liberalization and the long-run as the subsequent years.

## 5 Robustness Checks

### 5.1 Investment Intensity and Cost of Capital

An alternative explanation for the observed relationship between stock market liberalization and growth is that industry variation in external dependence acts as a proxy for relative capital intensity. Thus, liberalization facilitates growth in these industries by lowering the overall cost of capital in the economy rather than by decreasing the incremental cost of external funds.<sup>17</sup> While this hypothesis does not contradict our results regarding the

<sup>15</sup>Including industry dummies in the specification the estimated coefficient and standard error of this interaction term is .064 (.025), which is statistically significant at the five percent level.

<sup>16</sup>Henry (2000a) also finds an increase in the average growth rate of private investment in the three years immediately following stock market liberalization.

<sup>17</sup>Fisman and Love (2002a) and Claessens and Laeven (2002) also investigate whether external dependence acts as a proxy for relative growth opportunities. Using actual sales growth in U.S. firms interacted with financial development as a proxy for sectoral differences in growth opportunities, Fisman and Love (2002a) find that including this variable in the industry growth regression reduces the statistical significance of the coefficient of

causal effect of liberalization on industrial growth, it describes an alternative mechanism for this effect.

Rajan and Zingales (1998) argue that if investment intensity is all that matters and external and internal capital are equally costly, a stock market liberalization should not have a differential impact on industries that generate a lot of internal cash. However, if liberalization facilitates growth by reducing the wedge between the cost of internal and external funds, industries that generate more internal cash face a greater advantage before liberalization and hence should grow relatively faster *prior to* liberalization. We investigate the alternative explanation of the mechanism by which liberalization facilitates growth in two ways. First, we use Rajan and Zingales' (1998) approach and estimate the following regression:

$$\begin{aligned} Growth_{j,k,t} = & \delta_0 + \delta_1 Lib_{k,t} + \delta_2 (Lib \times Cash\ flow)_{j,k,t} \\ & + \delta_3 (Lib \times Investment\ intensity)_{j,k,t} \\ & + \delta_4 (Industry\ share\ of\ manufacturing)_{j,k,t-1} \\ & + \delta_5 C_{k,t} + \delta_k Country\ dummies + \delta_t + \eta_{j,k,t}, \end{aligned} \quad (2)$$

where  $C_{k,t}$  includes all the country specific variables described in equation (1). We reject the alternative investment intensity hypothesis if the coefficient of the interaction term between cash flow intensity and liberalization is negative and statistically significant in the growth regression. Cash flow and investment intensity measures are constructed by Rajan and Zingales (1998) using data on U.S. firms belonging to the same industry.

Second, we control for investment intensity in the original specification and investigate whether the impact of liberalization on growth continues to depend on the relative external dependence of industries. Thus, we estimate the following regression:

$$\begin{aligned} Growth_{j,k,t} = & \gamma_0 + \gamma_1 Lib_{k,t} + \gamma_2 (Lib \times External\ finance\ dependence)_{j,k,t} \\ & + \gamma_3 (Lib \times Investment\ intensity)_{j,k,t} \\ & + \gamma_4 (Industry\ share\ of\ manufacturing)_{j,k,t-1} \\ & + \gamma_5 C_{k,t} + \gamma_k Country\ dummies + \gamma_t + v_{j,k,t}. \end{aligned} \quad (3)$$

Results from estimating equation (2) with growth in real value added as the dependent variable are reported in columns 1 and 2 of Table 6A. In

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the external dependence variable. However, Claessens and Laeven (2002) argue that sales growth is an ex-post measure and propose Tobin's Q as a more forward looking measure of growth opportunities. Their results reject the growth opportunities hypothesis.



column 1 using average 1980-1990 values, cash flow intensive industries do not appear to grow differently following liberalization while more investment intensive industries grow significantly faster (at the one percent level), hence we cannot reject the investment intensity argument in this case. However, in column 2 we find support for the original hypothesis that liberalization affects economic growth by reducing the relative cost of external capital: controlling for relative investment intensity, the coefficient of the cash flow interaction term is negative and statistically significant (at the ten percent level). Estimating equation (3) with growth in real value added as the dependent variable in columns 3 and 4 of Table 6A, we do not reject the growth opportunities hypothesis in column 3. However, in column 4 we observe that growth in real value added following liberalization does not appear to depend on either relative investment intensity or relative external finance dependence although the coefficient of the external dependence interaction term is positive.

The results from estimating equations (2) and (3) with growth in number of establishments as the dependent variable are reported in columns 5 to 8 of Table 6A. The results do not support the investment intensity hypothesis in any of the specifications. In column 5 we observe that neither investment nor cash flow intensity affect the growth of new establishments following liberalization. Moreover, consistent with the hypothesis that liberalization reduces the incremental cost of external capital, cash flow rich industries grow significantly faster before liberalization (at the ten percent level) in column 6. The original hypothesis is also supported by the results reported in the last column of Table 6A where we observe that more externally dependent industries grow significantly faster on average following liberalization (at the ten percent level) while more investment intensive industries do not.

