

THE POLITICS OF FINANCIAL DEVELOPMENT: EVIDENCE FROM TRADE LIBERALIZATION*

Matías Braun, IM Trust and Universidad Adolfo Ibáñez

Claudio Raddatz, The World Bank

Incumbents in various industries have different incentives to promote or oppose financial development. Changes in the relative strength, or rents, of promoter and opponent industries thus result in changes in the political equilibrium level of financial development. We conduct an event study using a sample of 41 countries that liberalized trade during 1970-2000, and show that the strengthening of promoter relative to opponent industries resulting from this event is a good predictor of subsequent financial development. The benefits of developing the financial system are insufficient for financial development, and rents in particular hands appear to be necessary to achieve it.

I. Introduction

It has been extensively documented that the level of financial development varies greatly across countries (LaPorta et al. (1997, 1998)). Existing theories that try to explain these differences tend to rely on stable, largely predetermined factors such as a country's legal origin (in the line of LaPorta et al. (1997, 1998)), pattern of colonization (Acemoglu and Johnson (2003)), religion and culture (Stulz and Williamson (2003)), and social capital endowment (Guiso et al., (2004)). Less documented, however, is the fact that a country's financial development exhibits non-trivial changes in time that rival its cross-sectional variation. A quick look at the data reveals that the rank in terms of level of private credit to GDP in the early 1970s explains *only* 51% of the cross-country variance in the rank 25 years later¹. This suggests that, successful as they are in explaining the cross-section variation, predetermined factors cannot be the only force behind the observed differences in financial development.

If financial development matters for economic performance, as demonstrated by the large body of literature that has documented its positive, first order impact on economic growth,² and it is not completely predetermined, why then do some countries achieve financial development while others do not? A compelling answer to this question has been put forward by a recent literature that emphasizes the role of private interests and politics as determinants of financial development (Rajan and Zingales (2003), Perotti and Volpin (2004)). The political economy approach seems sensible. First, there is ample evidence that policies such as the protection of creditor rights or minority shareholders do matter for financial development (La Porta et al (1997)). Second, financial development seems not to affect everybody equally, as documented by several recent papers that focus on the differential impact of financial development across industries and firms (Rajan and Zingales (1998), Kroszner and Strahan (1999), Braun (2002), Raddatz (2006), Braun and Larrain (2005)). This suggests that distinct policies affecting the development of financial markets are likely to have important distributive consequences,³ providing fertile ground for political economy mechanisms.

This paper takes the political economy view of financial development to the data and provides empirical evidence that political economy considerations can in fact go a long way in explaining the differences in financial development observed within countries across time.

We start from Rajan and Zingales' (2003) idea that the main source of conflict arising from financial development comes from the fact that a well developed financial system enhances competition in the industrial sector by allowing easier entry. We note, however, that the impact of financial development on competition is likely to vary across industries. In some industries the lack of external finance may be an important constraint to entry, while in others technological considerations such as the minimum efficient scale may be the main constraint on competition. Thus, incumbents in various

industries may weigh differently the benefits of easier access to credit associated with a more developed financial system against the costs of more intense competition.

Using industry level data for a large cross section of countries we exploit the de-facto heterogeneous impact of cross-country financial development on incumbents' rents across industries to measure each sector's willingness to promote or oppose financial sector development. We classify each industry as either a *promoter* or an *opponent* to financial development, assuming that this industry characteristic is maintained across countries because of its technological drivers. We presume that incumbents in sectors where financial development has a smaller (larger) impact on rents are less (more) willing to incur the costs of blocking financial reform.

Incentives alone are not enough to induce political change, however. Having the means to transform one's views into actual policies (i.e. convince policy makers) is critical. We therefore associate the relative strength of promoters vis-à-vis opponents with their relative rents. Here is where our story departs from non-political economy explanations for financial development. Our null hypothesis is that if political economy considerations related to the impact of financial development on competition matter, variation in the relative strength of promoters should map into changes in financial sector development.

In order to avoid the omitted variable bias problem of cross-country regressions and to address the endogeneity of rents, we set an event study based on the effects that trade liberalization has on relative industry rents. We treat trade liberalization as a discrete, reasonably exogenous shock to the political economy equilibrium of financial sector development. Although we initially assume the exogeneity of the event, we also provide extensive evidence in favor of this assumption.

We find that those countries where trade liberalization results in an increase in the relative strength of promoters end up with a significantly larger financial system than those countries where trade liberalization favors those who oppose financial development. The difference in financial development - measured as the ratio of private credit to GDP- between these two groups of countries increases by 18 percentage points. The result is robust to a battery of tests that includes controlling for demand-side determinants of financial development, different strategies to classify promoters and opponents, the use of different event study windows, excluding potentially influential industries, dealing with potential endogeneity concerns, and several other changes to the specification.

Trade liberalization is, of course, not the only shock that can change the politics of financial development. In order to validate our results, we replicate the procedure with the 1973 oil shock, an event that is arguably more exogenous than trade liberalization. We find the same results.

Our paper is related to several strands of literature. Previous evidence on the relation between financial development and competition -that forms the basis of our political economy mechanism- has

been provided by Rajan and Zingales (1998), which shows that financial development affects the difference in growth between more and less external financial dependent industries mainly through differences in the growth of the number of firms as opposed to the growth of the typical establishment. Related to this, Cetorelli (2001, 2003), and Cetorelli and Strahan (2003) show that lower degrees of banking competition are associated with larger firms across countries, across US States, and following the passage of the Second European Banking Directive. We provide additional evidence on the link between financial development and competition by showing that both aggregate manufacturing sector price-cost margins and average firm size are significant and negatively correlated with financial development across countries. However, we also show that there is important *heterogeneity* in the impact of financial development on these measures across industries.

Of course, the effect of financial development on product market competition that we consider here is not the only way in which political economy considerations can matter for the financial system. Pagano and Volpin (2004a, 2004b), Perotti and von Thadden (2004), and Roe (2003), among others, have worked on other sources of conflict.

Section II explains our empirical methodology, including measurement issues and a discussion of the assumptions that are implicit in our approach. Section III presents the main result of the paper, and Section IV concludes.

II. Methodology

Our empirical approach is aimed at building a test for the hypothesis that a shock to the ability to influence politics of those parties that favor or oppose financial development will affect the subsequent development of the financial sector. If we were able to identify the different parties, had a measure of their relative strength, and knew the date in which a shock to this relative strength occurred for a sample of countries, we could test the hypothesis by conducting an event study around the date of the shock and estimating the parameters of the following regression:

$$\Delta FD_c = \alpha + \beta \times [\textit{Strengthening of Promoters}]_c + X_c \gamma + \varepsilon_c, \quad (1)$$

where ΔFD_c is a measure of the change in financial development, and *Strengthening of Promoters* is a measure of the change in the relative strength of the parties that favor financial development (the promoters), both computed around the date of the shock (we define this variable more precisely below). X_c is a general set of possible controls, and ε_c is the error term, which may include several components. Testing the hypothesis in this setting would be equivalent to test whether the coefficient β is significantly positive.

We make three major assumptions in order to apply the framework above: one, that there are differences in incentives of firms for financial sector development which vary by industries, but are similar across countries; two, that the means to oppose or promote financial development are related to industry rents; and three, that relative industry rents are affected by discrete events such as trade liberalization or the 1970s oil shock. The first assumption allows us to identify the different parties of the political economy game, the second one to measure their relative strength at any point in time, and the third one to capture reasonable exogenous changes in this relative strength.

A. Identifying promoters and opponents of financial development

There are many dimensions along which the development of the financial system can have an asymmetric effect across groups. Although we could, in principle, identify winners and losers along each dimension, this paper focuses on the conflict across groups that comes from the effect that financial development has on the product market. The idea that finance has an effect on how firms conduct business is not new (see, for instance, Chevalier (1995), Phillips (1995)). Rajan and Zingales (2003), in particular, provide the basic mechanism on which we build here. They argue that a more developed financial system reduces the correlation between credit allocation and a borrower's collateral and reputation, which facilitates the entry of new firms, increasing the degree of competition and therefore reducing the rents of incumbents.

Figure I suggests that the link between financial development and rents is indeed empirically relevant. Panel A plots, for a sample of countries, the average ratio of *Private Credit to GDP* during the 1980s and 1990s versus the average *Price-Cost Margin* in manufacturing during the same period. The correlation is negative and significant (-0.27, significant at the 0.2% level). The Price-Cost Margin (henceforth PCM) -computed using industry data from the Unido (2002) dataset- is defined as follows:

$$PCM = \frac{\text{Value of Sales} - \text{Payroll} - \text{Cost of Materials}}{\text{Value of Sales}} .$$

PCM is essentially a measure of the profitability of incumbents, the flow accrued to the owners of capital. One can think of a number of refinements to this indicator –that would take into account the amount of capital invested and indirect taxes, in particular. Our choice is dictated primarily by simplicity and data availability. Since, as will be made clear below, we will not be using the level of PCM but will just rely on its within-country, cross-industry variation, the simplification is unlikely to be of first-order importance. The methodology implies that the fact that some industries have higher margins everywhere due to larger capital requirements or taxes (tobacco and oil, for instance), or that some countries exhibit

higher margins across the board (perhaps due to a lower level of competition or higher regulatory requirements) will have no impact on our measurement.

We are not the first to use PCM to proxy for the degree of product market competition. The measure has been shown to be strongly positively correlated with measures of concentration across industries (see for example Domowitz et al., 1986; Collins and Preston, 1969; Clarke et al., 1984; and Encaoua and Jacquemin, 1980). Panel B of Figure I shows this relation in the U.S.

Although incumbents appear on average worse off relative to potential entrants in countries with more developed financial systems, the effect can vary significantly across industries. Incumbents whose rents are positively affected are probably more willing to maintain policies to increase financial sector development. Of course, financial development may also have some differential impact on rents within industries but we focus only on the between industries dimension mainly because our data do not allow us to consider within industry heterogeneity⁴. We do not believe our approach significantly limits or biases the analysis. First, in many countries incumbents organize in trade associations organized along industry dimensions. This suggests that relying on these existing channels to organize within an industry may be easier than organizing across industries. Second, if the boundaries that define who favors or opposes financial development were just loosely connected with industry dimensions, the classification we present next would be a poor proxy for the real political forces behind financial reform. This would considerably stack the cards against finding any evidence for our political economy mechanism based on such classification.

To identify the relative *promoters* and *opponents* of financial development we look at the effect of financial development on the PCM of 28 different three digit ISIC industries across countries by estimating the parameters of the following regression:

$$PCM_{ic} = \alpha_0 + \alpha_i + \alpha_c + \eta_i \cdot FD_c + \varepsilon_{ic} \quad (2)$$

where PCM_{ic} is the PCM of industry i in country c , α_0 is a constant, α_i and α_c are industry and country fixed effects respectively, and FD_c is the financial development of country c measured as the ratio of *Private Credit to GDP* (obtained from World Development Indicators 2003). η_i measures the relative effect of financial development on industry i 's PCM, the incentives of industry i in promoting financial sector development. Both the PCM and private credit correspond to the averages for the period 1980-2000.

Figure II, which shows the relationship between private credit and margins for two different industries (Non-basic Chemicals and Textiles), suggests that the effect is indeed heterogeneous across industries. The relative effects of financial development on the margins of different manufacturing industries (the η coefficients), obtained from the estimation of equation (2), are presented in Table I. Column one reports the estimated effects, and column two, the standard deviations. The demeaned values of the effects are reported in column three. A simple inspection of the table shows that there is indeed significant variation on the estimated effects across industries. The dispersion in the estimated sensitivities can be observed also in Figure IIIa. The figure plots the η coefficients of each industry against its private-credit-weighted average PCM. It is apparent that the relationship is not materially affected by the few outliers that are present.

Two comments regarding the estimation of (2) are in order. First, if our political economy story is indeed relevant, the specification in (2) suffers from reverse causality because when rents are high incumbents have more resources to restrict the development of financial markets. We address this problem by instrumenting the measure of financial development with each country's legal origin, as is standard in the law and finance literature (La Porta et al., 1997; Beck et al., 2000). Second, because of the multicollinearity induced by the "dummy problem" we can only identify relative effects. So the η_i coefficient captures the impact of financial development on industry i 's PCM relative to an arbitrary benchmark industry.

The relationship between incumbent rents and financial development is, of course, quite complex. A number of industry characteristics are likely to be involved. Since there is not much previous research upon which to rely here, it is difficult to come up with good a priori proxies for some potentially important ones (such as the importance of innovation or the minimum efficient scale). Our approach reflects these problems and takes an agnostic position regarding which industries we expect to be relatively more and less affected. We just let the data speak under the assumption that the relative incentives of different industries in promoting financial sector development are reasonably constant across countries. The de-facto measure turns out to be correlated with a number of industry characteristics that should be relevant for the effect of financial development on the outcome of incumbents across industries, and -because of their technological nature- are not likely to change significantly across countries. Promoter industries tend to naturally (i.e. as measured in the U.S. data) have higher liquidity needs (as measured by the cash conversion cycle⁵), invest a higher share of cash flows, to have fewer tangible assets, and to have lower natural entry and exit. Also, the external finance requirements of old promoters are higher than for young promoters, and the gap is larger than that between old and young opponents. In the empirical section we explore further the role of external finance dependence.

