

The Great Reversals: The Politics of Financial Development in the 20th Century¹

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Abstract

Indicators of the development of the financial sector do not improve monotonically over time. In particular, we find that by most measures, countries were more financially developed in 1913 than in 1980 and only recently have they surpassed their 1913 levels. This pattern cannot be explained by structural theories that attribute cross-country differences in financial development to time-invariant factors, such as a country's legal origin or culture. We propose an "interest group" theory of financial development where incumbents oppose financial development because it breeds competition. The theory predicts that incumbents' opposition will be weaker when an economy allows both cross-border trade and capital flows. This theory can go some way in accounting for the cross-country differences and the time series variation of financial development. When we recognize that different kinds of institutional heritages afford different scope for private interests to express themselves, we obtain a synthesis between the structural theories and private interest theory, which is supported by the data.

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There is a growing body of evidence indicating that the development of a country's financial sector greatly facilitates its growth (e.g., King and Levine (1993), Jayaratne and Strahan (1996), Demirguc-Kunt and Maksimovic (1998) and Rajan and Zingales (1998a)). Why then do so many countries still have underdeveloped financial sectors?

The simple answer, and one favored by many economists, is the absence of demand. According to this view, when opportunities arise in an economy that require financing, the economy will develop the necessary markets and institutions to finance these opportunities; In other words (those of Joan Robinson (1952, p86)) "where enterprise leads, finance follows". For example, the enormous financing requirements of railroads in the United States (one billion dollars up to 1867 and 10 billion dollars up to 1890) lead to the development of public markets for corporate debt and later for stock, with 40% of this capital coming from Europe.¹ Financial institutions such as investment banks, including the famous Morgan bank, emerged to underwrite and distribute these securities and to reassure European investors that the money was properly invested. Thus the financing needs of the railroads lead to the creation of financial infrastructure in the United States, which was then available to finance other industries that came later. What we have just described is nothing but the reverse of Say's Law – demand creates its own supply.

Certainly demand is a prime driver of financial development, but it cannot be the only explanation; demand (as proxied for by level of industrialization or economic development) cannot explain why countries at similar levels of economic development differ so much in the level of their financial development. For instance, why was France's stock market much bigger as a fraction of its GDP than markets in the United States in 1913, even though the per capita GDP in the United States was not any lower than France's? It is hard to imagine that the demand for financing in the United States at that time was inadequate – the demand for more, and cheaper, credit was a recurrent theme in political debates in the United States, and it was among the most industrialized countries in the world even then.

An alternative explanation is the existence of structural impediments to supply rising to meet demand. Perhaps a country does not have the necessary levels of social capital (Guiso et al, 2000) or “savoir faire” to create a viable financial sector (see Bencivenga and Smith (1991) and Greenwood and Jovanovic (1990)). Or perhaps it has not inherited the right legal, cultural, or political system. In particular, the seminal work of LaPorta, Lopez de Silanes, Shleifer, and Vishny (1997, 1998) shows that countries with a Common Law origin seem to have better minority investor protection, and furthermore, these countries have more highly developed equity markets. While there has been some debate as to the precise channel through which a country’s institutional inheritance affects its financial development (see, for example, Berglof and Von Thadden (1999), Coffee (2000), Holmen and Hogfeldt (2000), La Porta, et al. (1999, 2000), Rajan and Zingales (1999) and Stulz and Williamson (2001)), the evidence of a strong empirical correlation in recent times between whether a country is financially developed and whether it had British colonial origins is hard to ignore.

But one implication of the “structural” theories of financial development that has not been explored as yet is that financial development should either take-off permanently (for example, once the country attains the necessary social or human capital), or remain permanently constrained (for example, if the inherited legal system is hostile to investor protection and financial markets).

To test this implication, we collect various indicators of financial development in developed countries over the twentieth century. By most measures, countries were more financially developed in 1913 than in 1980 and only recently have they surpassed their 1913 levels. Furthermore, the pattern across countries was quite different then from that in the 1990s. In 1913, France's stock market capitalization as a fraction of GDP was almost twice that of the United States (0.78 vs 0.41) – even though the French Civil Code is not friendly to investors according to La Porta et al. (1998). By 1980, roles had reversed dramatically -- it was now barely one fourth the capitalization in the United States (0.09 vs 0.46). And in 1999, the two countries

seem to be converging (1.17 vs 1.52). More generally, by most indicators, the main countries of Continental Europe were more developed financially in 1913 than the United States. In fact, in contrast to the findings of La Porta et al. (1997) for the 1990s, we find that countries with Common Law systems were not more financially developed in 1913. What is especially interesting is that indicators of financial development fell in all countries after 1929, reaching their nadir around 1980. Since then, there has been a revival of financial markets.