## 5.2 Other Economic Reforms

Although we control for omitted variable bias in a number of ways, we may still be overstating the impact of stock market liberalization on industrial growth if countries simultaneously implement other economic reforms. To address this issue, we control for both short-run macroeconomic stabilization programs and privatization programs undertaken by the countries in our sample during the sample period. In particular, to control for the effects of a stabilization program on industry growth we include a dummy variable equal to one for the years in which a country entered into a stand-by agreement with the International Monetary Fund (IMF). These agreements are generally fiscal, monetary, and exchange rate policies that cover a period of

one to two years and are designed to overcome balance of payments difficulties. We also control for the effect on industrial growth of the privatization of a company in a particular industry and country in a given year. From the results reported in Table 6B, we observe that the estimated coefficients of the external dependence interaction terms are almost identical in magnitude and statistical significance to the results from Table 4 for growth in real value added and Table 5A for growth in number of establishments as dependent variables. Undertaking a stabilization program appears to significantly reduce the growth rate of real value added in a given year (at the ten percent level). While privatization of a firm in a particular industry and country does not have an effect on average growth in real value added in that year, it appears to significantly reduce (at the ten percent level) annual growth in number of establishments in that industry.

### 5.3 Additional Robustness Checks

Since much of the demand for external funds is likely to occur early on in the life of a company, it may be more appropriate to use external dependence measures for younger rather than older firms. In Table 7A we check whether the results are robust to using external dependence measures for younger firms (public for less than ten years) and older firms (public for more than ten years). We find that both older and younger firms grow significantly faster on average following liberalization (at the one percent level).

Thus far our sample consists of 19 countries, all but one of which liberalize over the course of the sample time-period. Hence, in any given year the control group consists of countries that have not yet liberalized. One advantage of this approach is that we are able to control for dynamic selection bias. Country fixed effects will not address the dynamic selection bias that may arise if governments choose to liberalize based on time-varying characteristics that are unobservable to the researcher. To address this potential bias, Frydman, Gray, Hessel, and Rapaczynski (1999) suggest comparing the treated group to a control group that has been selected for treatment but not yet been treated, and hence is likely to share the same unobservable characteristics.

As an additional robustness check, we extend the size of our sample to 31 emerging markets which includes an additional four countries that do not liberalize and eight countries that undertake liberalization during the sample period. We obtain liberalization dates for the additional countries from Table 2 of Bekaert, Harvey, and Lundblad (2002b) where these dates are described as official policy changes. Table 7B reports the results from

estimating equation (1) using the larger sample. We find that the coefficients of the external dependence interaction terms are positive although slightly less statistically significant with growth in real value added as the dependent variable. However, the coefficients of all the interaction terms are positive and highly statistically significant with growth in number of establishments as the dependent variable. We estimate all the specifications using the larger sample and the results are substantively similar.

## 6 Conclusion

This paper contributes to the existing literature on the causal link between financial development and economic growth in three ways. First, we use a natural experiment, stock market liberalizations, to avoid the potential endogeneity between financial development and growth. Second, we use panel data to investigate cross-sectional and time-series variation in financial development and to control for contemporaneous shocks. Finally, rather than examining the relationship between financial development and aggregate economic growth, we investigate whether stock market liberalizations facilitate growth through the particular mechanism of reducing market imperfections that drive a wedge between the costs of external and internal capital to firms. Specifically, we investigate whether industries that depend more on external financing for their investment needs are likely to grow faster on average following a stock market liberalization.

We find no evidence of a uniform shift in average industry growth across all sectors following liberalization. Instead, it appears that liberalizations lead to significantly higher growth in industries that depend more on external finance. These results are robust to alternative specifications, industry and country specific controls, world business cycle effects, alternative samples, and contemporaneous economic reforms. Thus, our results suggest that liberalizations facilitate economic growth by reducing the incremental cost of external capital rather than simply by lowering the overall cost of capital in the economy. This conclusion receives further support from the result that growth appears to occur through the creation of new establishments, which is more likely to require external funds, rather than through an expansion in the average size of existing establishments, which firms are more likely to finance with internal cash. From a policy perspective the evidence of a differential impact on industrial growth, with some industries benefiting more than others from stock market liberalization, can be useful for the design of liberalization programs and accompanying industrial policies.

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Table 1

## Pattern of External Financial Dependence and Average Growth Across Industries

ISIC Industrial Sectors	External Finance Dependence in 1980s			External Finance Dependence in 1970s	Equity Finance Dependence in 1980s	Investment Intensity in 1980s	Cashflow Intensity in 1980s	Average Growth Rate of		
	All	Young	Old					Real Value Added	Number of Establishments	Average Size
311 Food products	0.137	0.662	-0.052	0.058	0.002	0.261	0.226	0.043 (0.518)	0.011 (0.338)	0.026 (0.567)
313 Beverages	0.077	0.633	-0.146	-0.057	0.0004	0.264	0.243	0.031 (0.544)	0.005 (0.259)	0.024 (0.602)
314 Tobacco	-0.451		-0.375	-0.126	-0.083	0.228	0.331	0.008 (0.786)	-0.006 (0.310)	0.010 (0.867)
321 Textiles	0.4	0.664	0.141	-0.04	0.012	0.245	0.147	0.004 (0.583)	0.011 (0.298)	-0.016 (0.662)
322 Wearing apparel, except footwear	0.029	0.27	-0.02	0.031	0	0.306	0.297	0.093 (0.624)	0.055 (0.528)	0.029 (0.718)
323 Leather products	-0.14	-1.535	-1.33	-0.038	0	0.215	0.245	0.037 (0.501)	0.030 (0.313)	-0.007 (0.493)
324 Footwear, except rubber or plastic	-0.078	0.65	-0.573	-0.261	0.036	0.245	0.264	0.029 (0.399)	0.025 (0.388)	0.002 (0.468)
331 Wood products, except furniture	0.284	0.345	0.249	0.28	0.035	0.259	0.186	0.009 (0.555)	0.003 (0.375)	0.001 (0.608)
332 Furniture, except metal	0.236	0.683	0.329	0.161	0.009	0.25	0.191	0.039 (0.613)	0.030 (0.404)	0.016 (0.640)
341 Paper and pulp products	0.176	0.573	0.104	-0.006	0.02	0.242	0.199	0.043 (0.522)	0.018 (0.217)	0.020 (0.541)
342 Printing and publishing	0.204	0.599	0.136	-0.01	0.033	0.393	0.313	0.057 (0.638)	0.020 (0.273)	0.029 (0.660)
352 Other chemicals	0.219	1.351	-0.184	-0.073	0.019	0.312	0.243	0.039 (0.287)	0.022 (0.243)	0.049 (0.739)