It should be noted, however, that PCM also includes the normal returns to capital, which may depend on the price of capital relative to labor and which varies significantly across countries. Financial development could be a proxy for a country's capital abundance, and rents a proxy for an industry's capital intensity. If this channel were empirically important then η should be strongly positively correlated with an industry's capital intensity, and financial development should increase with PCM. Instead, the correlation between η and capital per worker is negative and not significant, and financial development is associated with lower, not higher, average PCMs. Despite these findings, we will control for the possible implications of this channel in our benchmark regression below. The channel will prove unimportant.

As a robustness check we consider an alternative measure of how incumbents are differently affected by financial development based on quantity instead of price variables. In particular, we measure the extent to which average firm size across industries is related to private credit. The ranking of industries along this dimension is very similar to the one using the PCM measure. The correlation of the two variables is 0.58, significant at 1% levels. The results turn out to be basically the same. The relationship between the PCM and the size measures is depicted in Figure IIIb.

We use the η coefficients to distinguish between those industries that favor (in relative terms) policies conducive to the development of the financial system (henceforth the "*Promoters*") and those industries that oppose these policies (henceforth the "*Opponents*"). We identify the promoters (opponents) with those industries with a η coefficient above (below) the median. We follow this approach for three reasons. First, it allows us to classify the industries in a parsimonious manner that has the advantage of simultaneously taking explicitly into consideration the relative nature of the estimated coefficients, and including the same number of industries in each group. In this way we are not stacking the cards against one particular group simply by including more industries among its members.⁶ Second, this separation takes into account the natural clustering of the estimated coefficients. Third, although it would be possible to rely on the point estimates as measures of the degree of opposition of an industry to financial development instead of classifying the industries into two groups, we do not follow this route because it requires the specific numerical differences in coefficients across industries to have explanatory power. Given the lack of precision of individual estimates and the lack of significance of many one-to-one comparisons, we believe it is preferable instead to focus on the broad, statistically significant differences across groups of industries. Nevertheless, we check our results using the point estimates as measures of the degree of opposition and find that, although considerably less precise, our results are qualitatively similar.

B. Measuring the relative strength of the parties

Incentives by themselves are not enough to induce financial development in our political economy story. In addition, the ability to influence policies is necessary. We measure this ability by the rents of promoters relative to opponents. Rents provide promoters (opponents) the means to foster (obstruct) financial development through campaign contributions, fees for lobbying services, or the direct bribing of politicians depending on the institutional environment. Arguably, a competitive firm whose income covers only factor payments would have a harder time trying to finance these types of activities than a firm with abundant rents at its disposition. Accordingly, we define the relative *strength of promoters* of financial development as follows:

$$\begin{aligned} \text{Strength of Promoters} &= PCM^{PROM} - PCM^{OPP} \\ &= \sum_{i \in \text{Promoters}} \text{share}_i \cdot PCM_i - \sum_{i \in \text{Opponents}} \text{share}_i \cdot PCM_i \end{aligned}$$

where PCM^{PROM} and PCM^{OPP} are the value-added weighted average PCM of promoters and opponents respectively; and, for each industry i that belongs to the group of promoters or opponents, share_i is the share of that industry's value added in the total manufacturing value added in the country.⁷

C. Trade liberalization and the shock to the political economy equilibrium

In the mechanism we have in mind, the relative strength of promoters is an important determinant of the equilibrium level of financial system development. Testing whether countries where promoters are strongest tend to have more developed financial systems directly is problematic for two reasons. First, omitted variable bias would be a significant concern. We do not intend to argue that the mechanism we propose here is the only or main thing determining financial development; just that it is relevant. Second, the very nature of the mechanism implies that relative rents should be endogenous if the groups care enough about financial development to try to shape it. Also, it is not clear that the test would have enough power since absent significant perturbations to this political economy equilibrium we would not expect significant changes in financial development.

We address both the omitted variable and endogeneity issues using an event study methodology instead. This also allows us to explore the time series of financial development which is one of the main motivations of this paper. Three main assumptions are needed for this to be valid: first, that there is an event in the sense of a discrete change in conditions; second, that the event perturbs the relative strength of promoters; and third, that the event is reasonably exogenous to the politics of financial development. We discuss and provide evidence for each of these in the context of trade liberalization below.

A significant change that potentially affects the relative strength during the last 20 years is that an important number of countries engaged in a process of *trade liberalization*, opening their borders for trade in goods. As stressed by Rajan and Zingales (2003), trade can have profound effects on the politics of financial development. The essence of the argument is that trade liberalization decreases incumbents' rents and consequently their ability to oppose financial sector development⁸. Relative prices are profoundly and permanently affected by trade liberalization. Since the change in prices is a function of both world prices, comparative advantages, and the initial structure, the effect of trade liberalization across sectors varies from country to country. This and the different sizes of sectors across countries provide us with useful variation in the strength of promoters.

Following Sachs and Warner (1995), we consider trade liberalization as a discrete event that occurred at a specific time for each country. The dates of trade liberalization were obtained from Wacziarg and Horn Welch (2003) who updated the dates originally estimated by Sachs and Warner (1995).⁹ A plausible argument against this approach is that trade liberalization is a gradual process instead of a one time event. Although there is always some degree of gradualism in the implementation of reforms, an important aspect of trade liberalization is the removal of tariffs and quantitative restrictions that can have an immediate impact on the volume of commerce of a country. Figure IVa, which plots the average volume of trade as a fraction of GDP around the time of trade liberalization, shows that our liberalization dates do indeed capture a discrete break in the trend of the volume of trade for the typical country¹⁰.

As expected, there is a large, discrete decline in average margins following the liberalization event (Figure IVb). The impact of trade liberalization on the equilibrium between promoters and opponents (i.e. on the relative margins) is shown in Figure IVc. The figure shows the median absolute deviation of the residuals of a regression of the strength of promoters on its lagged value around the liberalization date.¹¹ If changes in the strength of promoters across countries were just random, the median absolute deviation of the residuals would be stable around the event. On the contrary, we observe a spike around the time of the event that signals that trade liberalization has a significant heterogeneous effect on the strength of promoters across countries. Notice also that by year t+5 this relationship as well as the level of aggregate margins seem to stabilize.

Thus, trade liberalization seems to be a reasonably discrete event that has a heterogeneous effect on relative margins. This is the main source of variation our dependent variable is based upon. Following this idea, the *Strengthening of promoters* was computed for each country as the change in the *strength of promoters* resulting from variations in the relative rents of this group around the trade liberalization event:

$$\begin{aligned}
\text{Strengthening of promoters} &= \Delta PCM^{PROM} - \Delta PCM^{OPP} \\
&= \sum_{i \in \text{Promoters}} \text{share}_i \cdot \Delta PCM_i - \sum_{i \in \text{Opponents}} \text{share}_i \cdot \Delta PCM_i, \quad (3)
\end{aligned}$$

where the shares correspond to the average value in the five year window before liberalization, and are computed as above,¹² and ΔPCM_i corresponds to the change in average PCM of an industry in a five year window around liberalization date τ :

$$\Delta PCM_i = \sum_{t=\tau}^{\tau+5} \frac{1}{6} PCM_i - \sum_{t=\tau-5}^{\tau-1} \frac{1}{5} PCM_i. \quad (4)$$

The last cause of concern with our view of trade liberalization as a shock to the political economy equilibrium is the potential endogeneity of trade liberalization. Agents could anticipate the financial effects of trade liberalization and internalize them in their decision to open up. Below we will deal with this issue in a number of ways, and it will prove to be unimportant for our main results. However, in order to test our hypothesis in the broadest possible way and with the caveat of data limitations, we will also look at the impact of the oil-price shock on the strength of the different parties in the same way we measure the impact of trade liberalization. This shock is more clearly exogenous to the balance of power between local parties.

III. Results

In this section we show that the cross-country variation in financial development following trade liberalization can be explained in part with our measure of the strengthening of promoters. We first document some stylized facts on the relation between trade liberalization and financial development in the cross-section of countries that highlight both the role of liberalization as a shock to the political economy equilibrium and the variation in the data that we try to explain. Next, we present our main result, check its robustness, provide details of the mechanism, and use the liberalization experiment within the political economy framework to further explore the real effects of financial development.

A. Trade and financial development

Here we present some new evidence on the relationship between trade and financial development¹³. Table II provides summary statistics for a sample of 73 countries for which we have complete data for both trade openness and private credit to GDP during the 1970s, 80s and 90s. We split the data into two groups based on whether the country liberalized trade during the period or not, and

compute a ranking based on private credit taking the average value in the 1970-74 and 1995-99 periods. The first panel reports statistics for the whole sample.

At first glance, it would appear that opening up to trade has little impact on financial development. Countries that liberalized trade (first panel) advanced on average just 3.9 positions in the ranking of 73 countries. Aside from this figure not being economically noteworthy, it is not statistically significant either. The median change in the ranking is even smaller (1 position). The data are not particularly supportive of the view that opening up for trade triggers financial development automatically. Notice also that the ranking of private credit is highly persistent in time. When considering liberalizers and non-liberalizers together (third panel) the rank correlation of the measures in the early 1970s and the late 1990s is 0.68. The countries' initial position then explains more than 50% of their position more than a quarter century later.

Consider, however, what happens when we compare the persistence of liberalizers and non-liberalizers. While for the countries that did not open up for trade during the period the initial position in the ranking explains 2/3 of the variation in the final position, for the liberalizers it explains less than 5% and the correlation is not even statistically significant. Figure V makes the point graphically by plotting the relationship between initial and final rank for the two groups separately. Countries above (below) the upper (lower) straight line in each figure gained (lost) at least as many positions as to outpace (lag behind) one-fifth of the countries in their respective group. While over 60% of the liberalizers lie outside the region, only 23% of the non-liberalizers do so.

The data show that trade liberalization is a perturbation to the high persistence of financial development. There is then a way to reconcile the view that financial development is determined by a country's institutions –consistent with high persistence- with the idea that opening the economy to trade changes matters.

B. Trade liberalization and the political economy determinants of financial development

Specification and Data

Using the measure of the *strengthening of promoters* defined in section 2.2, introducing some specific controls, and specifying the form of the error term, the benchmark specification in (1) becomes:

$$\Delta FD_c = D_{event} \delta + \alpha \times FD_{0,c} + \beta \times [\textit{Strengthening of promoters}]_c + \varepsilon_c + \mu_{event}, \quad (5)$$

where ΔFD is the change in the ratio of bank credit to the private sector to GDP computed as the difference between the average ratio between t-5 and t-1, and the average ratio between t+5 and t+10 (everything in event time);¹⁴ FD_0 is average private credit between t-5 and t-1; D_{event} is a set of

dummies for the year of trade liberalization; *Strengthening of promoters* is the measure of the change in the relative strength of promoters as defined as in equation (3); and ε_c and μ_{event} are country and event error components. α , β , and δ are the parameters to be estimated. Our hypothesis is that the coefficient of interest β is positive and statistically significant.

We do not include stock market measures of financial development in the analysis mainly for data reasons. A number of countries in the sample simply do not have a stock market, and, for those that do, traditional data sources only provide indicators for very recent periods (from 1992 or 1996), well after the date when they liberalized trade. This reduced the sample significantly and we did not obtain any clear-cut result. We also think that within industry heterogeneity is likely to be much more important in the decision of whether to promote or oppose stock market development than the cross-industry heterogeneity we exploit in this paper. While virtually all firms within an industry will depend on bank credit, only a few firms (the very large ones) will even consider going public.

Table A1 shows the basic characteristics of the sample of 41 countries¹⁵. The mean (median) value of the change in private credit is 8% (6%) with a standard deviation of 19%. This confirms previous cross-country evidence on the positive relation between trade openness and financial development. This is reassuring given the difficulty in interpreting cross-country relationships. Here fixed-country characteristics are implicitly controlled for, and although complete exogeneity cannot be claimed, the dependent variable at least follows in time the change in openness.

Note, however, that although significantly positive, there is important cross-country variation in the change in private credit that follows trade liberalization. A 95% confidence interval places the effect between 2.4 and 13.4 points of GDP. Moreover, for 12 of the 41 countries in the sample private credit actually decreases. The dispersion of private credit right before trade liberalization is, in comparison, quite small: 17% over a mean of 24%. The correlation between initial credit and its change is negative (-0.23) but not significant. The statistical moments suggest that there is ample variation across countries in the change in private credit that cannot be explained simply by initial conditions or any time-invariant country characteristic for that matter. The *Strengthening of Promoters* variable also displays ample variation: it is centered on a mean (median) of zero (-1%) with a standard deviation of 4%.