A comprehensive theory, thus, should be able to explain both the time series variation in financial development as well as cross-sectional differences. In our view, the strength of political forces in favor of financial development should be a major aspect of such a theory. Clearly, there may be structural aspects to these forces, which we will discuss shortly. But equally clearly the prime mover is the dominant interest group, so we will propose an interest group theory of financial development. Because we attempt to be general, our theory will be stylized. Others (see, for example, Perez (1997), Rosenbluth (1989), or Shleifer and Treisman (2000)) have identified interests groups in specific countries and their power to thwart or aid reform. The virtue of the more stylized description we attempt is that it can be taken more objectively to the data, thus enabling the identification of general patterns.

One challenge with such a theory is to identify who may be opposed to something as economically beneficial as financial development. We believe that incumbents – especially in finance, but also in industry --can be hostile to arm's length markets because anonymous markets do not respect the value of incumbency (see, for example, Hellwig (2000) or Rajan and Zingales (1998b)), and instead can give birth to competition. Specifically, financial markets disproportionately favor new entrants over incumbents. Nevertheless, it is possible for the incentives of incumbents to oppose development to be muted. One such situation is when an economy experiences both cross-border trade and capital flows. The resulting competition from external sources, especially in financial markets, coupled with the constraints on government

financing, makes it hard and unprofitable for domestic incumbents to continue to keep the domestic financial sector repressed.

The greater challenge with any theory that suggests politics matters is how to test it. Structural measures of a country's political system are notoriously hard to capture. It is no wonder the evidence thus far is mixed. For example, Fohlin (2000), Weber and Davis (2000), and Verdier (1999) appear to find that measures of a country's political structure seem correlated with financial development. By contrast, Beck, Demirguc-Kunt and Levine (2001) find they are not. Apart from differences in data and accuracy of measures, the difference in results may stem from differences in incentives of the interest group in power. But how do we identify the most powerful interest group, and how do we determine its incentives?

The following example should illustrate the problems. French financial liberalization was kicked off in 1983 by a Socialist government. By many structural theories, France would be an unlikely country to initiate liberalization, while Socialists do not seem to be an interest group that would push for it. A more detailed study (e.g., Helleiner (1994)) suggests that there was a liberalizing faction in the French Socialist party, led by Prime Minister Pierre Mauroy and Finance Minister Jacques Dolors, whose hand was strengthened by France's increased trade integration into the European Community. This faction argued that liberalization was necessary to preserve trade, and won the day. How could one ever hope to capture the strength of such factions in a large sample cross-country study without a subjective country-by-country exercise?

Our theory suggests a way. Regardless of the nomenclature of the party in power or the structure of government, we can use the extent of an economy's openness as a proxy for the strength of incumbents' opposition to financial development. While crude, this gives us an objective way to sidestep the morass of trying to identify specific interest groups and their ability to exert power in different countries. Of course, there could be a more direct economic reason for trade to be correlated with financial market development. Our theory offers an additional

prediction that helps deal with this concern. It is at times when cross-border capital flows are plentiful that trade should matter. We take these predictions to the data.

We find that in the initial decades of the twentieth century and the closing decades, both periods when cross-border capital flows were relatively plentiful, measures of a country's financial development are strongly correlated to exogenous measures of its openness to trade. This evidence is consistent with our hypothesis that incumbents' incentives to oppose financial development are relatively muted when a country's borders are open. By contrast, in the intermediate periods (from the 1930s to the 1970s) when cross-border capital flows had dwindled to a trickle for a variety of reasons (ranging from the autarkic policies adopted during the Great Depression to the Bretton Woods agreement that favored trade at the expense of finance) we find that trade openness did not have as strong a positive correlation (if at all) with financial development. These findings suggest that it takes the combination of openness in product and financial markets to mute incumbent incentives to oppose financial development. They also suggest a rationale for why indicators of financial development fell between the 1930s and the 1970s; cross-border flows, especially of capital, were relatively small.

Finally, we attempt a synthesis of our private interest theory with structural theories, which affords more testable implications. It has been argued that in countries with a civil law origin, policies can be imposed more easily from the center (see Rajan and Zingales (1999) or Glaeser and Shleifer (2001) for references). This should then imply that civil law countries should be much more prone to capture by focused private interests, such as our incumbents. If so, we would expect to see that as cross-border financial flows ebbed in the 1930s, trade openness should have become much less potent a force for financial market development in civil law countries than in common law countries. By contrast, as financial flows resumed in the 1990s, incumbents in more open civil law countries should have had a stronger incentive and ability to press for financial development, so trade openness should become more potent a force for financial market development in civil law countries. This is, in fact, what we see in the data.

We are, of course, not the first to point to the influence of private interests on financial development, though our focus is quite different from previous work. Jensen (1991) argues that legislation backed by potential takeover targets crimped the market for corporate control even while it was having salutary effects on U.S. industry. Kroszner and Strahan (1999) explain the timing of financial liberalization across states in the United States in the 1970s and 1980s with variables that relate to the power of private interest groups. Morck, Strangeland and Yeung (1998) find that the share prices of heir-controlled Canadian firms fell on news that the Canada-US free trade agreement would be ratified. One reason they suggest is that the treaty had a provision for greater capital market openness, which would reduce the advantage heir-controlled firms had from access to capital. Bebchuk and Roe (1999) argue that corporate governance regimes will be strongly influenced by the initial positions of owners. Our paper is related to all these in that we also emphasize the role of private interests in retarding financial development, but we differ in that we attempt to find general patterns across countries.