Table 1 continued

## Pattern of External Financial Dependence and Average Growth Across Industries

ISIC	Industrial Sectors	External Finance Dependence in 1980s			External Finance Dependence in 1970s	Equity Finance Dependence in 1980s	Investment Intensity in 1980s	Cashflow Intensity in 1980s	Average Growth Rate of		
		All	Young	Old					Real Value Added	Number of Establishments	Average Size
353	Petroleum refineries	0.042	0.852	-0.022	0.056	0.000	0.224	0.215	0.031 (0.507)	0.029 (0.293)	-0.008 (0.592)
354	Misc. petroleum and coal products	0.334	-0.259	0.162	-0.211	0.057	0.227	0.151	0.052 (0.464)	0.029 (0.301)	0.011 (0.440)
355	Rubber products	0.226	0.502	-0.123	0.073	0.107	0.28	0.217	0.005 (0.591)	0.017 (0.328)	-0.015 (0.645)
356	Plastic products	1.14	1.14			0.262	0.445	-0.062	0.068 (0.578)	0.044 (0.263)	0.018 (0.609)
361	Pottery, china, earthenware	-0.146	-0.411	0.163	-0.45	0.11	0.203	0.233	0.038 (0.695)	-0.010 (0.539)	0.044 (0.840)
362	Glass and products	0.528	1.519	0.031	0.066	0.023	0.275	0.13	0.041 (0.287)	0.000 (0.330)	0.037 (0.418)
369	Other non-metallic mineral products	0.062	-0.032	0.152	0.09	0.01	0.206	0.193	0.022 (0.348)	0.024 (0.366)	-0.014 (0.451)
371	Iron and steel	0.087	0.259	0.087	-0.013	0.01	0.177	0.161	0.051 (0.689)	0.017 (0.384)	0.026 (0.717)
372	Non-ferrous metals	0.005	0.458	0.073	0.194	0.021	0.223	0.222	0.057 (0.562)	0.025 (0.270)	0.032 (0.541)
381	Fabricated metal products	0.237	0.866	0.044	0.166	0.025	0.289	0.22	0.037 (0.317)	0.034 (0.375)	0.001 (0.428)
382	Machinery, except electrical	0.445	0.753	0.217	0.156	0.109	0.289	0.16	0.072 (0.779)	0.049 (0.366)	0.023 (0.679)
383	Machinery, electric	0.767	1.219	0.23	0.262	0.358	0.378	0.088	0.053 (0.598)	0.040 (0.242)	0.015 (0.584)
384	Transport equipment	0.307	0.577	0.163	0.226	0.051	0.309	0.214	0.041 (0.682)	0.029 (0.293)	0.008 (0.664)



Table 1 continued

**Pattern of External Financial Dependence and Average Growth Across Industries**

ISIC Industrial Sectors	External Finance Dependence in 1980s			External Finance Dependence in 1970s	Equity Finance Dependence in 1980s	Investment Intensity in 1980s	Cashflow Intensity in 1980s	Average Growth Rate of		
	All	Young	Old					Real Value Added	Number of Establishments	Average Size
385 Professional & scientific equipment	0.961	1.629	0.194	0.4	0.619	0.449	0.017	0.061 (0.663)	0.032 (0.376)	0.020 (0.683)
390 Other manufactured products	0.47	0.803	-0.051	0.121	0.164	0.368	0.195	0.051 (0.507)	0.026 (0.492)	0.022 (0.537)
Average	0.243	0.568	-0.015	0.041	0.074	0.280	0.194	0.041	0.022	0.015
Std. dev.	(0.336)	(0.644)	(0.334)	(0.180)	(0.140)	(0.071)	(0.083)	(0.573)	(0.349)	(0.613)

External finance dependence is the average fraction of capital expenditures not financed with internal funds. External finance dependence in 1980s and 1970s is the median value of average external dependence between 1980-1990 and 1970-1980 respectively among U.S. firms belonging to the same industry. Equity finance dependence is the ratio of net amount of equity issues to capital expenditures. Equity Finance Dependence in 1980s is the median value of average equity dependence between 1980-1990 among U.S. firms belonging to the same industry. Cash flow is defined as the ratio of cash flow from operations to net property plant and equipment. Cash flow in 1980s is the median value of average cash flow between 1980-1990 among U.S. firms in the same industry. Investment intensity is defined as the ratio of capital expenditures to property plant and equipment. Investment Intensity in 1980s is the median value of average investment intensity between 1980-1990 among U.S. firms in the same industry. Average growth rates of real value added, number of establishments, and establishment size are reported for the largest sample of 31 countries with standard deviations in parentheses.