Our sample only includes countries that did liberalize trade. Sample selection (i.e. the fact that some countries choose to open up for trade while others do not) potentially has an effect on the size of the constant in (5); however it plays no role in the identification of the coefficient for political economy variable. This is an important advantage of our methodology since we need not worry about the interaction between the decisions to liberalize trade and the financial system. This is not to say that we

can safely treat trade and financial liberalization as independent. There are other possibilities. One is related to the timing of liberalization. For instance, some countries may have liberalized trade when the rest of the world was more open to the flow of both goods and capital, which might translate to higher impact on trade volume and capital flows-induced deepening of bank credit. This could show up through *strengthening of promoters* if relative world prices across sectors were themselves a function of global trade time-varying characteristics such as the long term decline of textiles or the diverse cyclical properties of industries around the world business cycle (in terms of durability, for instance). To address the issue of timing in a very general way, specification (5) includes trade liberalization year fixed effects. Lastly, we allow for heteroskedasticity and the possibility of errors to be clustered around trade liberalization dates.

Main Result

The first column in Table III shows that the coefficient of the *strengthening of promoters* is positive and highly significant. The initial level of private credit to GDP turns out not to be significantly associated with subsequent changes in the variable after the event. Figure VIa, which plots the partial relationship derived from the regression above, makes more apparent the sense in which the mean change in financial development after trade liberalization is not a very useful statistic in gauging the relationship between the two variables. It also shows that there is no noticeable clustering around geographical or economic dimensions¹⁶. The degree of trade liberalization-induced strengthening of promoters does a good job in explaining the heterogeneous evolution of financial development. It alone explains around one fourth of the variation in the dependent variable not accounted for in the initial level of financial development and the fixed effects. Furthermore, the relation does not seem to be driven by a few influential outliers but rather to be a robust pattern in the data.

Figure VIb shows the time pattern of private credit around the liberalization event. The figure plots average private credit to GDP against event time separately for the group of countries that score above and below the median in the *strengthening of promoters* variable¹⁷. Before trade liberalization the two groups are remarkably similar both in terms of the level of bank credit (around 25% of GDP) and its evolution. Shortly after liberalization, though, the group of countries for which the shock advances the political prospects of improving the financial system shows rapidly increasing private credit, ending up at around 45% of GDP or almost twice the value before the event. In contrast, in the countries where conditions for developing the financial system do not improve as much, private credit shows on average no significant change, ending up at roughly the same level as before. The post-liberalization difference between the two groups is quite large, comparable to the distance between Denmark and Ecuador or Chile and Libya in the 1990s.

One can alternatively rely on quantity measures that, although indirect, also suggest the existence of incumbent rents. We compute the strengthening of promoters of financial development substituting the effect of financial development on margins with the effect of financial development on average firm size across industries. The average firm size measure has been used before in similar contexts¹⁸. The ranking of industries along this dimension turns out to be almost identical to the one based on margins, and therefore to yield very similar results in terms of its power to explain trade liberalization-induced financial development (see column 5).

Supply or Demand

The result in the first column, although indicative, does not necessarily imply that financial development was formerly constrained by poor policy. Demand considerations are also a possibility. In fact, whether the level of financial development responds primarily to demand or to supply factors has been the main issue in this literature at least since the pioneering efforts of Goldsmith (1969). In our context, trade liberalization, and more generally the reform process, can shift the investment possibility frontier and thus alter the demand for funds. This would introduce omitted variable bias if the change in demand for funds happened to be correlated with the strengthening of promoters variable.

Columns 2 and 3 (6 and 7 for the size-based measure of strengthening of promoters) try to address the issue by adding two controls thought to be associated with investment possibilities and the demand for funds: the changes in GDP growth and in the investment rate around the liberalization date, respectively. Neither the effect of trade liberalization on GDP growth nor its effect on the change in the investment rate seems to be driving our result. They do not enter significantly nor do they materially affect the size of the coefficient for strengthening of promoters.

It might still be the case that growth or investment take time to become visible or that they are just poor measures of the change in investment possibilities. Instead of trying to measure how the frontier shifts one can assume that countries were initially close to their own frontier and that this frontier shifts out to achieve a common level for all countries that liberalize (a level given by common world factors). If this is so, a country's initial position can be used as a measure of the distance to the expanded frontier or new investment possibilities. We approximate each country's initial position with the average GDP per capita in the 5-year period preceding trade liberalization. Again, adding this variable has no effect on our results (columns 4 and 8).

Endogeneity of Trade Liberalization and Further Robustness

Why would some countries open up for trade knowing that this would unleash political economy forces leading to financial underdevelopment? Wouldn't the agents involved anticipate the effects? This

issue is important but should not be overemphasized. First, trade liberalization has been shown to have a positive effect (for the effect on growth, see Sachs and Warner (1995)), so that it may be worthwhile to open up even at the cost of having a relatively less well developed financial system. Second, our result shows that on average trade liberalization is associated with 8 points of GDP higher private credit; only a few countries actually decrease their degree of development in absolute terms. Furthermore, the exact effect of trade liberalization across sectors might not be obvious a-priori (see, for instance, the argument put forward by Hausmann and Rodrik (2002)). In expectation the effect on subsequent financial development is in fact an additional benefit in the aggregate.

The general issue we are concerned with is the existence of a third (omitted) variable driving both the political economy variable and financial development. Having included only countries that actually liberalized and also controlled for the timing of the decision, the issue speaks to the reasons for liberalizing trade and how these can interact with that of developing the financial system. Trade and financial liberalization do not necessarily come isolated but may be part of a reform process that includes both. To introduce bias in our estimation one needs to argue that the reason why some countries adopt them together and others don't is correlated with the strengthening of promoters variable.

One possibility is that the degree of bundling of policies is a function of local forces. The outcomes of initial reforms may matter a lot in securing political support for the next round (see, for the case of mass privatization, Roland and Verdier (1994), and Boycko et al (1995)). It might be that the countries we see developing their financial systems faster do so not because the political balance between promoting and opposing incumbents change, but simply because the first round of reforms (trade liberalization) worked well and the liberalization process gained further political support. We check this by introducing the effect of trade liberalization on the volume of trade, which we compute in the same way we do the effect on private credit. The correlation between this variable and the political economy one is negative and non-significant, and when included in the regression appears insignificantly negative leaving the results mostly unaltered (see column 1, Table IV).

Another possible explanation is that countries may be more likely to liberalize trade and the financial system when the external conditions are most favorable. If terms of trade were associated more tightly with the prices of opponent industries, and tended to mean-revert, there could be a spurious association between the strengthening of promoters and financial development. The correlation between the strengthening of promoters and the initial terms of trade (the average for the 5 years preceding trade liberalization) -although positive- turns out to be small and not significant. When the initial level of terms of trade is included in the benchmark regression (column 2) it does not enter significantly. Similar results

were obtained when measuring the ex-ante incentives to liberalize using the growth rate of trading partners (not reported).

Cross-industry incentives can also be at the heart of the reasons to liberalize trade. It may be that those countries that developed the financial system further after opening to trade just happened to be those in which promoters of trade and finance coincided, and not necessarily those in which promoters of financial development were strengthened by trade liberalization.¹⁹ We addressed this concern in the following way, for each group (promoters and opponents of financial development) we computed the average margin for those industries in the US in the period right before trade liberalization. We interpret the margin in the US as the (normalized) international price of output and take the difference of it across groups as an indicator of the relative incentive of promoters of financial development to liberalize trade. Column 3 shows that this is not the case: this variable is virtually uncorrelated with our basic one and does not enter significantly in the regression.²⁰

A final possibility is that the link between the simultaneity of reforms and the strengthening of promoters may result from technological factors. If among countries that liberalized trade only those that were initially capital scarce also engaged in financial liberalization, a trivial relation may appear between the strengthening of promoters and financial development. This relation could result from the possible response of the PCM of capital-intensive industries to the decline in the relative price of capital in capital-scarce countries predicted by standard trade theory. To control for this possibility we directly add a measure of the relative abundance of capital before trade liberalization to our benchmark regression. If this mechanism were important, this measure should be negative and significant, while our measure of promoter's strengthening should become statistically and economically insignificant. The results reported in column 4 show that, on the contrary, the initial level of capital per worker has a positive and insignificant coefficient, while the coefficient for the strengthening of promoters is largely unaffected.

The politics of trade liberalization do not seem, at least in this sample, tightly intertwined with the specific political economy mechanism of financial development discussed here. The fact that almost all countries decided to liberalize in a relatively short period of time, and that this time happened to coincide with the emergence of a strong international political agenda towards free trade points to the view that the trade process was more the result of external forces, and largely independent of the financial development ones.

Still, external forces can also be related to the bundling of reforms. One case would be that of a country subject to the structural reforms conditionality of IMF programs. We do not have data on the exact conditions imposed by each IMF program in each country. However, we can measure the likelihood that the IMF involvement implied the commitment to all-encompassing reforms (as opposed to just trade-

related ones) with the ratio of funds disbursed to GDP in the period preceding trade liberalization. The variable enters positively (although not significant) in the regression (column 4). The coefficient of the strengthening variable remains unchanged suggesting that, even if the extent of IMF intervention can explain in part the extent of reforms, this is not what the political variable is picking up.

A major crisis can be thought of as an event that triggers conflict between powerful groups that would otherwise coexist while extracting rents out of weaker groups (Tornell (1998)). The existence of a crisis prior to trade liberalization can be correlated with the strengthening of promoters if the industries in this group tend to be more affected and therefore to see a larger recovery in their margins once the crisis is over. In columns 5 and 6 we add, respectively, indicators for the existence of economic (GDP growth below -5%) and political (government crisis or revolution, from Arthur S. Banks Cross-National Time Series Data Archive) crisis in the five years prior to trade liberalization. Interestingly, the likelihood that financial development follows trade liberalization seems to be lower, not higher if a crisis supposedly motivated the reforms (both coefficients are negative and of relevant economic magnitude). The mechanism is independent to the one we propose, though.

We conducted a number of additional robustness tests that are not reported. We formed groups of industries based on whether the response of their PCM to GDP per capita, to the economy size, to country physical capital abundance and industry capital intensity, and to country openness to trade, was above or below the median level, measured their strengthening around trade liberalization dates in a similar way as above, and included them as additional regressors in our benchmark specification. The idea was to determine whether our measure of strengthening of promoters was driven by other variables that are likely to change around trade liberalization. We also played with the size of the windows used to measure the change in PCMs and the change in financial development, excluded industries (tobacco and oil) for which the country-specific PCM might not be a very good measure of rents because of country-industry specific tax rate variation, and excluded industries located two deciles around the median of the sensitivity of PCM to financial development to keep just the industries that clearly belong to one or the other group. None of these affected the result in a material way.

In column 8 we report coefficients and standard errors for the benchmark regression (in column 1, Table III) obtained by performing a parametric bootstrapping on the sensitivities of the different industry's PCM to financial development. This procedure addresses the problem of “generated regressors” that can bias the OLS-based inference. The bootstrapping procedure takes explicitly into account the imprecision of the estimated sensitivities and should therefore produce correct standard errors in our baseline regression. Also, by bootstrapping on the estimated sensitivities and looking at the empirical distribution of the coefficient we can rule out the possibility that our noisy classification

generates a significant relationship in our benchmark specification purely by chance. The mean coefficient obtained from the bootstrapping procedure is very similar to the benchmark coefficient (although somewhat smaller), and most importantly, is still significant at the 1 percent level.²¹

We also defined promoters and opponents based on margins and financial development data across countries during the 1960s, with the idea of avoiding making this identification using data for the same period when most of the trade liberalizations occur (the 1980s and 1990s). This allowed us to examine this relationship in a period when the world as a whole was quite closed to international trade, and therefore the relative prices within countries were supposedly more dependent on local factors. The rank correlation between 1960s and the benchmark measures turned out quite high (0.68), and the results unchanged (see column 9). We experimented with other periods for the measurement of the margins elasticity to financial development and came to the conclusion that the results are not very sensitive to this issue²².

By looking at the difference between those industries with high and low sensitivities to financial development we are implicitly taken the estimated sensitivities into account, but in a discrete rather than continuous way. Although it would be possible to rely on the point estimates as measures of the degree of opposition of an industry to financial development instead of classifying the industries into two groups, we do not follow this route because it requires the specific numerical differences in coefficients across industries to have explanatory power. Given the lack of precision of individual estimates and the lack of significance of many one-to-one comparisons, we believe it is preferable instead to focus on the broad, statistically significant differences across groups of industries. We nevertheless checked the results using the continuous measure of strengthening in column 10. The coefficient on the continuous variable has the correct sign and similar magnitude as the one obtained with the discrete classification. However, as expected, the lack of precision of the measure built using the noisy values of the coefficients translates into lack of statistical significance. Moreover, when included together with our measure of strengthening (column 11) the coefficient is still not statistically significant and turns negative, which indicates that the positive coefficient obtained in column 10 was largely due to the correlation between this variable and the broad differences between groups captured in our preferred measure of strengthening.