We will postpone a discussion of the other related literature until we have presented the theoretical reasoning and tests. The rest of the paper is as follows. In section 1 we describe how we collected the data, then we present measures of financial sector development in different countries at various points in the 20th century. In section 2, we present our interest group theory of why some countries develop their financial systems and others not. In section 3, we test both the time series and cross-sectional implications of this theory. In section 4 we explore the reasons for the reversal, and offer a synthesis of structural and interest group theories, followed by a test. We then conclude.

1. Evolution of Financial Development over the Twentieth Century

1.1. What do we mean by financial development

The immediate problem faced by any empiricist is how to measure financial development. The right measure would capture the ease with which any needy entrepreneur or

company with a sound project can obtain finance, and the confidence with which investors anticipate an adequate return. Presumably, also, a developed financial sector can gauge, subdivide, and spread, difficult risks, letting them rest where they can best be borne. Finally, it should be able to do all this at low cost.

In our view, the most important word in the above definition is “any”. In a perfect financial system, it will be the quality of the underlying assets or ideas that will determine whether finance is forthcoming, and the identity of the owner (to the extent it is orthogonal to his capability of carrying out the project) will be irrelevant. Because our focus is on how easy it is to raise finance without prior connections, our measures of financial development will emphasize the availability of arm’s length market finance (and if the data were available, the availability of non-relationship-based bank finance).

This choice is not innocuous. In some financial systems, capital is easily available for anyone within a circle of firms and financiers, but it does not percolate outside (Hellwig (2000), Rajan and Zingales (1998b)). It may well be that most investment opportunities originate within this closed group, and this group can undertake more daring investment than would be possible in an economy with more widespread access. We would not, however, deem this economy to be financially developed. In a sense, we adopt the Schumpeterian view that a critical role of finance is creative destruction, and this is possible only if there is a constant flow of capital into new firms and out of old firms.

This then suggests we focus on different measures of the size of arm’s length markets (such as equity market capitalization, volume of equity issues, or number of listed firms) to measures of the size of the economy as our measures of financial development. While they are no doubt crude proxies, these ratios broadly capture a country’s level of financial sophistication and they are standard in the literature.

1.2. Historical Differences in Reporting Data

The second more formidable challenge, specific to the historical nature of our analysis, is the difficulty in obtaining reliable sources for historical information about financial markets. Primary sources are often lost or inaccessible, while secondary sources are contradictory, or repeat uncritically the same primary sources. To further complicate our task, the type of information statisticians and governing bodies of stock exchanges were interested in at the beginning of the twentieth century seems quite different from the ones we are interested in today (this seems a topic worthy of a separate study). We discuss some of these differences because they help shed some light on the different perceptions of the nature and role of financial instruments at that time.

A number that is often reported is the total nominal value of securities outstanding in a country. This clubs together not only stocks and corporate bonds, but also Government bonds, making the number difficult to interpret. The clubbing of information on corporate bonds and stocks, which is pervasive even in the United Kingdom, probably the most sophisticated financial market at that time, reflects the similarity of these two instruments at that time. The use of preferred stock paying a fixed dividend was widespread. Also, common stock paid very high dividends, making them more similar to bonds. One consequence of the high dividend payout ratio was that most stocks traded fairly closely to their nominal value. In fact, stock prices in many countries were quoted as a percentage of their nominal value. Thus, even from an investor's point of view, bonds and stocks were perceived as very close substitutes.

A second problem is that the official statistics at the beginning of the twentieth century report the total universe of corporations existing at that time, rather than the subset of those that are publicly traded. To make the numbers more comparable across time we classify companies as publicly traded only if the firm is quoted during the year. Even with this requirement, we may still have very infrequently traded stock.

A final problem comes from the existence of regional exchanges. At the beginning of the century, not only was trading more fragmented across exchanges, but so was listing. For example, the Banco do Brazil is listed in the Rio Stock Exchange but not in San Paulo. Companies listed only in Osaka represent a not inconsiderable portion of the total companies listed in Japan. Most extreme is Germany, probably as a consequence of the delayed political reunification. In 1913 Germany had nine major stock exchanges and Berlin represented only about 50% of the total capitalization.

Data for regional (or secondary) stock exchanges are especially challenging. Since many have disappeared or have been absorbed by the main exchange, they tend not to be well documented. We try, as best as possible, to reconstruct a measure that includes all the major stock exchanges, eliminating double listing. When this is not possible for the date of interest, we compute the ratio of the capitalization of the secondary exchanges to main exchange at the earliest date available and then use this ratio to extrapolate backwards the value of these exchanges. Since the importance of regional exchanges has gone down over time, this procedure clearly biases downwards the estimate of the total stock market capitalization in countries with fragmented stock markets. This should be kept in mind in the analysis.