Table 2

**Stock Market Liberalization Year and Sample Period**

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

Liberalization date 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.

Table 3

**Country Characteristics**  
(Average Values and Standard Deviations)

Country	Openness to Trade	Per Capita GDP	Human Capital	Private Credit / GDP	Legal Origin
Argentina	16.123 (1.797)	6702.140 (579.580)	70.200 (1.060)	0.132 (0.017)	French
Bangladesh	23.977 (2.629)	263.518 (14.545)	19.030 (0.092)	0.162 (0.043)	English
Brazil	16.965 (1.988)	4203.239 (142.300)	39.517 (2.989)	0.238 (0.069)	French
Chile	56.179 (7.331)	3390.582 (880.425)	67.744 (6.295)	0.534 (0.084)	French
Colombia	31.366 (4.303)	2093.038 (204.098)	50.263 (7.826)	0.282 (0.074)	French
Cote d'Ivoire	69.269 (9.600)	819.403 (97.430)	22.530 (1.190)	0.335 (0.076)	French
Egypt	55.947 (10.834)	912.586 (80.288)	67.007 (8.825)	0.287 (0.033)	French
Greece	45.176 (2.416)	10165.630 (532.747)	90.675 (3.700)	0.420 (0.072)	French
Guatemala	38.241 (6.350)	1410.904 (76.000)	25.175 (3.357)	0.155 (0.023)	French
India	18.207 (4.334)	310.125 (53.429)	41.681 (5.977)	0.267 (0.027)	English
Indonesia	49.337 (4.300)	776.564 (194.723)	44.048 (6.131)	0.306 (0.155)	French
Israel	81.753 (6.408)	14028.990 (646.319)	85.887 (1.953)	0.536 (0.039)	English
Jamaica	105.508 (11.341)	1708.413 (174.338)	64.813 (1.987)	0.285 (0.038)	English
Jordan	123.085 (16.602)	1706.855 (185.650)	52.030 (4.219)	0.652 (0.084)	French
Kenya	58.479 (9.449)	338.157 (11.149)	25.557 (2.568)	0.297 (0.020)	English
Korea	66.083 (7.638)	7735.050 (2588.606)	91.395 (5.861)	0.891 (0.260)	French
Malaysia	139.023 (31.579)	3239.855 (780.167)	56.071 (3.959)	0.884 (0.253)	English
Mexico	34.595 (8.173)	3214.677 (132.546)	55.607 (2.117)	0.179 (0.093)	French
Morocco	56.819 (3.287)	1303.942 (63.230)	37.232 (1.175)	0.301 (0.118)	French

Table 3 continued

**Country Characteristics**  
**(Average Values and Standard Deviations)**

Country	Openness to Trade	Per Capita GDP	Human Capital	Private Credit / GDP	Legal Origin
Niger	38.655 (4.037)	214.625 (11.373)	6.643 (0.172)	0.091 (0.031)	French
Nigeria	55.178 (21.609)	245.232 (16.335)	30.636 (5.823)	0.154 (0.041)	French
Pakistan	36.404 (2.766)	426.368 (55.769)	18.391 (3.125)	0.235 (0.021)	English
Philippines	57.981 (10.288)	1071.200 (64.407)	70.960 (5.012)	0.288 (0.098)	French
Portugal	66.597 (4.213)	8957.429 (1311.564)	69.053 (22.926)	0.625 (0.140)	French
Sierra Leone	43.288 (10.995)	263.852 (27.709)	17.300 (0.206)	0.040 (0.018)	English
Sri Lanka	(70.592) 7.139	(608.712) 57.617	(73.422) 1.564	(0.200) 0.017	English
Thailand	64.024 (13.846)	1766.816 (476.956)	32.838 (5.848)	0.680 (0.208)	English
Trinidad and Tobago	75.224 (7.088)	4401.821 (374.369)	77.452 (2.527)	0.512 (0.093)	English
Turkey	31.995 (4.647)	2390.429 (261.209)	44.800 (6.144)	0.140 (0.012)	French
Venezuela	49.058 (7.599)	3530.502 (153.094)	31.413 (6.456)	0.360 (0.180)	French
Zimbabwe	51.951 (12.526)	651.891 (24.888)	45.392 (6.131)	0.206 (0.049)	English

Openness to Trade is the average annual ratio of the sum of imports and exports to total GDP. Per Capita GDP is average annual per capita GDP measured in constant 1995 US\$. Human Capital is the average annual share of secondary school enrollment in total enrollment. Private Credit/GDP is the average annual value of domestic credit to the private sector as a ratio of GDP. Legal Origin refers to the origin of the legal system. Standard deviations are in parentheses.