The 1973 Oil Shock Event

Trade liberalization is not the only shock that can change the politics of financial development. In order to validate our results, we replicate the procedure with the 1973 oil shock. The main advantage of using the oil shock is the fact that this is more exogenous than trade liberalization. The disadvantages are that (because of data availability) our sample drops from 41 to 29 countries, and that since the oil shock affects all countries at the same time, we cannot include time fixed-effects. In Table V

we replicate our Table III benchmark results. To account for large differences in the importance of oil across economies, we add to the specification a dummy variable capturing whether the country is in North Africa or the Middle East, and a variable that measures the share of oil in total exports. Furthermore, given that (precisely because of its importance) in some countries the oil industry may be subject to different political processes, we present the results both including all industries and leaving the oil-related industries aside.

The coefficient associated to the *strengthening of promoters* enters positively and significantly as expected, suggesting that our previous results are not entirely related to the particular shock considered but can be generalized to other changes in the political balance between promoters and opponents of financial development. Again, the result is generally robust to the inclusion of several variables meant to capture changes in the demand of external finance, and is also robust to using the sensitivities of average firm size to financial development as the variable to classify industries as promoters and opponents (not reported).

Competing Explanations

The political economy mechanism we propose here is not the only one that can trigger financial sector reform. We consider a couple of alternatives in Table VI.

The first one is related to variation across industries in their dependence on external funds as in Rajan and Zingales (1998). Financial underdevelopment may constrain the growth of highly dependent industries. Countries with important financially dependent sectors that see their margins decline with trade liberalization may be more likely to encourage financial sector development. The opposite result is also possible since, by changing the relative desirability to invest across sectors, trade liberalization can have an effect on the aggregate demand for external funds. If margins increase more in sectors with higher demand for external funds it would not be surprising to find that the stock of credit increases for pure demand –and not for political economy- considerations. Interestingly, these alternative channels are not mediated by the strength of the different sectors in a political economy game, and so are quite distinct to the one we propose²³.

The worry here is that our measure of the effect of financial development on industry rents may be strongly correlated with dependence on external finance. Either a negative (as in the first hypothesis) or positive (as in the second one) correlation may be driving our results leading us to wrongly assign the effect to the strengthening of promoters. However, the correlation between external finance dependence and the effect of financial development on margins is 0.105, not significantly different from zero (p-value 51%). In columns 1 through 4 we test whether in countries with important financially dependent sectors

that see their margins decline with trade liberalization see their level of financial development increase or decrease. We do this by regressing the post-liberalization change in financial development against *Strengthening of high external finance dependence industries* (columns 1 and 2), and *External dependence-weighted changes in PCMs* (columns 3 and 4). The former is constructed in a way analogous to strengthening of promoters but using a dummy variable for high external finance dependence instead of the promoters indicator derived from Table 1. The latter is based on the continuous variable in Rajan and Zingales (1998). Consistent with the first alternative hypothesis –the political economy one- the level of financial development tends to decrease when dependent industries strengthen, albeit not significantly so. When this new measure is added to the benchmark specification, the variable enters insignificantly and does not affect the estimates for the coefficient of the *Strengthening of promoters* ²⁴.

At a very general level, what differentiates our story from non-political economy ones is that in the latter financial sector development would just be a function of incentives, and not also of the rents of the different players. The incentive for a country to reform and develop its financial system is likely related to the importance or relative size of the groups that benefit significantly from this. Trade liberalization may change the importance of these groups and trigger financial reform through a channel independent of ours. To test the competing hypotheses we built two measures of the change in the aggregate incentives to develop the financial system, and add them to our benchmark specification. The first measure is the *Change in Size of Promoters*, which corresponds to the change in the share of manufacturing value-added of promoters relative to opponents around trade liberalization. The second measure is the *Change in share of industry weighted by sensitivity of Margins to Financial Development*. This measure is the sum, across the 28 manufacturing sectors, of the product of each industry's η (see Table I) and the change in its share of manufacturing value-added around trade liberalization. For both measures, the changes in shares are computed in the 5 year window immediately around liberalization. The results, reported in columns 5 to 8, show that neither measure of the incentives to develop the financial system, whether alone or in addition to strengthening of promoters, is ever significant.

As an additional way of disentangling these two hypotheses, we also estimated the parameters of the levels version of our benchmark specification using country-year panel data:

$$FD_{c,t} = \alpha_c + \alpha_t + \gamma \ln(PCGDP_{c,t}) + \beta \times [Strength\ of\ promoters]_{c,t-1} + \lambda \times [Size\ of\ promoters]_{c,t-1} + \varepsilon_{c,t}$$

(6)

where FD is the level of private credit to GDP in country i at time t , $PCGDP$ is the level of per capita GDP, and α_c and α_t are country and time fixed effects, respectively. *Strength of Promoters* is measured at time $t-1$ assuming that the political economy mechanism takes some time to influence financial

development, and to partially address the endogeneity issue. For *Size of promoters*, we experimented with two different measures built using our discrete and continuous separation between promoter and opponent industries in a similar fashion as in the previous paragraph. *Relative size of promoters* is the difference in the share in value added of Promoters and Opponents, and *Share of industry weighted by sensitivity of Margins to Financial Development* is the product of the share of an industry in value added and our continuous estimates of the sensitivity of margins to financial development (Table I). The results of this estimation are reported in Table VII. They show that the lagged value of the strength of promoters is positively and significantly related to the level of financial development. When the relative size of promoters is used as the explanatory variable –either in its discrete or its continuous version- the coefficient is never significant. Furthermore, the strength of promoters is still positive and significant when both variables are added to the specification. With all the caveats of this type of estimation, we believe that finding the expected correlation between the strength of promoters and financial development in this setting is encouraging and provides an additional confirmation of our main results.

These two pieces of evidence favor the political economy hypothesis. Incentives or the aggregate benefit of developing the financial system alone do not seem enough to generate financial development. Rents in particular hands appear to be necessary to grease the wheels of the political machine.

IV. Conclusion

This paper showed that the trade liberalization-induced strengthening of promoters vis-à-vis opponents of financial development is a good predictor of subsequent changes in financial sector depth. From a policy standpoint the results are important in two ways. First, although deep institutional reasons play a role, to an important extent, countries have the level of financial development they choose. Policy convergence to best-practice standards is not likely to happen automatically unless the political economy conditions for such a change are present. Identifying and co-opting potential opponents might be necessary to ensure the political sustainability of reforms. Second, policies that on average have a liberalizing effect on markets are not by themselves enough to guarantee their extension to the financial system. They can even worsen the situation. In this sense, understanding the interrelation between reforms, and adjusting the timing accordingly seems of first order importance.

References

- [1.] Abiad, Abdul & Mody, Ashoka, 2003. "Financial Reform: What Shakes It? What Shapes It?," IMF Working Papers 03/70, International Monetary Fund.
- [2.] Acemoglu, Daron, and Simon Johnson, 2003, "Unbundling institutions," NBER Working paper no. 9934.
- [3.] Aizenman, J., 2004. "Financial Opening and Development: Evidence and Policy Controversies," *American Economic Review*, 94, n.2, 65-70.
- [4.] Aizenman, J. and Ilan Noy, 2004. "Endogenous financial and trade openness: efficiency and political economy considerations," NBER working paper.
- [5.] Allen, F. and Gale, D., 1999. "Comparing Financial Systems," MIT Press, Cambridge, MA.
- [6.] Beck, T., Levine R., Loayza N., 2000. "Finance and the sources of growth," *Journal of Financial Economics* 58, 261–300.
- [7.] Beck, T., 2002. "Financial Development and International Trade. Is there a Link?" *Journal of International Economics*, 57, 107-131.
- [8.] Boycko, M., A. Shleifer and R. Vishny, 1995. "Privatizing Russia," MIT Press.
- [9.] Braun, M., 2002. "Financial Contractibility and Assets Hardness," working paper.
- [10.] Braun and Larrain, 2005. "Finance and the Business Cycle: International, Inter-industry Evidence," *Journal of Finance*, 60, 1097-1128.
- [11.] Caprio, Gerard, Patrick Honohan, and Joseph E. Stiglitz, eds., 2001. "Financial Liberalization: How Far, How Fast?" (New York: Cambridge University Press).
- [12.] Cetorelli, N., 2001. "Does Bank Concentration Lead to Concentration in the Industrial Sector?" Federal Reserve Bank of Chicago WP 2001-01.
- [13.] Cetorelli, N., 2003. "Real Effects of Bank Concentration and Competition in Europe," Working Paper.
- [14.] Cetorelli, N. and Strahan P., 2003. "Finance as a Barrier to Entry: Bank Competition and Industry Structure in Local U.S. Markets," Federal Reserve Bank of Chicago WP 2004-04.
- [15.] Chevalier, 1995. "Capital Structure and Product Market Competition: Empirical Evidence from the Supermarket Industry," *American Economic Review* 85, 415-435.
- [16.] Chevalier, Judith, and David Scharfstein, 1996. "Capital-market imperfections and countercyclical markups: Theory and evidence," *American Economic Review* 86, 703-725.
- [17.] _____, 1995. "Liquidity Constraints and the Cyclical Behavior of Markups," *American Economic Review*, 85, pages 390-96.
- [18.] Chinn, Menzie, and Hiro Ito, 2002. "Capital Account Liberalization, Institutions and Financial Development: Cross-Country Evidence," NBER Working Paper 8697.
- [19.] Clarke, Roger & Davies, Stephen & Waterson, Michael, 1984. "The Profitability-Concentration Relation: Market Power or Efficiency?" *Journal of Industrial Economics*, Blackwell Publishing, vol. 32(4), pages 435-50, June.
- [20.] Collins, Norman, and Lee Preston, 1969, "Price-Cost Margins and Industry Structure," *Review of Economics and Statistics* 51 (1969), 271-286.

- [21.] Demirgüç-Kunt, A., Maksimovic, V., 1998. "Law, finance, and firm growth," *Journal of Finance* 53, 2107–37.
- [22.] Djankov, S., La Porta, R., López-de-Silanes, F., Shleifer, A., Vishny, R., 2003. "Courts", *The Quarterly Journal of Economics*, vol. 118, no. 2, pp. 453-517 (65).
- [23.] Domowitz, I., R.G. Hubbard, and B. Petersen, 1986. "Business Cycles and the Relationship Between Concentration and Price-Cost Margins," *Rand Journal of Economics*, Volume 17, Spring 1986, pp. 1-17.
- [24.] Easterly, W. and Ross Levine (2001). "It's not factor accumulation: stylized facts and growth models", *The World Bank Economic Review*, 15 (2), 177-219.
- [25.] Encaoua and Jacquemin (1980). "Degree of monopoly, indices of concentration and threat of entry," *International Economic Review* 21, 87-105.
- [26.] Fanelli, José Maria, and Rohinton Medhora (editors), 1998. "Financial Reform in Developing Countries," (Houndmills, UK:IDRC Books and Macmillan Press, Ltd).
- [27.] Guiso, Luigi; Sapienza, Paola and Zingales, Luigi., 2004. "The Role of Social Capital in Financial Development," *The American Economic Review*, 94(3), pp. 526.
- [28.] Glaeser, E, S. Johnson, and A. Shleifer, 2001. "Coase v. the Coasians," *Quarterly Journal of Economics*, 116 (3), 853-900.
- [29.] Goldsmith, R., 1969. *Financial structure and development*. Yale University Press, New Haven, CT.
- [30.] Hausmann, R. and D. Rodrik, 2002. "Economic Development as self-discovery," *Journal of Development Economics* 72(2), 603-633.
- [31.] International Monetary Fund, 2001, *Structural Conditionality in Fund-Supported Programs*.
- [32.] Jayaratne, J., Strahan, P. E., 1996. "The finance-growth nexus: Evidence from bank branch deregulation," *Quarterly Journal of Economics* 111, 639–70.
- [33.] King, R. G., Levine, R., 1993. "Finance and growth: Schumpeter might be right," *Quarterly Journal of Economics* 58, 717–37.
- [34.] Kroszner, Randall S., 2000. "The Economics and Politics of Financial Modernization," *Federal Reserve Bank of New York Economic Policy Review*, 6(4), 25-37.
- [35.] _____, 1998. "The Political Economy of Banking and Financial Regulatory Reform in Emerging Markets," *Research in Financial Services* 10, pp. 33.
- [36.] Kroszner, Randall S. and Philip E. Strahan, 2000. "Obstacles to Optimal Policy: The Interplay of Politics and Economics in Shaping Bank Supervision and Regulation Reforms," CRSP working papers 512, Center for Research in Security Prices, Graduate School of Business, University of Chicago.
- [37.] _____, 1999. "What Drives Deregulation? Economics and Politics of the Relaxation of Bank Branching Restrictions," *Quarterly Journal of Economics* 114(4), 1437-1467.
- [38.] Loayza, Norman and Romain Ranciere, 2001. "Financial Fragility, Financial Development, and Growth," *World Bank, Development Research Group*, January 2002
- [39.] La Porta, R., López-de-Silanes, F., Shleifer, A., Vishny, R., 1997. "Legal determinants of external finance," *Journal of Finance* 52, 1131–50.
- [40.] _____, 1998. "Law and finance," *Journal of Political Economy* 106, 1113–55.