1.3. Various Measures of Financial Development

Let us now describe the various indicators of financial development we use.

1.3.1. Banking Sector

We use the ratio of deposits (commercial banks plus savings banks) to GDP as a measure of the development of the banking sector. One shortcoming is that this measure captures only the liability side of banks, ignoring differences in the composition of bank's assets. Another shortcoming is that this measure cannot indicate if banks operate as a cartel, forming a closed shop to new industrial entrants. Despite this shortcoming, the measure has the virtue that it is available for a long time series and for a large cross section of countries. In more recent periods,

we have domestic credit from the private sector to GDP, which will be our measure of banking sector development.

1.3.2. Equity Issues

One measure of the importance of equity markets is the fraction of investments that are funded through equity issues. The proxy we use is the ratio of equity issues to Gross Fixed Capital Formation (GFCF) during the year. Ideally, we would have liked to normalize corporate equity issues by the amount of corporate investments, but this datum is not consistently available. In interpreting the results, therefore, it is important to realize that our measure will tend to underestimate the level of financial development of countries where agriculture (which does not enter in corporate investments but does enter in total investments) is more important. It will also tend to underestimate the level of financial development in the earlier part of the century, when corporate investments were a smaller fraction of total investments.

Another drawback of this measure stems from the well-known cyclicity of equity issues. A disproportionate amount of equity issues are concentrated during boom years (Choe, Masulis and Nanda (1993)). This can bias cross-country comparisons, to the extent stock market booms are not contemporaneous across economies. It also biases the time series comparisons if one of the reference years was a boom year .

1.3.3. Capitalization

A more stable measure of the importance of the equity market is the total stock market capitalization. Since the capital-output ratio has remained fairly constant during the 20th century, the ratio of equity market capitalization to GDP represents a good proxy for the fraction of fixed capital financed via publicly traded equity.²

A drawback is this measure captures the amount of equity listed, not the amount of equity raised. Thus, the presence of few companies that have greatly appreciated in value can give the impression of an important equity market even when the amount of funds raised in the market is

tiny. On the positive side, however, this measure is less cyclical than the previous one, and thus is better for making comparisons across countries and across time periods.

In measuring both equity issues and stock market capitalization we restrict ourselves, whenever possible, to domestic companies. London and Paris at the beginning of the twentieth century, and New York more recently, have attracted many foreign listings. We are especially interested, however, in how a country's financial and legal institutions help domestic industries raise funds, and as some have argued (see Kennedy (1989) for example), the financial sector's ability to fund foreigners may not imply an ability to fund domestic firms. Moreover, our focus reduces the possibility of mechanical correlations in our tests. This is why we limit ourselves to domestic companies.

1.3.4. Number of companies listed.

A final indicator of the importance of equity markets is the number of publicly traded domestic companies per million of population. This is a measure that is not tainted by fluctuations in stock market valuations and possible mismeasurement of the level of GDP. One drawback is that it is affected by the process of consolidation as well as by the fragmentation of the industrial structure. Countries with a more concentrated industrial structure will have fewer, but larger, companies and thus might score low according to this measure.

In sum, any indicator has its own drawbacks. This is the reason why they should be looked at together to get a better sense of the development of a country's financial structure.

One indicator that is missing from our list is the volume of securities traded. Unfortunately, the way volume is recorded (even today) is quite controversial. The Federation Internationale Bourses Valeurs (FIBV) classifies data on volume traded into two groups: trading system view (TSV) and regulated environment view (REV). The TSV system counts as volume only those transactions which pass through the exchange's trading floor, or which take place on the exchange's trading floor. The REV system includes in volume all the transactions subject to supervision by the market authority, with no distinction between on- and off-market transactions.

As the FIBV warns, comparisons are not valid between stock exchanges belonging to different groups, because the numbers differ substantially depending on method used. For example, in Paris, according to the TSV method the volume of equity traded in 1999 was \$770,076 million, while the REV method suggests a volume four times greater (\$2,892,301 million). Given the magnitude of the difference and the impossibility of obtaining consistent data both across countries and over time, we chose to disregard this indicator.

1.4. Data Sources

1.4.1. Stock Market Capitalization and Number of Companies Listed

Our starting point was the official publication of the stock exchanges as well as those of the *Federation Internationale des Bourses Valeurs* (FIBV). The latter provides extensive information only starting in 1980. Official publications of individual stock exchanges often go back only to WWII. When these are not available, we use information contained in private guides to stock exchanges. Only for Japan and the United States did we find official publications before WWII.

To assess the importance of the equity market in 1913 we rely on two approaches. Whenever possible we secured a copy of a stock exchange handbook in 1913 (or the closest year before 1913). Using the handbook we identify the number of domestic companies listed, the number of shares of each company, and the price per share. We then compute the total stock market capitalization as the sum of the product of price times the number of shares. We were able to do this for Australia, Brazil, Canada, Cuba, Denmark, Germany, Italy, Netherlands, Russia, Sweden, Switzerland, the United Kingdom, and the United States.