Table 4

**Growth Effect of Financial Liberalization**

Variable	<i>Growth in Real Value Added</i>		
<i>Liberalization</i>	0.152	0.154	0.155
	(0.130)	(0.129)	(0.131)
<i>Interaction (Liberalization * External Finance Dependence in 1980s)</i>	0.032 **		
	(0.015)		
<i>Interaction (Liberalization * External Finance Dependence in 1970s)</i>		0.053 *	
		(0.026)	
<i>Interaction (Liberalization * Equity Finance Dependence in 1980s)</i>			0.055
			(0.036)
<i>Lagged Share of Industry Value Added</i>	-0.832 ***	-0.827 ***	-0.825 ***
	(0.262)	(0.258)	(0.264)
<i>Openness to Trade</i>	0.003	0.003	0.003
	(0.003)	(0.003)	(0.003)
<i>English Legal Origin</i>	0.804 *	2.160	0.804 *
	(0.392)	(1.586)	(0.392)
<i>Log Per Capita GDP</i>	0.608	0.598	0.608
	(0.514)	(0.504)	(0.514)
<i>OECD Growth</i>	0.034 ***	-0.003	0.034 ***
	(0.011)	(0.040)	(0.011)
<i>Human Capital</i>	-0.002	-0.002	-0.002
	(0.003)	(0.003)	(0.003)
<i>Private Credit/ GDP</i>	-0.616	-0.603	-0.616
	(0.520)	(0.512)	(0.520)
<i>Country Dummies</i>	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes
<i>Number of Countries</i>	19	19	19
<i>Number of Observations</i>	6176	5938	6176
<i>R<sup>2</sup></i>	0.064	0.064	0.064

*Note:* Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable is the difference between the log of real value added in each year and the log of real value added in the previous year for each ISIC industry in each country. Liberalization is a dummy variable equal to one for the year in which the country undertook liberalization and thereafter. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds. Equity Finance Dependence is the average fraction of capital expenditures financed through public offerings. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.

Table 5A

## Decomposing Sources of Growth: Number of Establishments and Size

Variable	Growth in					
	Number of Establishments			Average Establishment Size		
<i>Liberalization</i>	-0.036 (0.079)	-0.031 (0.079)	-0.033 (0.078)	0.190 * (0.119)	0.186 * (0.117)	0.190 * (0.118)
<i>Interaction (Liberalization * External Finance Dependence in 1980s)</i>	0.037 ** (0.016)			-0.005 (0.03)		
<i>Interaction (Liberalization * External Finance Dependence in 1970s)</i>	0.059 ** (0.026)			-0.003 (0.043)		
<i>Interaction (Liberalization * Equity Finance Dependence in 1980s)</i>	0.079 * (0.041)			-0.023 (0.059)		
<i>Lagged Share of Industry Value Added</i>	-0.038 (0.062)	-0.044 (0.065)	-0.028 (0.062)	-0.797 *** (0.265)	-0.787 *** (0.259)	-0.800 *** (0.268)
<i>Openness to Trade</i>	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.000 (0.003)	0.000 (0.003)	0.000 (0.003)
<i>English Legal Origin</i>	0.306 (0.391)	0.320 (0.397)	0.306 (0.390)	0.934 * (0.543)	1.842 (1.701)	0.934 * (0.543)
<i>Log Per Capita GDP</i>	0.083 (0.138)	0.088 (0.140)	0.082 (0.137)	0.524 (0.552)	0.509 (0.542)	0.524 (0.552)
<i>OECD Growth</i>	0.039 ** (0.015)	0.040 ** (0.015)	0.039 ** (0.015)	-0.005 (0.016)	-0.035 (0.037)	-0.005 (0.016)
<i>Human Capital</i>	0.000 (0.003)	0.000 (0.003)	0.000 (0.003)	-0.002 (0.004)	-0.002 (0.004)	-0.002 (0.004)
<i>Private Credit/ GDP</i>	-0.091 (0.204)	-0.099 (0.207)	-0.091 (0.204)	-0.519 (0.543)	-0.497 (0.535)	-0.519 (0.543)

Table 5A continued

**Decomposing Sources of Growth: Number of Establishments and Size**

Variable	<i>Growth in</i>					
	<i>Number of Establishments</i>			<i>Average Establishment Size</i>		
<i>Country Dummies</i>	yes	yes	yes	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes	yes	yes	yes
<i>Number of Countries</i>	19	19	19	19	19	19
<i>Number of Observations</i>	6204	5966	6176	6176	5938	6176
<i>R<sup>2</sup></i>	0.076	0.076	0.064	0.067	0.068	0.067

*Note:* Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable in columns 1-3 is the difference between the log of number of establishments in each year and the log of number of establishments in the previous year for each ISIC industry in each country. The dependent variable in columns 4-6 is the difference in logs of average establishment size calculated as real value added in each year divided by the number of establishments in that year for each ISIC industry in each country. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds. Equity Finance Dependence is the average fraction of capital expenditures financed through public offerings. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.

Table 5B

## Dynamic Effect of Liberalization on Growth

Variable	External Finance Dependence		Equity Dependence <i>In 1980s</i>
	<i>In 1980s</i>	<i>In 1970s</i>	
<i>Short-run Liberalization Effect</i>	0.059 (0.061)	0.067 (0.062)	0.069 (0.061)
<i>Medium-run Liberalization Effect</i>	0.114 (0.090)	0.106 (0.090)	0.109 (0.089)
<i>Long-run Liberalization Effect</i>	0.158 (0.108)	0.182 * (0.112)	0.172 (0.109)
<i>Interaction (Short-run Liberalization * External Dependence)</i>	0.063 ** (0.025)	0.125 ** (0.059)	0.075 (0.050)
<i>Interaction (Medium-run Liberalization * External Dependence)</i>	-0.047 (0.041)	-0.018 (0.053)	-0.086 (0.074)
<i>Interaction (Long-run Liberalization * External Dependence)</i>	0.127 (0.086)	0.256 (0.203)	0.233 (0.177)
<i>Lagged Share of Industry Value Added</i>	-0.831 *** (0.261)	-0.829 *** (0.259)	-0.829 *** (0.263)
<i>Openness to Trade</i>	0.002 (0.003)	0.002 (0.003)	0.002 (0.003)
<i>English Legal Origin</i>	0.915 * (0.466)	2.053 (1.593)	0.915 * (0.466)
<i>Log Per Capita GDP</i>	0.593 (0.529)	0.582 (0.518)	0.593 (0.528)
<i>OECD Growth</i>	0.007 (0.035)	0.007 (0.034)	0.007 (0.035)
<i>Human Capital</i>	-0.004 (0.004)	-0.004 (0.004)	-0.004 (0.004)
<i>Private Credit/GDP</i>	-0.659 (0.553)	-0.646 (0.544)	-0.659 (0.553)
<i>Country Dummies</i>	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes
<i>Number of Countries</i>	19	19	19
<i>Number of Observations</i>	6176	5938	6176
<i>R<sup>2</sup></i>	0.061	0.061	0.061