- [41.] Morck, R., D. Strangeland, and B. Yeung, 1998. "Inherited Wealth, Corporate Control, and Economic Growth: The Canadian Disease," NBER Working Paper #6814.
- [42.] Pagano, Marco, and Paolo F. Volpin, 2004a. "The Political Economy of Corporate Governance," *American Economic Review*, 2004 forthcoming.
- [43.] _____, 2004b. "Managers, Workers, and Corporate Control," *Journal of Finance*, 2004 forthcoming.
- [44.] Phillips, Gordon, 1995. "Increased Debt and Industry Product Markets: An Empirical Analysis," *Journal of Financial Economics*, 1995, 37, 189-238.
- [45.] Raddatz, C., 2006. "Liquidity Needs and Vulnerability to Financial Underdevelopment," *Journal of Financial Economics*, 80, 677-722.
- [46.] Rajan, R., Zingales, L., 1998. "Financial dependence and growth," *American Economic Review* 88, 559-86.
- [47.] _____, 2003. "The great reversals: The politics of financial development in the twentieth century," *Journal of Financial Economics* 69(1), 5-50.
- [48.] Rodrik, D., 1996. "The Political Economy of Trade Policy," 1996, in G. Grossman and K. Rogoff, eds., *Handbook of International Economics*, Vol. III, North-Holland, Amsterdam.
- [49.] Stulz, Rene M. and Rohan Williamson, 2003. "Culture, Openness, and Finance," *Journal of Financial Economics* 70(3), 313-349.
- [50.] Roland, Gerard and Verdier, Thierry, 1994. "Privatization in Eastern Europe : Irreversibility and critical mass effects," *Journal of Public Economics* 54(2), 161-183.
- [51.] Sachs, J. D. and Warner, A. M., 1995. "Economic reform and the process of global integration," *Brookings Papers on Economic Activity*, 1-118.
- [52.] Siegel, J., 2003. "Is Political Connectedness a Paramount Investment After Liberalization? The Successful Leveraging of Contingent Social Capital and the Formation of Cross Border Strategic Alliances Involving Korean Firms and their Global Partners (1987-2000)." Harvard Business School Working Paper.
- [53.] Stigler, G., 1971. "The Theory of Economic Regulation", *Rand Journal of Economics* 2(1), 3-21.
- [54.] Svaleryd, H. and J. Vlachos, 2004. "Financial markets, the pattern of industrial specialization and comparative advantage: Evidence from OECD countries," *European Economic Review* 49(1), 113-144.
- [55.] Tornell, A., 1998. "Reform from Within," NBER Working Paper 6497.
- [56.] UNIDO (United Nations Industrial Development Organization), 2001. *Industrial statistics database* (UNIDO, New York) CD-ROM.
- [57.] World Bank, 2003. *World Development Indicators* (World Bank, Washington) CD-ROM.
- [58.] Wacziarg, Romain and Karen Horn Welch, 2003. "Trade Liberalization and Growth: New Evidence," NBER Working Paper 10152.
- [59.] Williamson, John and Mahar Molly, 1998. "A Survey of Financial Liberalization," *Princeton Essays in International Finance*. No. 211, November.
- [60.] Wurgler, Jeffrey, 2000. "Financial markets and the allocation of capital," *Journal of Financial Economics* 58, 187-214.

Table I. Financial Development and Industry Margins

The table shows the coefficients obtained for the industry dummies that capture the sensitivity of each industry's price-cost margin to financial development in a regression of the price cost margin of each industry in each country on an industry dummy, a country dummy, and an industry dummy interacted with each country's level of private credit (these last dummies are the ones reported below). The data for the regression corresponds to averages of the variables for the period 1980-2000. The parameters were obtained by 2SLS instrumenting the level of private credit for each country's legal origin. The standard errors are robust to heteroskedasticity and clustered by country.

Industry	ISIC	Financial Dev. Effect	Standard Error	Demeaned Financial Dev. Effect	Promoters
Refineries	353	-0.181	0.067	-0.217	0
Other Metals	372	-0.049	0.048	-0.085	0
Footwear	324	-0.038	0.050	-0.074	0
Leather	323	-0.036	0.048	-0.072	0
Beverage	313	-0.007	0.080	-0.043	0
Other	390	-0.007	0.045	-0.043	0
Wood	331	-0.003	0.057	-0.039	0
Food	311	-	-	0.038	0
Textiles	321	0.010	0.039	-0.026	0
Transportation Equipment	384	0.021	0.055	-0.015	0
Electrical Machinery	383	0.031	0.048	-0.005	0
Pottery	361	0.038	0.063	0.002	0
Petroleum	354	0.039	0.072	0.003	0
Rubber	355	0.043	0.048	0.007	0
Other Mineral	369	0.044	0.045	0.008	1
Apparel	322	0.045	0.042	0.009	1
Professional Equipment	385	0.046	0.064	0.010	1
Plastic	356	0.047	0.051	0.011	1
Machinery	382	0.049	0.047	0.013	1
Furniture	332	0.052	0.043	0.016	1
Paper	341	0.052	0.048	0.016	1
Fabricated Metals	381	0.060	0.045	0.024	1
Iron	371	0.068	0.047	0.032	1
Industrial Chemicals	351	0.075	0.059	0.039	1
Printing	342	0.088	0.053	0.052	1
Glass	362	0.126	0.048	0.090	1
Tobacco	314	0.187	0.249	0.151	1
Other Chemicals	352	0.198	0.065	0.162	1

Table II. Persistence of Financial Development and Trade Liberalization

Whole Sample (73 countries)

	Mean	St. Dev.	Median	Minimum	Maximum
Private Credit Rank in 1995-99	37.0	21.2	37.0	1	73
Private Credit Rank in 1970-74	37.0	21.2	37.0	1	73
Change in Rank	0.0	0.0	0.0	-28	48
Share of Variance of Rank1995-99 explained by Rank1970-74	51.0%				
Rank Correlation Private Credit 1970-74 / 1995-99	0.677***				

Liberalizers (28 countries)

	Mean	St. Dev.	Median	Minimum	Maximum
Private Credit Rank in 1995-99	29.6	15.9	30.0	3	67
Private Credit Rank in 1970-74	25.7	14.5	22.5	4	64
Change in Rank	3.9	19.1	1.0	-28	48
Share of Variance of Rank1995-99 explained by Rank1970-74	4.6%				
Rank Correlation Private Credit 1970-74 / 1995-99	0.136				

Non-Liberalizers (45 countries)

	Mean	St. Dev.	Median	Minimum	Maximum
Private Credit Rank in 1995-99	41.6	22.9	48.0	1	73
Private Credit Rank in 1970-74	44.0	21.8	49.0	1	73
Change in Rank	-2.4	13.5	-1.0	-25	32
Share of Variance of Rank1995-99 explained by Rank1970-74	67.0%				
Rank Correlation Private Credit 1970-74 / 1995-99	0.756***				

* significant at 10%; ** significant at 5%; *** significant at 1%

Table III. Trade liberalization and the political economy determinants of financial development

The dependent variable is, for each country, the change in private credit to GDP between the period t-5 to t-1 and the period t+5 to t+10, where t denotes the year in which the country liberalized trade. *Strengthening of promoters* is the difference between the average (value added weighted) change in the price-cost margin of the promoters and opponents groups. Promoters (opponents) are those industries that score higher than median in the measure of the effect of financial development on margins (columns 1 through 4) and average firm size (columns 5 through 8). The change in the price-cost margin for each group is computed as the difference in the margin between the period t-5 to t-1 and t to t+5. Errors (in parentheses below each coefficient) are robust to heteroskedasticity and allow for clustering by year of trade liberalization. Liberalization year fixed effects included but not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

	Margins Measure				Size Measure			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Initial Private Credit to GDP	-0.094 (0.169)	-0.065 (0.193)	-0.150 (0.207)	-0.129 (0.324)	-0.056 (0.193)	-0.025 (0.216)	-0.131 (0.229)	-0.153 (0.336)
Strengthening of Promoters	4.019** (1.413)	3.798** (1.517)	4.014** (1.449)	3.875** (1.345)	3.713** (1.587)	3.623* (1.846)	3.894** (1.633)	3.638** (1.457)
GDP growth		0.065 (0.319)				-0.026 (0.342)		
Change in Investment rate			-0.301 (0.860)				-0.341 (0.822)	
Ln (Initial GDP per capita)				0.008 (0.066)				0.023 (0.062)
Constant	0.367*** (0.052)	0.357*** (0.090)	0.209 (0.158)	-0.094 (0.488)	0.452*** (0.030)	0.457*** (0.080)	0.235 (0.173)	-0.234 (0.462)
Observations	41	39	38	40	41	39	38	40
R-squared	0.54	0.55	0.54	0.54	0.50	0.52	0.52	0.52

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table IV. Endogeneity of Trade Liberalization and Further Robustness

The dependent variable is, for each country, the change in private credit to GDP between the period t-5 to t-1 and the period t+5 to t+10, where t denotes the year in which the country liberalized trade. *Strengthening of promoters* is the difference between the average (value added weighted) change in the price-cost margin of the promoters and opponents groups. Promoters (opponents) are those industries that score higher than median in the measure of the effect of financial development on margins. The change in the price-cost margin for each group is computed as the difference in the margin between the period t-5 to t-1 and t to t+5. *Change in Volume of Trade* is computed as the change in the ratio of imports plus exports to GDP between the period t-5 to t-1 and the period t+5 to t+10. *Ln(Initial Terms of Trade)* is the average Terms of Trade (1995=100) in t-5 to t-1. *Strength of Promoters in the US* is the average margin (t-5 to t-1) in the US of promoters minus that of opponents. *Initial capital abundance* is the (log) average value of capital per worker from t-5 to t-1 constructed using data from Easterly and Levine (2001). *Initial IMF Disbursement to GDP* is the average ratio of IMF disbursements to GDP between t-5 and t-1. *Economic Crisis* is a dummy equal to one if GDP growth is lower than -5% in any year during the t-5 to t-1 period, and zero otherwise. *Political Crisis* is a dummy that takes one if either a government crisis or revolution happens during t-5 to t-1, and zero otherwise. *Sensitivity weighed change in PCMs* is the change in the price-cost margin of different industries weighed by the sensitivity of each industry's PCM to financial development. In (8) the coefficients and standard errors correspond to the means and standard deviations of the empirical distributions obtained after performing a parametric bootstrapping on the sensitivities of different industries to financial development. In (9) the effect of financial development on margins is measured using cross-country data for the 1960s only. Except from (8), errors (in parentheses below each coefficient) are robust to heteroskedasticity and allow for clustering by year of trade liberalization. Liberalization year fixed effects included but not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Initial Private Credit to GDP	-0.126 (0.235)	-0.105 (0.182)	-0.098 (0.177)	-0.129 (0.231)	-0.057 (0.296)	-0.196 (0.173)	-0.089 (0.172)	-0.086 (0.030)	-0.098 (0.184)	0.115 (0.221)	-0.049 (0.167)
Strengthening of Promoters	3.812** (1.487)	4.001** (1.512)	4.247*** (1.384)	3.806** (1.341)	4.110** (1.598)	4.047** (1.378)	5.142** (1.964)	2.880*** (0.664)	1.567** (0.630)		5.487** (2.226)
Change in Volume of Trade	-0.182 (0.206)										
Initial Terms of Trade		-0.043 (0.306)									
Strength of Promoters in the US			0.362 (0.524)								
Initial Capital Abundance				0.016 (0.046)							
Initial IMF Disbursement to GDP					0.958 (3.291)						
Economic Crisis							-0.106* (0.054)				
Political Crisis							-0.069** (0.032)				
Sensitivity weighed change in PCMs										9.965 (12.570)	-13.730 (10.235)
Constant	0.001 (0.092)	0.175 (1.473)	0.368*** (0.052)	0.21598 (0.442)	-0.040 (0.074)	0.239*** (0.020)	0.239** (0.102)	0.416*** (0.055)	0.448*** (0.028)	0.483*** (0.049)	0.358*** (0.060)
Observations	38	39	41	41	32	41	41	41	41	41	41
R-squared	0.56	0.54	0.55	0.54	0.50	0.59	0.61	0.49	0.52	0.42	0.56