For example, the total equity market capitalization of U.S. domestic companies in 1913 is obtained as follows. From the 1914 edition of “*The Financial Review: Finance, commerce, railroads*” we obtain the list of the companies traded in New York, Boston, Philadelphia, Baltimore, and Chicago and their corresponding prices (average of the high and low for 1913). After eliminating cross-listings and the companies that were foreign, we collected the stated

capital and the par share price from *Moody's Manual of Railroads and Corporation Securities*. This enabled us to calculate the number of shares. The final figure is the sum of the capitalization of all five exchanges. We do not include the Curb Stock Exchange (the ancestor of Amex) because it was officially set up only in 1921.

In some cases we had to make some educated guesses, but, whenever possible, we cross-checked the realism of these choices. For example, it is a challenge to derive the total capitalization of all German stock exchanges, as many have disappeared. We did the following: We obtained both the nominal and the market value of stock traded at the Berlin Stock Exchange in 1913 from adding up individual company values in Saling's Börsen-Jahrbuch (1914). The total market capitalization of domestic companies is 18,957 million marks, with a nominal capitalization of 12,065 million marks. From Gömmel and Pohl (1992) we know that the nominal value of all shares traded in Germany is 16.0 billions Marks in 1913. This datum is consistent with Gunzert, Benning, and Veessenmayer (1929) who estimate the total nominal capitalization of German Stock Exchanges at 14.7 billions Marks in 1912. From these figures we derive an estimate of the nominal values of shares traded in German stock markets other than Berlin. We then apply the same market-to-book ratio we found for Berlin in 1913 and we arrive at the final estimate of 25,280 million marks.

A second source was various issues of the Bulletin of the International Institute of Statistics (IIS). Starting in the late nineteenth century, statisticians from all over the world met each year for a conference. This association formed a special group to compute the importance of security markets in different countries. Unfortunately, many of the reports club together stocks and bonds but we do obtain some disaggregate information for some countries.

1.4.2. Data on Equity Issues

Data on equity issues are relatively easier to get for the pre WWII period than for the period immediately after the war. This may reflect the greater importance that was attributed to this information before World War II. When not available from official statistics, we gather this

information from financial newspapers of that time such as the Economist, Commercial and Financial Chronicle, Deutsche Oekonomiste, etc.

1.4.3. Data on Deposits and National Accounts Data

Data on deposits, national income, and gross fixed capital formation come from Mitchell (various issues). Mitchell's data are available until the mid 1990s. We extrapolate this to 1999 for deposits by using the growth rate of deposits from the IMF's International Financial Statistics. For national accounts, we use the data from the NBER web site whenever available. Post WWII national accounts data come from the IMF's International Financial Statistics. We indicate whenever data come from a different source. We document the procedure followed for each country in our dataset. The sources are in an Appendix downloadable from the authors' web site.

1.5. Stylized Facts

In Table 1, we report the average value of our four indicators of financial development for the period 1913 to 1999. For every indicator we report both the average across all available observations and the average for the countries with observations throughout the sample period. In Table 2 to 5, we report the value of each indicator for each country. The countries reported in these tables are those for which we could get pre-World War II financial market data. Since the availability of data on financial development has exploded recently, in our tests for the most recent years (see later) we include all the countries we can get data on.

An analysis of these tables suggests the following facts:

1) Financial systems were highly developed in 1913.

Regardless of the way we measure, the average level of financial development in 1913 was quite high, comparable to that in 1980 or 1990.

The average ratio of deposits to GDP in 1913 is very similar to that in 1980 (see Table 1). Similarly, the data on the capitalization of the stock market (Table 1 and Table 3) indicate that in most countries, equity markets were bigger relative to GDP in 1913 than in 1980. Only by the end of the 1990s do they seem to exceed their 1913 level.

Equity issues were also a relatively more important source of funds for corporate investments in 1913 than in 1980 (and even 1990) for most countries we have data for (see Table 1 and Table 4). This is particularly noteworthy when we recognize that the 1913 figures are biased downwards relative to the 1990 ones, because we normalize by Gross Fixed Capital Formation, and corporate investments represent a much smaller proportion of GFCF in 1913 than in 1990.

Most countries have the same number of listed companies per million people in 1913 as in 1980 (see Table 1 and Table 5). In some countries, even with the explosion of financial markets during the late 1990s, the 1913 level has not been surpassed.

While, in general, the richest countries had highly developed financial sectors in 1913, the degree of development does vary widely. The level of economic development explains only 14% of the cross-country variation in the deposit-to-GDP ratio and it is not even statistically significant in explaining the level of equity market capitalization. Argentina, for instance, had about the same per capita GDP as Germany and France, but its level of deposits is only about two thirds that of France and Germany. Similarly, in 1913 Argentina's per capita GDP was three times as big as Japan's, but the relative size of its equity market was only one third of Japan's.