Note: Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable is the difference between the log of real value added in each year and the log of real value added in the previous year for each ISIC industry in each country. Short-run Liberalization is a dummy variable equal to one for the first three years following liberalization; Medium-run Liberalization is a dummy variable equal to one for years 4-6 following liberalization; Long-run liberalization is a dummy variable equal to one for all years beyond the first 6 years following liberalization. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds; Equity Finance Dependence is the average fraction of capital expenditures financed through public offerings. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.



Table 6A

## Growth Effect of Financial Liberalization: Investment Intensity and Cost of Capital

Variable	<i>Growth in</i>							
	<i>Real Value Added</i>				<i>Number of Establishments</i>			
<i>Liberalization</i>	0.094 (0.132)	0.131 (0.138)	0.107 (0.133)	0.129 (0.138)	-0.027 (0.072)	-0.015 (0.093)	-0.032 (0.077)	-0.016 (0.094)
<i>Interaction (Liberalization * Cash flow in 1980s)</i>	0.035 (0.064)				-0.101 (0.068)			
<i>Interaction (Liberalization * Cash flow in 1970s)</i>		-0.192 * (0.121)				-0.328 * (0.163)		
<i>Interaction (Liberalization * Investment Intensity in 1980s)</i>	0.210 *** (0.052)		0.184 ** (0.082)		0.068 (0.081)		-0.018 (0.109)	
<i>Interaction (Liberalization * Investment Intensity in 1970s)</i>		0.286 ** (0.125)		0.108 (0.104)		0.250 * (0.124)		-0.066 (0.123)
<i>Interaction (Liberalization * External Finance Dependence in 1980s)</i>			0.001 (0.024)				0.040 (0.024)	
<i>Interaction (Liberalization * External Finance Dependence in 1970s)</i>				0.037 (0.029)				0.069 * (0.034)
<i>Lagged Share of Industry Value Added</i>	-0.829 *** (0.264)	-0.824 *** (0.259)	-0.828 (0.262)	-0.826 (0.259)	-0.035 (0.062)	-0.041 (0.065)	-0.038 (0.063)	-0.045 (0.066)
<i>Openness to Trade</i>	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)	0.003 (0.003)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
<i>English Legal Origin</i>	0.805 * (0.393)	2.160 (1.586)	0.805 * (0.393)	2.160 (1.586)	0.306 (0.391)	0.320 (0.398)	0.306 (0.391)	0.320 (0.398)
<i>Log Per Capita GDP</i>	0.608 (0.514)	0.598 (0.504)	0.608 (0.514)	0.598 (0.504)	0.082 (0.138)	0.088 (0.140)	0.082 (0.138)	0.088 (0.140)

Table 6A

**Growth Effect of Financial Liberalization: Investment Intensity and Cost of Capital**

Variable	<i>Growth in</i>							
	<i>Real Value Added</i>				<i>Number of Establishments</i>			
<i>OECD Growth</i>	0.034 **	-0.003 **	0.034 ***	-0.003	0.039 **	0.040 **	0.039 **	0.040 **
	(0.011)	(0.040)	(0.011)	(0.040)	(0.015)	(0.015)	(0.015)	(0.015)
<i>Human Capital</i>	-0.002	-0.002	-0.002	-0.002	0.000	0.000	0.000	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
<i>Private Credit/ GDP</i>	-0.616	-0.603	-0.616	-0.603	-0.091	-0.099	-0.091	-0.099
	(0.521)	(0.512)	(0.521)	(0.512)	(0.204)	(0.207)	(0.204)	(0.207)
<i>Country Dummies</i>	yes	yes	yes	yes	yes	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes	yes	yes	yes	yes	yes
<i>Number of Countries</i>	19	19	19	19	19	19	19	19
<i>Number of Observations</i>	6176	5938	6176	5938	6204	5966	6204	5966
<i>R</i> <sup>2</sup>	0.064	0.064	0.064	0.064	0.076	0.076	0.076	0.076

*Note:* Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable in columns 1 - 4 is the annual growth rate in real value added measured as the difference between the log of real value added in each year and the log of real value added in the previous year for each ISIC industry in each country. The dependent variable in columns 5-8 is the difference between the log of number of establishments in each year and the log of number of establishments in the previous year for each ISIC industry in each country. Cash flow is defined as the ratio of cash flow from operations to net property plant and equipment. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds. Investment intensity is defined as the ratio of capital expenditures to property plant and equipment. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.