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table V. The Oil Shock and the political economy determinants of financial development

The dependent variable is, for each country, the change in private credit to GDP between the period t-5 to t-1 and the period t+5 to t+10, where t corresponds to 1973. Strengthening of promoters is the difference between the average (value added weighted) change in the price-cost margin of the promoters and opponents groups. Promoters (opponents) are those industries that score higher than median in the measure of the effect of financial development on margins. The change in the price-cost margin for each group is computed as the difference in the margin between the period t-5 to t-1 and t to t+5. In columns 5 through 7 the industries of Petroleum Refineries and Miscellaneous Oil Products are dropped from all computations. Errors (in parentheses below each coefficient) are robust to heteroskedasticity and allow for clustering by year of trade liberalization. Liberalization year fixed effects included but not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

	All Industries				Non-Oil Industries only				
	(1)	(2)	(3)	(4)	(5)	(6)	(6)	(7)	(7)
Initial Private Credit to GDP	0.102 (0.111)	0.097 (0.098)	0.101 (0.123)	-0.079 (0.133)	0.129 (0.127)	0.106 (0.112)	0.117 (0.138)	-0.053 (0.149)	0.192 (0.147)
Strengthening of Promoters	2.622** (1.166)	2.738** (1.274)	2.793** (1.203)	2.958** (1.069)	2.597** (1.119)	2.427* (1.331)	2.530* (1.270)	2.686** (1.131)	1.629* (0.852)
Initial Oil to total Exports	0.004*** (0.001)	0.004*** (0.001)	0.004*** (0.001)	0.003*** (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)	0.001 (0.001)
Middle-East & North Africa	0.238** (0.090)	0.195* (0.110)	0.205* (0.109)	0.207** (0.082)	0.162** (0.076)	0.136 (0.109)	0.146 (0.116)	0.148* (0.083)	0.163* (0.082)
GDP growth		0.017 (0.099)				0.041 (0.106)			
Change in Investment rate			-0.064 (0.373)				0.002 (0.436)		
Ln (Initial GDP per capita)				0.049** (0.018)				0.048** (0.018)	
Constant	-0.011 (0.038)	-0.019 (0.056)	-0.014 (0.041)	-0.345** (0.123)	-0.007 (0.037)	-0.016 (0.056)	-0.004 (0.039)	-0.329** (0.122)	-0.025 (0.038)
Observations	29	28	27	28	29	28	27	28	29
R-squared	0.36	0.33	0.33	0.46	0.33	0.26	0.26	0.38	0.39

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table VI. Competing Explanations

The dependent variable is, for each country, the change in private credit to GDP between the period t-5 to t-1 and the period t+5 to t+10, where t corresponds to 1973. Strengthening of promoters is the difference between the average (value added weighted) change in the price-cost margin of the promoters and opponents groups. Promoters (opponents) are those industries that score higher than median in the measure of the effect of financial development on margins. The change in the price-cost margin for each group is computed as the difference in the margin between the period t-5 to t-1 and t to t+5. *Strengthening of high external finance dependence industries* is constructed in a way analogous to strengthening of promoters but using a dummy variable for high external finance dependence instead of the promoters indicator. *External dependence-weighted changes in PCMs* are based on the continuous variable in Rajan and Zingales (1998). *Change in Size of Promoters* was computed as the pre-post trade liberalization change in the share of value added of each industry using the t-5 to t-1, and t+1 to t+5 averages and the promoters/opponents discrete classification. *Change in share of industry weighted by sensitivity of Margins to Financial Development* is analogous but uses the continuous version of the sensitivity of margins to financial development. Errors (in parentheses below each coefficient) are robust to heteroskedasticity and allow for clustering by year of trade liberalization. Liberalization year fixed effects included but not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Initial Private Credit to GDP	-0.067 (0.241)	-0.102 (0.167)	-0.093 (0.208)	-0.980 (0.165)	-0.071 (0.227)	-0.090 (0.176)	-0.081 (0.224)	-0.052 (0.163)
Strengthening of Promoters		4.526*** (1.334)		3.895*** (1.428)		3.808** (1.542)		4.478** (1.696)
Strengthening of High External Finance Dependent Industries	1.903 (1.897)	-0.886 (1.308)						
External Finance Dependence-weighted change in PCMs			-5.678 (8.489)	-1.573 (7.077)				
Change in Size of Promoters					0.409 (0.508)	0.121 (0.472)		
Change in share of industry weighted by sensitivity of Margins to Financial Development							3.769 (75.55)	-56.65 (64.52)
Constant	0.449*** (0.069)	0.379*** (0.062)	0.485*** (0.055)	0.363*** (0.062)	0.484*** (0.047)	0.365*** (0.055)	0.516*** (0.022)	0.356*** (0.057)
Observations	41	41	41	41	41	41	41	41
R-squared	0.43	0.55	0.43	0.54	0.44	0.55	0.40	0.55

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table VII. Levels Panel Regressions

The dependent variable is, for each country and year, the level of private credit as a fraction of GDP. *GDP per capita* is the contemporaneous level of GDP per capita in constant US dollars. *Strength of Promoters (lagged)* is the lagged value of the (share weighed) difference in PCM between those industries classified as promoters and those classified as opponents. Promoters (opponents) are those industries that score higher than median in the measure of the effect of financial development on margins. *Relative Size of Promoters* is the difference in the share in value added of Promoters and Opponents. For *Share of industry weighted by sensitivity of Margins to Financial Development* we used the continuous version of the sensitivity of margins to financial development. Errors (in parentheses below each coefficient) are robust to heteroskedasticity. Country and year fixed effects included but not reported. * significant at 10%; ** significant at 5%; *** significant at 1%.

	(1)	(2)	(3)	(4)	(5)
ln(GDP per capita)	0.329*** (0.020)	0.329*** (0.025)	0.334*** (0.025)	0.324*** (0.025)	0.327*** (0.025)
Strength of Promoters _{t-1}	0.285* (0.160)		0.369** (0.171)		0.297* (0.166)
Relative Size of Promoters _{t-1}		-0.026 (0.043)	0.016 (0.048)		
Share of industry weighted by sensitivity of Margins to Financial Development _{t-1}				14.280 (9.561)	7.742 (10.180)
Constant	-2.116*** (0.204)	-2.151*** (0.212)	-2.183*** (0.214)	-2.110*** (0.209)	-2.133*** (0.210)
Observations	844	844	844	844	844
R-squared	0.86	0.87	0.87	0.87	0.87

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

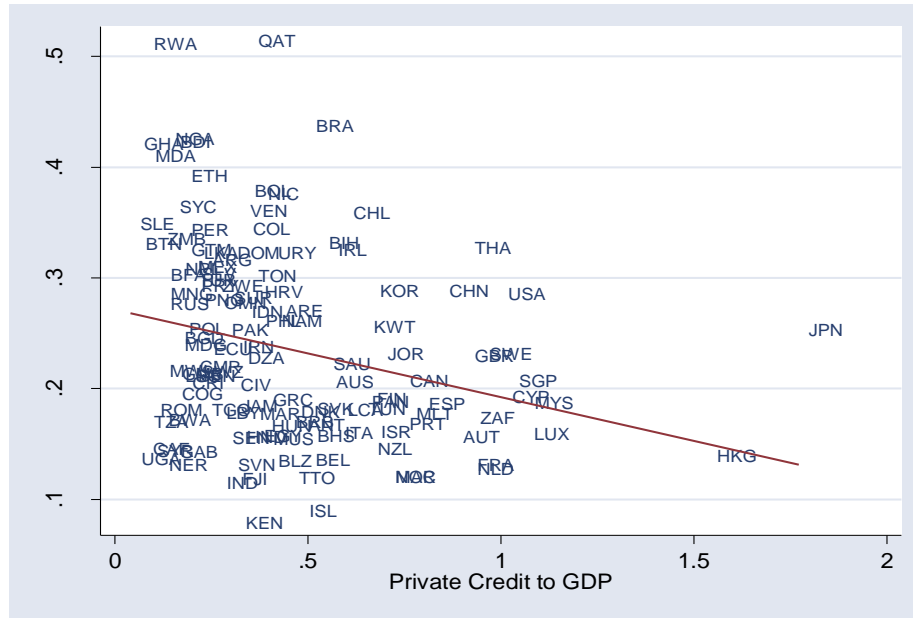
Table A1. Sample Characteristics

Country	Trade	Bank Credit to Private Sector to GDP			Strengthening of
	Liberalization	Initial	Final	Change	Promoters of Fin. Dev.
	Year				
Argentina	1991	0.22	0.22	0.00	0.002
Australia	1964	0.19	0.24	0.06	-0.001
Bangladesh	1996	0.17	0.28	0.11	-0.031
Bolivia	1985	0.12	0.37	0.25	0.025
Brazil	1991	0.43	0.30	-0.13	-0.018
Chile	1976	0.08	0.59	0.51	0.038
Cameroon	1993	0.23	0.08	-0.15	0.029
Colombia	1986	0.15	0.15	0.00	-0.001
Costa Rica	1986	0.18	0.12	-0.06	-0.037
Ecuador	1991	0.12	0.25	0.13	-0.026
Egypt	1995	0.24	0.54	0.30	0.087
Ethiopia	1996	0.06	0.23	0.17	-0.018
Ghana	1985	0.02	0.05	0.03	-0.013
Guatemala	1988	0.17	0.15	-0.02	-0.009
Honduras	1991	0.25	0.32	0.07	-0.013
Hungary	1990	0.38	0.25	-0.12	-0.012
Ireland	1966	0.33	0.27	-0.05	0.003
Israel	1985	0.71	0.62	-0.09	-0.010
Jamaica	1989	0.24	0.23	0.00	-0.014
Jordan	1965	0.17	0.23	0.06	-0.019
Japan	1964	0.74	0.86	0.12	0.007
Kenya	1993	0.20	0.25	0.05	-0.018
Korea	1968	0.12	0.33	0.22	0.000
Sri Lanka	1991	0.20	0.29	0.09	0.002
Morocco	1984	0.17	0.18	0.02	0.003
Mexico	1986	0.15	0.28	0.13	0.000
Nepal	1991	0.11	0.27	0.15	-0.009
New Zealand	1986	0.20	0.87	0.67	-0.001
Panama	1996	0.55	0.95	0.40	0.005
Peru	1991	0.07	0.25	0.18	-0.008
Philippines	1988	0.22	0.41	0.19	0.048
Poland	1990	0.04	0.23	0.20	0.016
Romania	1992	0.53	0.09	-0.44	0.006
Singapore	1965	0.36	0.52	0.16	-0.003
Slovenia	1989	0.07	0.04	-0.03	0.003
Trinidad & Tobago	1992	0.33	0.32	-0.01	0.037
Turkey	1989	0.18	0.20	0.03	-0.029
Tanzania	1995	0.12	0.05	-0.07	-0.007
Uruguay	1990	0.38	0.38	0.00	-0.004
Venezuela	1996	0.14	0.10	-0.04	0.001
South Africa	1991	0.52	0.69	0.17	-0.009
Mean		0.24	0.32	0.08	0.000
Median		0.19	0.25	0.06	-0.001
Std. Dev.		0.17	0.22	0.19	0.023
<u>Correlation with:</u>					
Initial Credit		1	0.58	-0.23	0.04
Final Credit			1	0.66	0.26
Change in Credit				1	0.28
Strengthening of Promoters of Fin. Dev.					1

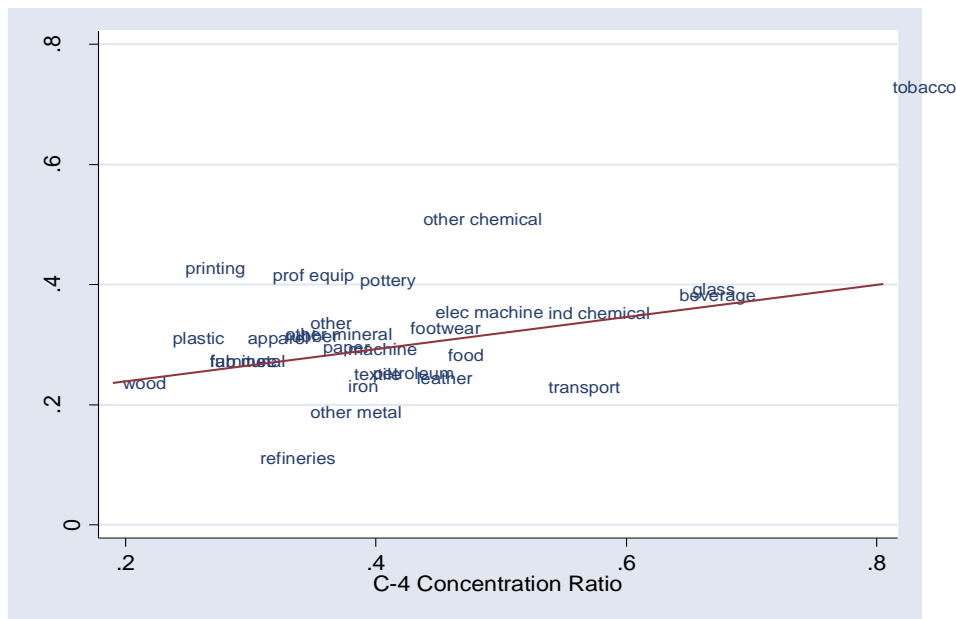
Figure I. Margins Decrease with Financial Development and Competition

Panel A plots, for a sample of countries, the average ratio of *Private Credit to GDP* during the 1980s and 1990s versus the average *Price-Cost Margin* in manufacturing during the same period. Panel B displays the relation between the *Price-Cost Margin* (on the x-axis) and the C-4 concentration ratio (on the y axis) across industries in the U.S. in 1992 (year for which we have data on the concentration ratio). The C-4 concentration ratio is the share of total output accounted for by the largest 4 firms in a given industry.