Surprisingly, Cuba is the most financially developed country, at least by equity market capitalization. On close scrutiny, this figure does not appear to be an aberration. First, small countries tend to be very financially developed (a fact that is not inconsistent with our proposed theory). The countries with the highest market capitalization ratio in 1997 were Hong Kong (2.45), Switzerland (2.08), and Luxembourg (1.98). Second, at the beginning of the century Cuba was a fairly rich country. In any case, Cuba does not enter any of the regressions (because other data are missing).

2) Countries that were most advanced in 1913 were not necessarily as advanced recently

By our measures, countries that were financially developed in 1913 are not necessarily countries that were financially advanced in recent times. In 1913, equity issues appear to be more important in France, Belgium and Russia, than they are in the United States. Thus, by this

measure, some Continental European markets seem to be at least as developed as the U.S. market at that time. The data on market capitalization in Table 3 confirm this impression. While the U.K. had a high capitalization in 1913, Belgium, France, Germany, and Sweden were close, ahead of the United States. The distinction between Continental Europe and Anglo-American countries, which has been highlighted in recent studies, does not seem to hold then. In fact, this distinction seems to be a post-WWII phenomenon implying financial markets in Civil Law countries appear to have declined more between 1913 and the early 1990s (though the gap has narrowed since).

Another way of seeing the change in patterns is to compute the correlation between indicators of financial development at different points in time. Using the Spearman rank correlation test, we find a correlation of 0.4 between capitalization to GDP in 1913 and capitalization to GDP in 1999. We reject the hypothesis that the two distributions across countries are independent at the 10 percent level (21 observations). The cross-country pattern of financial development in 1999 is positively correlated with that in 1913! However, this is not true a decade earlier. The correlation of the 1913 data with 1990 and 1980 data is lower (0.21 in 1990, -0.07 in 1980) and we cannot reject the hypothesis that the distributions are independent.

By way of comparison, consider the cross-country correlation of per capita GDP measured at two different points in time. Using the Spearman rank correlation test, we find a correlation of 0.55 between per capita GDP in 1913 and per capita GDP in 1999 (independence rejected at the 1 percent level with 22 observations). The correlation of the 1913 data with 1990 and 1980 data is equally high (0.62 for 1990, 0.73 for 1980). Thus over long periods, the relative ranking of countries according to financial development seems to be more volatile than their ranking according to economic development.

3) Indicators of financial development fall then rise between 1913 and 1999.

The most striking fact that emerges from Table 1 is that indicators of financial development fall considerably and then rise again. It is not easy to define precisely where the indicators start falling, but the data suggest that the turning point is somewhere in the 1930s or 1940s.

It is worth noting that the decline in indicators is not limited to the countries that lost the war, although it is more pronounced for such countries. It is not even seen only in countries involved in the war, since we see it in Sweden, Argentina, and Brazil. Finally, it cannot be attributed to a decline in the standard of living, since during the same period the average per capita GDP in 1990 dollars increased from \$ 4,476 to \$4,935.

While we cannot also date the recovery in indicators precisely, the turning point lies somewhere in the 1980s. Over the 1980s and 1990s, for the countries reporting throughout, the average ratio of deposits to GDP increased by 35%, the average ratio of stock market capitalization to GDP increased four times, and so did the fraction of GFCF raised via equity. The number of listed domestic companies shows a more modest increase (30%).

These facts cannot be explained by structural theories of financial development. In the next section, we provide a more dynamic interest group theory that may account for the observed facts. Later, we will argue that such a theory, when modified by structural explanations, may indeed reconcile our historical findings and the more recent findings that structural theories have relied on.

2. An Interest Group Theory of Financial Development.

We now describe a parsimonious theory that will attempt to explain the broad patterns we have noted in the data. In essence, it will suggest why financial development can differ so much between countries at similar levels of economic and industrial development. It will then explain why the same forces that lead to financial development can also cause its reversal. No doubt, the specifics of each country will differ and the theory, on occasion, may seem a caricature, but this is the price we have to pay for parsimony.

2.1. The necessity for government intervention.

The starting point of our theory is that financial development is not a natural outcome of market forces, but requires political intervention. The Government needs to create the essential ingredients of a developed financial system, which includes respect for property rights, an

accounting and disclosure system that promotes transparency, a legal system that enforces arm's length contracts cheaply, and a regulatory infrastructure that protects consumers, promotes competition, and controls egregious risk-taking.

No doubt, private arrangements could go some way in achieving all this. But the government has the ability to co-ordinate standards, and to enforce non-monetary punishments such as jail terms, that give it some advantage in laying out and policing the ducts in which financial plumbing will go. In fact, there is ample evidence that Government intervention is beneficial, if not necessary, for financial systems. La Porta et al (1997), for instance, show that laws protecting investors are an important determinant of financial development across countries. Similarly, in their study of the evolution of the Czech and Polish financial systems, Glaeser et al. (2000) argue that the "laissez faire" attitude of the Czech government deprived the market of the legal and regulatory infrastructure necessary for financial development.

Given that government action is needed for financial development, the focus of our inquiry then shifts to when there is political will to undertake these actions.