Table 6B

## Growth Effect of Financial Liberalization: Other Economic Reforms

Variable	Growth in					
	Real Value Added			Number of Establishments		
<i>Liberalization</i>	0.009 (0.036)	0.012 (0.036)	0.012 (0.037)	-0.017 (0.041)	-0.010 (0.040)	-0.014 (0.041)
<i>Interaction (Liberalization * External Finance Dependence in 1980s)</i>	0.029 * (0.015)			0.036 ** (0.016)		
<i>Interaction (Liberalization * External Finance Dependence in 1970s)</i>		0.059 ** (0.026)			0.060 ** (0.028)	
<i>Interaction (Liberalization * Equity Finance Dependence in 1980s)</i>			0.059 * (0.035)			0.076 * (0.040)
<i>Stabilization</i>	-0.236 * (0.124)	-0.229 * (0.121)	-0.236 * (0.124)	-0.018 (0.054)	-0.018 (0.057)	-0.018 (0.054)
<i>Industry Privatization</i>	0.006 (0.024)	0.009 (0.025)	0.006 (0.024)	-0.019 * (0.011)	-0.017 * (0.010)	-0.019 * (0.011)
<i>Lagged Share of Industry Value Added</i>	-0.805 *** (0.260)	-0.810 *** (0.257)	-0.798 *** (0.263)	-0.041 (0.063)	-0.049 (0.066)	-0.031 (0.063)
<i>Openness to Trade</i>	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	0.003 * (0.002)	0.003 * (0.002)	0.003 (0.002)
<i>English Legal Origin</i>	0.876 * (0.493)	1.015 (0.697)	0.875 * (0.493)	-0.206 (0.277)	-0.196 (0.279)	-0.206 (0.277)
<i>Log Per Capita GDP</i>	0.299 (0.251)	0.300 (0.247)	0.299 (0.251)	0.113 (0.122)	0.120 (0.124)	0.113 (0.122)
<i>OECD Growth</i>	0.022 (0.016)	0.022 (0.015)	0.022 (0.016)	0.030 ** (0.011)	0.031 *** (0.011)	0.030 ** (0.011)
<i>Human Capital</i>	-0.002 (0.003)	-0.002 (0.003)	-0.002 (0.003)	0.001 (0.002)	0.001 (0.002)	0.001 (0.002)

Table 6B continued

**Growth Effect of Financial Liberalization: Other Economic Reforms**

Variable	<i>Growth in</i>					
	<i>Real Value Added</i>			<i>Number of Establishments</i>		
<i>Private Credit/ GDP</i>	-0.504 (0.395)	-0.497 (0.392)	-0.504 (0.395)	-0.128 (0.191)	-0.135 (0.194)	-0.128 (0.191)
<i>Country Dummies</i>	yes	yes	yes	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes	yes	yes	yes
<i>Number of Countries</i>	19	19	19	19	19	19
<i>Number of Observations</i>	6168	5930	6168	6196	5958	6196
<i>R<sup>2</sup></i>	0.027	0.027	0.027	0.062	0.061	0.062

*Note:* Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable in columns 1-3 is the difference between the log of real value added in each year and the log of real value added in the previous year for each ISIC industry in each country. The dependent variable in columns 4-6 is the difference between the log of number of establishments in each year and the log of number of establishments in the previous year for each ISIC industry in each country. Liberalization is a dummy variable equal to one for the year in which the country undertook liberalization and thereafter. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds. Equity Finance Dependence is the average fraction of capital expenditures financed through public offerings. Stabilization is a dummy variable that is equal to one for the year(s) in which a country entered into a stand-by agreement with the International Monetary Fund. Industry Privatization is a dummy variable that is equal to one for a ISIC industry in a country if a company in that industry is privatized that year in that country. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.

Table 7A

**Growth Effect of Financial Liberalization: Old versus Young Firms**

Variable	<i>Growth in</i>			
	<i>Real Value Added</i>		<i>Number of Establishments</i>	
<i>Liberalization Dummy</i>	0.156 (0.129)	0.154 (0.129)	-0.028 (0.079)	-0.033 (0.081)
<i>Interaction (Liberalization Dummy * External Finance Dependence of Old Firms in 1980s)</i>	0.039 *** (0.012)	-	0.018 (0.012)	
<i>Interaction (Liberalization Dummy * External Finance Dependence of Young Firms in 1980s)</i>	-	0.022 *** (0.005)		0.010 (0.007)
<i>Lagged Share of Industry Value Added</i>	-0.832 *** (0.261)	-0.824 *** (0.245)	-0.041 (0.066)	-0.033 (0.068)
<i>Openness to Trade</i>	0.003 (0.003)	0.003 (0.003)	0.002 (0.002)	0.002 (0.002)
<i>English Legal Origin</i>	2.162 (1.587)	0.784 * (0.383)	0.320 (0.398)	0.322 (0.405)
<i>Log Per Capita GDP</i>	0.599 (0.505)	0.597 (0.503)	0.088 (0.140)	0.088 (0.143)
<i>OECD Growth</i>	-0.003 (0.040)	0.035 *** (0.011)	0.040 ** (0.015)	0.040 ** (0.016)
<i>Human Capital</i>	-0.002 (0.003)	-0.002 (0.003)	0.000 (0.003)	0.000 (0.003)
<i>Private Credit/ GDP</i>	-0.604 (0.512)	-0.612 (0.508)	-0.099 (0.207)	-0.107 (0.206)
<i>Country Dummies</i>	yes	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes	yes
<i>Number of Countries</i>	19	19	19	19
<i>Number of Observations</i>	5938	5942	5966	5970
<i>R<sup>2</sup></i>	0.064	0.066	0.076	0.076

*Note:* Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable in columns 1 and 2 is the difference between the log of real value added in each year and the log of real value added in the previous year for each ISIC industry in each country. The dependent variable in columns 3 and 4 is the difference between the log of number of establishments in each year and the log of number of establishments in the previous year for each ISIC industry in each country. Liberalization is a dummy variable equal to one for the year in which the country undertook liberalization and thereafter. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds. Old firms have been public for more than ten years, and young firms for less than ten years. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.