Panel A: Financial Development and Price-Cost Margins, Average 1980-2000.



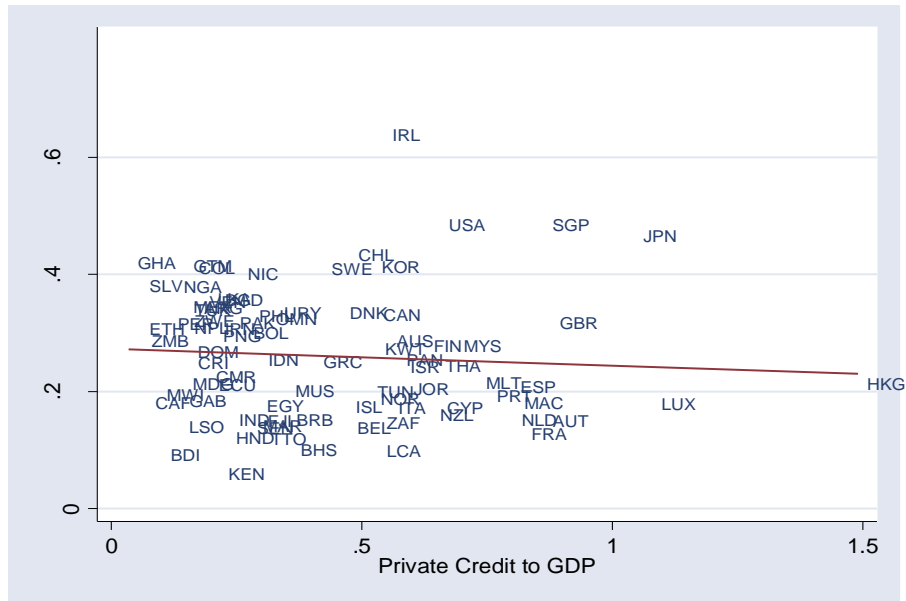
Panel B: Price-Cost Margins and Competition in the U.S., 1992.



**Figure II. Financial Development has a Heterogeneous Effect on the Margins of Industries:
Non-basic Chemicals vs. Textiles**

The two panels of the figure show the relation across countries between *Private Credit to GDP* and the average *Price-Cost Margin* during the period 1980-2000 for the Non Basic Chemicals and Textile industries (Panels A and B respectively).

Panel A: Non Basic Chemicals



Panel B: Textiles

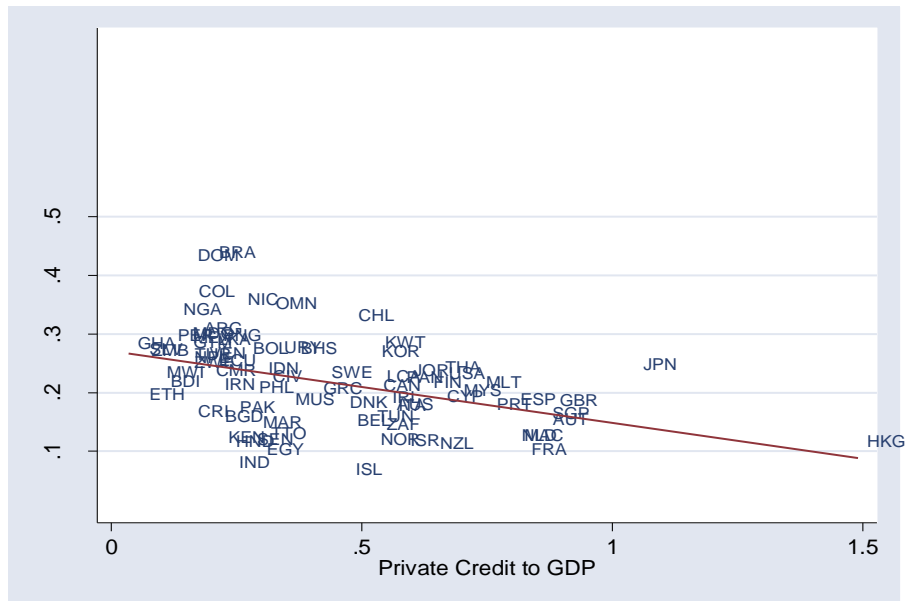
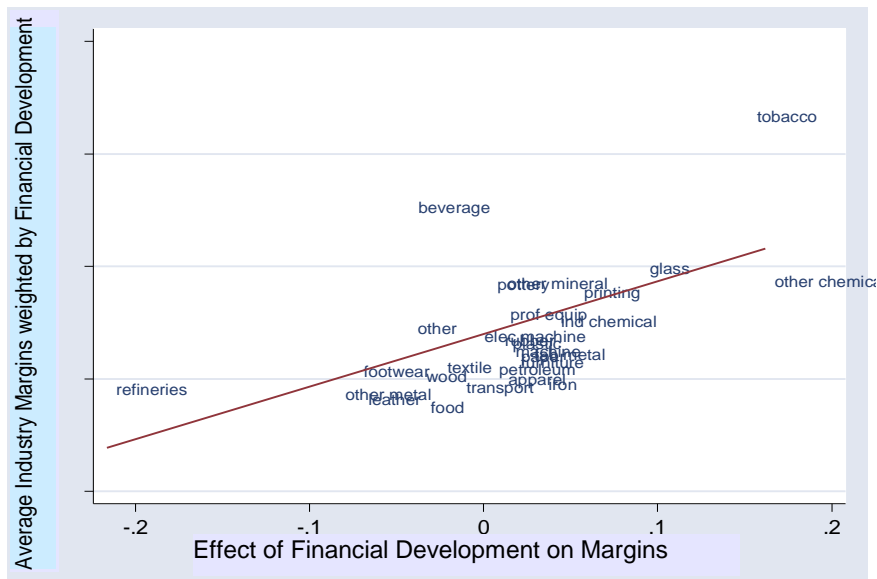


Figure III. Industry Margins and Average Firm Size Vary with Financial Development

The two panels of the figure summarize the relation between financial development and the average margins and size of different industries. Panel A, which plots the estimated effect of financial development on the *Price-Cost Margins* of different 3-digit ISIC industries across countries (on the x-axis) against the *Private-Credit*-weighed average of the *Price-Cost Margins* of these industries in the same sample of countries, shows that there is dispersion in the effect of financial development on margins across industries and that the dispersion is not dominated by particular observations. Panel B plots the estimated effect of financial development on the *Average Size*, measured as the log of value-added per firm, (on the x-axis) and *Price-Cost Margins* (on the y-axis) of different 3-digit ISIC industries across countries.

Panel A: Financial Development and Margins



Panel B: Margins vs. Size Measure

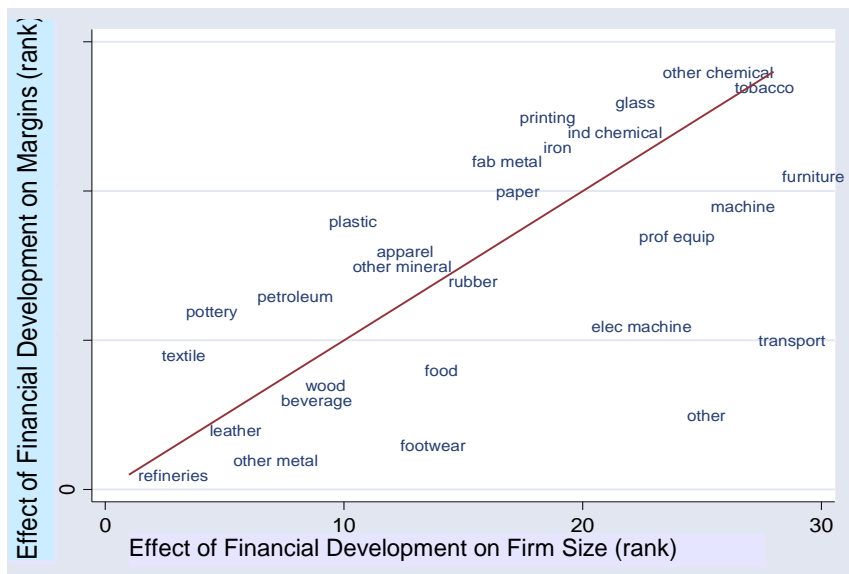
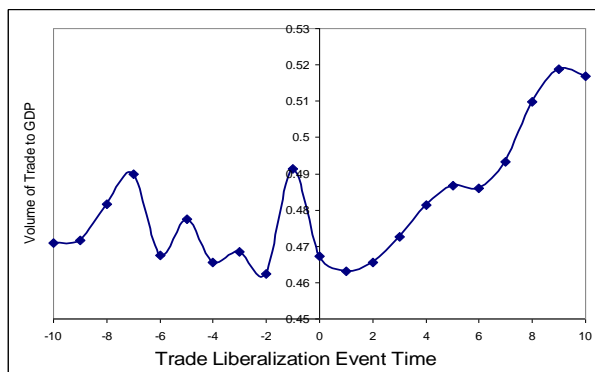


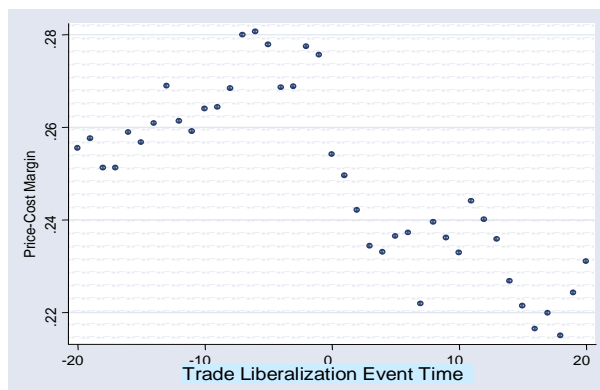
Figure IV. Trade Liberalization has the Expected Effects on Trade Volume and Margins

The three panels of the figure show the effect of financial development on different variables. Panel A plots the average *Volume of Trade* (exports plus imports) as a fraction of GDP around the time of trade liberalization, after controlling for year fixed-effects. Panel B presents a similar figure for the evolution of *Price Cost Margins* around the liberalization event. Panel C shows the median absolute deviation of the residuals of a regression of the strength of promoters on its lagged value around the liberalization date. In all three panels, the x-axis correspond to years in the event time horizon (t=0 in the year of trade liberalization).