2.2 The Political Economy of Financial Development

Financial development seems so beneficial that it seems strange that anyone would be opposed to it. However, financial development is not always win-win. It could pose a threat to industrial and financial incumbents. Industrial incumbents are firms in industry, who already have assets in place (collateral) and a history of operations (reputation). Financial incumbents are financial institutions such as commercial banks or investment banks, who already have reputations and relationships with clients. We will argue that incumbents may be worse off as a result of financial development.

Rich incumbents have the least to gain from financial development, but they may have the most potentially to lose. An incumbent industrialist, for instance, facing limited growth opportunities benefits very little from financial development. He (or she) can finance new projects out of earnings – as most established firms do -- without accessing external capital

markets. Even when his business does not generate sufficient cash to fund desired investments, he can use the collateral from existing projects and his prior reputation to borrow. By contrast, he is likely to suffer indirectly from financial development. The better disclosure rules and enforcement in a developed financial market reduce the relative importance of his collateral and reputation, while permitting newcomers to enter and compete away profits.

Financial development not only levels the playing field between industrial incumbents and entrants, it also hurts traditional ways of doing business. Better public disclosure reduces the informational advantage incumbents typically have because they are better connected. Prompt and unbiased enforcement subjects them to the same rules as everybody else. Regulation further limits their ability to take advantage of their controlling position. In sum, the process of financial development brings along with it the disinfectant of transparency, which tends to exterminate cozy practices from the body economic.

Similar arguments apply to incumbent financiers. While financial development provides them with an opportunity to expand their activities, it also strikes at their very source of comparative advantage. In the absence of good disclosure and proper enforcement, financing can only be “relationship-based”. The financier uses his connections to obtain information to monitor his loans, and uses his various informal levers of power to cajole repayment. Key, therefore, to his ability to lend, is his relationships with those who have influence over the firm (managers, other lenders, suppliers, politicians, etc.) and his ability to monopolize the provision of finance to a client (either through a monopoly over firm-specific information, or through a friendly cartel amongst financiers). Disclosure and impartial enforcement tend to level the playing field and reduce barriers to entry into the financial sector. The incumbent financier’s old skills become redundant, while new ones of credit evaluation and risk management become necessary. Financial development not only introduces competition, which destroys the financial institution’s rents and its relationships (see Petersen and Rajan (1995)), it also destroys the financier’s human capital.³

In sum, a more efficient financial system facilitates entry, and thus leads to lower profits for incumbent firms and financial institutions. Moreover, markets tend to be democratic, and they particularly jeopardize ways of doing business that rely on unequal access. Thus, not only are incumbents likely to benefit less from financial development, they might actually lose. This would imply that incumbents might collectively have a vested interest in preventing financial development, and might be a small enough group (following Olson (1965), Stigler (1971)) to organize successfully against it.

There is some evidence consistent with our basic thesis that financial development has a disproportionate effect on new and young firms. Rajan and Zingales (1998a) find that the growth in the number of new establishments is significantly higher in industries dependent on external finance when the economy is financially developed. Johnson et al. (2000), in an interesting recent study of trade credit in transitional economies, find that an important consequence of an effective legal system in a country is that a firm offers more trade credit to new trading partners. Firms that believe in the effectiveness of the legal system are also more likely to seek out new trading partners. Finally, Laeven (2000) finds in a study of 13 developing countries that financial liberalization tends to alleviate credit constraints for small (typically young) domestic firms while no such effect is seen for large domestic firms, which typically tend to have preferential access to credit before.

Financial development also seems to affect product market competition. In a comparative study of the textile industry in Mexico and Brazil around the beginning of the twentieth century, Haber (1989) shows that Brazil, following its political revolution, liberalized finance, and saw the textile industry grow faster and become less concentrated than the Mexican textile industry. Porfirio Diaz, the Mexican dictator during this period, was much more a prisoner of incumbent interests. Mexico's financial markets remained underdeveloped during his regime, with the consequence that Mexico's textile industry, while starting out larger and relatively more competitive, had less entry, and ended up smaller and more concentrated than Brazil's.

2.3 Financial Repression is Not the Only Way to Protect Incumbent Rents.

Financial underdevelopment is not the only barrier to entry. Incumbents could restrict entry into their industry directly through some kind of licensing scheme. Since the repression of financial markets could be severely constraining when these incumbents occasionally need external finance, why not ban entry into industry (or finance) outright? There are, however, some advantages for incumbents from leaving finance underdeveloped as opposed to banning entry.

First, direct entry restrictions often require very costly enforcement. Enforcement becomes particularly difficult, if not impossible, when innovation can create substitutes for the product whose market is restricted. Each new threatening innovation has to be identified, categorized and then banned. Second, the active enforcement of restrictions on entry is a very public, and therefore, politically transparent process. In a democracy, citizens have to be convinced that restrictions on entry benefit them, and this is a hard sell when they are faced with the poor service and extortionate prices of the local monopoly. By contrast, the malign neglect that leads to financial underdevelopment is less noticeable – it goes with the grain to have comatose bureaucrats who do not act rather than have overly active ones -- and can be disguised under more noble motives such as protecting citizens from charlatans. Leaving finance underdeveloped is an act of omission with few of the costs entailed by an act of commission such as the use of the apparatus of the state to stamp out entry. Malign neglect may be as effective as active harassment but much easier to implement!