Table 7B

## Growth Effect of Financial Liberalization: Sample of 31 Countries

Variable	Growth in					
	Real Value Added			Number of Establishments		
<i>Liberalization Dummy</i>	0.128 (0.081)	0.129 * (0.080)	0.131 * (0.082)	0.024 (0.060)	-0.020 (0.060)	-0.021 (0.060)
<i>Interaction (Liberalization Dummy * External Finance Dependence in 1980s)</i>	0.022 (0.015)			0.035 ** (0.014)		
<i>Interaction (Liberalization Dummy * External Finance Dependence in 1970s)</i>		0.041 * (0.023)			0.067 *** (0.025)	
<i>Interaction (Liberalization Dummy * Equity Finance Dependence in 1980s)</i>			0.021 * (0.043)			0.074 ** (0.037)
<i>Lagged Share of Industry Value Added</i>	-0.721 *** (0.186)	-0.711 *** (0.183)	-0.721 *** (0.189)	0.035 (0.059)	0.029 (0.060)	0.041 (0.059)
<i>Openness to Trade</i>	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)	0.002 (0.002)
<i>English Legal Origin</i>	1.504 (1.197)	1.485 (1.168)	1.504 (1.197)	-0.134 (0.160)	-0.015 (0.326)	-0.134 (0.160)
<i>Log Per Capita GDP</i>	0.504 (0.395)	0.495 (0.386)	0.504 (0.395)	0.110 (0.128)	0.115 (0.129)	0.110 (0.128)
<i>OECD Growth</i>	0.001 (0.031)	0.002 (0.030)	0.001 (0.031)	0.027 * (0.015)	0.027 * (0.015)	0.027 * (0.015)
<i>Human Capital</i>	-0.002 (0.003)	-0.002 (0.002)	-0.002 (0.003)	0.000 (0.003)	0.000 (0.003)	0.000 (0.003)

Table 7B continued

**Growth Effect of Financial Liberalization: Sample of 31 Countries**

Variable	<i>Growth in</i>					
	<i>Real Value Added</i>			<i>Number of Establishments</i>		
<i>Private Credit/ GDP</i>	-0.480 (0.418)	-0.465 (0.410)	-0.480 (0.417)	-0.101 (0.193)	-0.109 (0.196)	-0.101 (0.194)
<i>Country Dummies</i>	yes	yes	yes	yes	yes	yes
<i>Year Dummies</i>	yes	yes	yes	yes	yes	yes
<i>Number of Countries</i>	31	31	31	31	31	31
<i>Number of Observations</i>	7926	7638	7926	7885	7595	7885
<i>R<sup>2</sup></i>	0.053	0.053	0.053	0.064	0.064	0.064

*Note:* Robust standard errors are in parentheses. \*\*\*, \*\*, and \* denote statistical significance at the 1, 5, and 10 percent levels, respectively.

The dependent variable in columns 1-3 is the difference between the log of real value added in each year and the log of real value added in the previous year for each ISIC industry in each country. The dependent variable in columns 4-6 is the difference between the log of number of establishments in each year and the log of number of establishments in the previous year for each ISIC industry in each country. Liberalization is a dummy variable equal to one for the year in which the country undertook liberalization and thereafter. External Finance Dependence is the average fraction of capital expenditures not financed with internal funds. Equity Finance Dependence is the average fraction of capital expenditures financed through public offerings. Lagged Share of Industry Value Added is the ratio of real value added of each industry to the sum of real value added for all industries, in the previous year. Openness to Trade is the annual ratio of the sum of imports and exports to total GDP. English Legal Origin is a dummy variable equal to one for countries with an English legal system. Log Per Capita GDP is the logarithm of annual per capita GDP measured in constant 1995 US\$. OECD Growth is the annual average growth rate of GDP in OECD countries. Human Capital is the annual share of secondary school enrollment in total enrollment. Private Credit/GDP is annual domestic credit to the private sector as a fraction of GDP.

## Appendix - Data Sources

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<u>Industrial Statistics</u>	Source
External Dependence Measures	Rajan and Zingales (1998)
Growth Statistics	United National Industrial Statistics Database, 1980-1999, <i>United Nations</i> , New York.
Privatization data	World Bank Privatization Transactions Database (1989-1998); news sources; government web sites
<u>Country Statistics</u>	
Indicators	World Development Indicators, <i>World Bank</i> , Washington D.C.
Liberalization date	Kim and Singal (1989); Bekaert and Harvey (2000); Bekaert, Harvey, and Lundblad (2002b); <i>International Finance Corporation</i> .
Ratio of Private Credit to GDP	Beck, Levine, Loayza (2000) data provided by World Bank
Stand-by Agreements with IMF	Henry (2000b) and Hutchison (2001)

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