Panel A: Volume of Trade



Panel B: Aggregate Price-Cost Margin



Panel C: Relative Price-Cost Margins

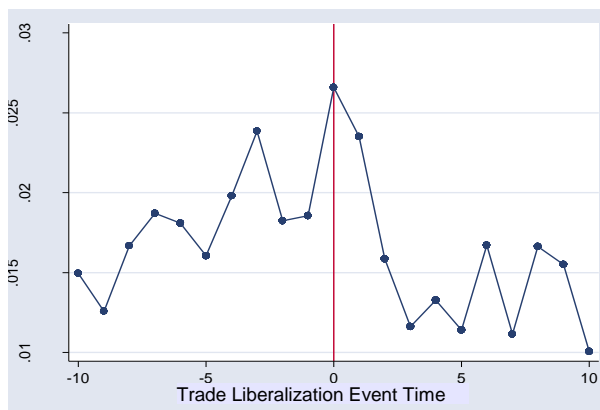
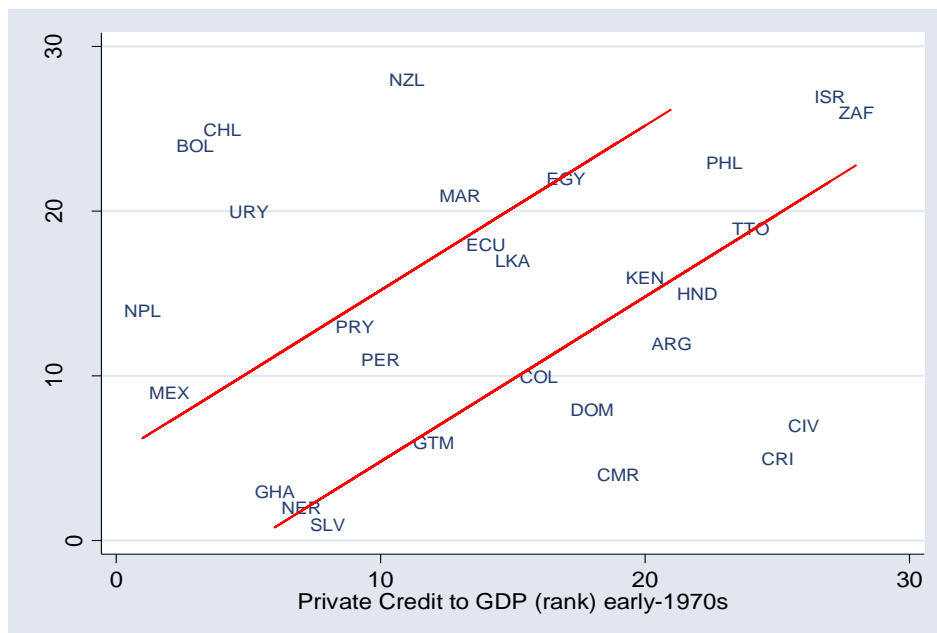


Figure V. The Persistence of Financial Development is Higher for Countries that did not Liberalize Trade

The two panels of the figure plot a country's world ranking of its level of *Private Credit to GDP* in the years 1970-1975 (x-axis) against the same ranking in the period 1995-2000 (y-axis). Panels A and B show this relation for countries that did and did not liberalize trade during the 1970-2000 period respectively.

Panel A: Trade Liberalizers



Panel B: Trade Non-Liberalizers

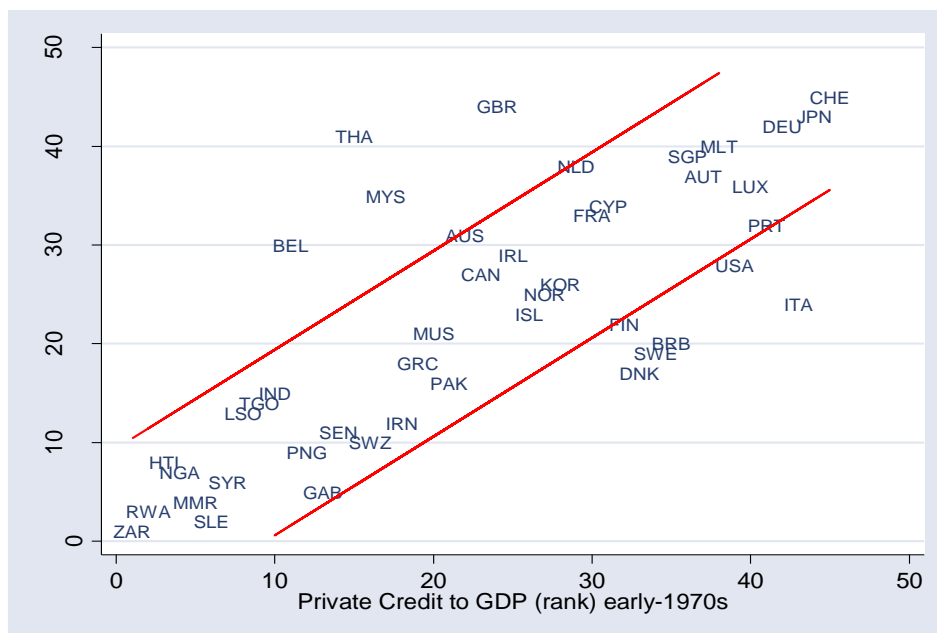
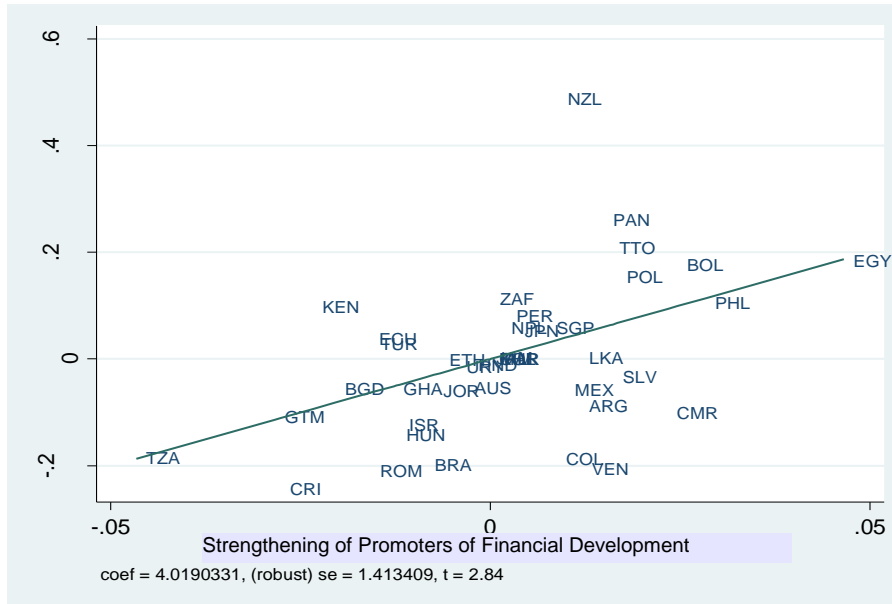


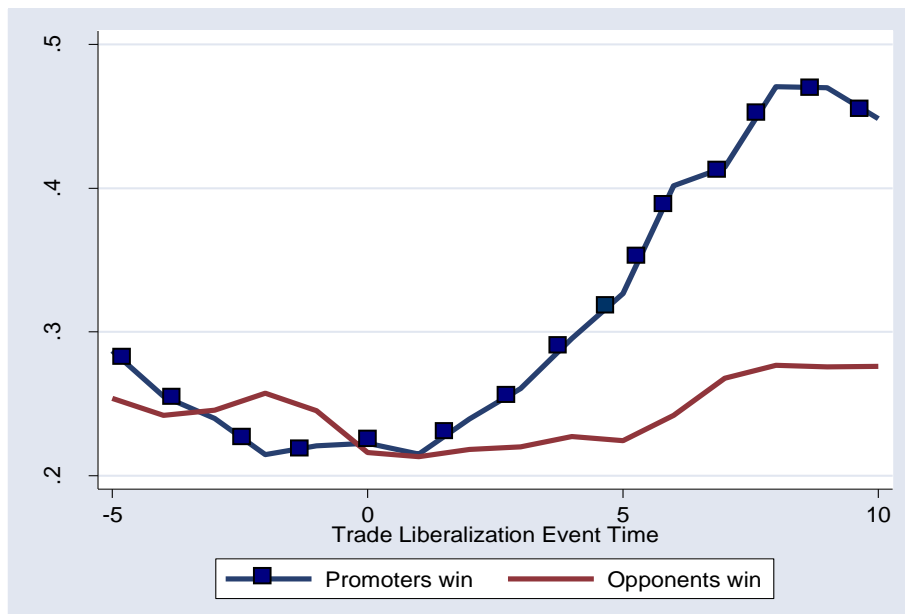
Figure VI. The Increase in Financial Development Following Trade Liberalization is Positively Correlated with the Strengthening of Promoters

Panel A shows the partial correlation between a country's *Strengthening of Promoters* and change in *Financial Development* (measured as the change in the level of *Private Credit to GDP*) around the year of trade liberalization after controlling for the initial (pre-liberalization) level of financial development and liberalization-year fixed effects. Panel B displays the evolution of the level of *Private Credit to GDP* around the year of trade liberalization among countries where the relative rents of promoter industries increase (line with squares) and decrease (simple line).

Panel A: Cross-country



Panel B: Dynamics



¹ The figures mentioned in this introduction come from a sample of the 73 countries for which we have data on both financial system and trade indicators since 1970.

² See King and Levine (1993), Demirguc-Kunt and Maksimovic (1998), Rajan and Zingales (1998) and Jayaratne and Strahan (1996) among others

³ This approach, which has a long tradition in the analysis of regulatory reform dating at least since the seminal work of Stigler (1971), has only recently being applied to the regulation of financial markets. See Kroszner (1998) for a discussion of the issues when the framework is applied to banking and financial regulatory reform across countries.

⁴ The use of the firm level data available for different countries is not an option in our case because these datasets have a very limited number of countries and data typically start after 1990 for those developing countries included.

⁵ Cash conversion cycle is defines as $\text{inventories} \times 365 / (\text{cost of goods sold}) + \text{receivables} \times 365 / \text{total sales} - \text{payables} \times 365 / \text{costs of goods sold}$.

⁶ As mentioned above, we cannot identify the absolute impact of financial development on PCM for different industries but only the differential effect across industries. Any classification based on the actual values of the coefficients will therefore have no economic content.

⁷ A previous version of the paper used the share in the value added in each group of promoters and opponents. Similar results were obtained because both groups tend to have similar sizes.

⁸ Rajan and Zingales (2003) point out that the effect on financial development is likely to be stronger when the opposition of financial sector incumbents is muted by free flow of capital.

⁹ The sample of countries used in the study and the corresponding dates of trade liberalization are reported below in Table 3.

¹⁰ Volume of trade corresponds to the sum of exports and imports as a fraction of GDP, and was obtained from the World Bank World Development Indicators 2003.

¹¹ The reason to use the median absolute deviation instead of the standard deviation or the R^2 is that because of the small number of countries for which we can perform the exercise (average number of countries in a given event time is around 25) the last two measures are too sensitive to outliers. A robust measure of R^2 obtained from a trimmed regression (not reported) gives similar results.

¹² The total change in the strength of promoters includes a term associated with the change in the average shares of the groups around liberalization. We omit this term because the actual changes in shares in the five year window are minor, and also may be contaminated by entry. For instance, suppose that incumbents in a sector are weakened by liberalization and their rents are reduced, so that they cannot block entry. The size of that sector may therefore expand giving the wrong impression that the strength of the sector may have increased. Using the initial shares solves this problem and can be understood as a way of capturing the change in rents of incumbents only. Nevertheless, results obtained using different shares before and after are analogous but a few of observations are lost because of data availability and outlier behavior.

¹³ For previous evidence see, for example, Rajan and Zingales (2003), and Stulz and Williamson (2003).

¹⁴ Notice that we do not include the years immediately after the event (τ to $\tau + 5$) to compute the level of post-event financial development because we assume that the political economy mechanism operates with some delay. Nevertheless, as it will be shown later, this assumption can be significantly relaxed.

¹⁵ There are 6 developed (Australia, Ireland, Korea, Japan, New Zealand, and Singapore) and 35 developing. Latin America is the largest group with 17 countries, followed by East Asia Pacific and Sub-Saharan Africa with 6 each. The sample also includes three transition economies (Hungary, Poland, and Romania). Eight countries liberalized in 1991, four in 1996 and 1986 each, and three in 1990, 1989 and 1985.

¹⁶ Variables capturing geographical or economic proximity when included are almost always insignificant and they never affect the coefficient of the political economy variable in a material way (see some of them in the remaining of Table III).

¹⁷ This figure only considers the countries for which we have complete private credit data coverage for the +/- 10 years window around the trade liberalization event.

¹⁸ Among others, by Rajan and Zingales (1998) and Cetorelli (2001, 2003) and Cetorelli and Strahan (2003).

¹⁹ The implications of this related mechanism in terms of the decision to open up for trade or not are quite interesting and merit further research. They are nevertheless out of our scope. Since we only have countries that did liberalize, we just need to worry about this reason being correlated with our explanatory variable.

²⁰ A different way of controlling for this possibility is to add the initial relative strength of promoters as a control to the benchmark regression. Again, we do not observe any significant impact on the main coefficient (not reported).

²¹ The bootstrapping procedure was performed as follows. At each point in the iteration we use the information reported in Table I to draw a new value for the sensitivity of each industry to financial development from a normal distribution with mean and standard deviation equals to those reported in the table. We then use these new sensitivities to re-classify industries among promoters and opponents, measure the impact of trade liberalization on the strengthening of promoters, and re-estimate the benchmark. The procedure was repeated 1000 times.

²² We were unable to measure the markups-financial development elasticities excluding altogether the countries that liberalized or otherwise reformed. This, because there are only 20 out of 108 countries for which data on trade liberalization are available that had not liberalized as of 2000. Several of these did not have data on financial development or margins.

²³ We thank the referee for suggesting this channel.

²⁴ Similar results are obtained when the impact of trade liberalization on external dependent industries is measured as the difference in the change in margins of the group of industries that score higher and lower than median in Rajan and Zingales (1998)'s index of external finance dependence.