In general, however, we would expect direct entry restrictions and financial underdevelopment to be used as complementary tools. In Figure 1, we graph the Djankov et al. (2000) measure of the number of days in different countries to start a business (a measure of the direct barriers to entry) against the accounting standards in that country (a measure of financial development). The correlation is significantly negative, and regression estimates (not reported) show that it persists after correcting for the level of GDP. Financial underdevelopment does seem to be present in complement to other barriers to entry!

2.4. What determines outcomes?

Now that we have specified motives, what determines outcomes? In some situations, incumbents may not have the ability, or the incentive, to oppose development, and that is when we will see rapid progress.

The first, of course, is when there is political change. By creating a fresh power structure, political change can foster anti-incumbent institutions, one of which may be financial infrastructure. For example, a number of mortgage banks and institutions like the Credit Mobiliere were encouraged by the government of Louis Napoleon after its coming to power in 1848 as a counter to the Bank of France and the Rothschilds who were thought to be sympathetic to the deposed monarchy (Cameron (1965)). More recently, Weber and Davis (2000) find that a country's transition to a multi-party democracy increases its estimated rate of creation of a stock exchange by 134% during the subsequent three years.

Industrial incumbents will also benefit from financial development when their investment opportunities are high relative to their ability to finance them. A sudden expansion in required scale, perhaps because of an opening of new markets, or because of technological change, increases their demand for financing. The increased scale may also serve as a natural barrier to new entrants, reducing the need for financial underdevelopment as an entry barrier. Alternatively, a sustained period of poor economic conditions may deplete the reserves of incumbents, increasing the need for external finance, and allowing them to be more amenable to financial development when the economy turns up.

2.5. Financial Development and Openness.

One such period when opportunities expand disproportionately compared to available resources is when an economy opens up to foreign trade. It is not surprising that the periods of expansion in world trade – the latter halves of both the nineteenth and twentieth centuries – have been, broadly speaking, associated with increasing financial development. But we believe that

openness promotes financial development, not just because it expands opportunities, but also because it increases competition.

2.5.1. Openness to Capital Flows and Competition in the Financial Sector

First, consider the possibility of cross-border capital flows. Access to international capital markets allows the largest and best-known firms to tap foreign markets for funds. This will introduce competition in the richest segment of the market, where domestic financial firms were previously earning their rents, and foster liberalization. For example, as Japanese firms escaped in the 1980s to raise arm's length finance from the Euromarkets, Japanese banks were forced to stop repressing the Japanese corporate bond markets (see Rosenbluth (1989)).

Domestic financial institutions will also be forced to seek new clients, bringing finance to a host of firms that previously did not have the relationships to obtain finance. Since these clients will be riskier, and less well known, financial institutions will have no alternative but to press for improved disclosure and better contract enforcement. In turn, this leveling of the playing field will create the conditions for more entry and competition in the financial sector.

Faced with a loss of domestic clientele, financial institutions will also seek to enhance their skills to compete with foreign financial institutions both internally and abroad. As they seek new clients outside, they will be forced as a quid pro quo to increase access for foreigners, and dismantle domestic regulations that give them their privileged competitive positions. For example, the German government banned lead underwriting of Deutschmark bonds by Japanese financial institutions until Japan agreed in 1985 to allow foreign securities firms to act as lead underwriters for Euroyen bonds (see Rosenbluth (1989)).

Free capital mobility even turns individual investors into a force for financial development. Once offered the choice, investors in a country that is financially repressed will rush to move their funds to more developed markets, where they can be better diversified and earn returns that are not diminished by transactions costs. The loss of a captive source of funds

will further push domestic financial institutions to improve their returns to compete with foreign investment opportunities, again strengthening the push towards financial development.

Capital mobility is also likely to make the government more circumspect about directing credit. Because it will have less control, as discussed above, over who gets credit, and because product markets become more competitive, the risks in, and information requirements for, lending will increase. The potential for large errors from the centralized direction of credit will increase. Moreover, the ability of the government to provide large subsidized loans to favored firms will decrease as mobile capital forces governments to maintain macro-economic prudence (see, for example, Loriaux's (1997) description of the constraints on French intervention in allocating credit in the 1980s). The government's role in the financial sector will diminish.

A final source of pressure for financial development comes from foreign financial firms. Since they are not part of the domestic social and political networks, they prefer transparent arm's length contracts and enforcement procedures to opaque negotiated arrangements. It is not a coincidence that these are the very requirements of would-be domestic entrepreneurs who are also outsiders to the domestic clubs.

2.5.2. Openness to Trade and Competition in the Industrial Sector.

Consider now openness to trade. While foreign markets bring opportunity, openness also brings foreign competitors to domestic markets. Foreign entry drives down monopoly rents giving domestic industrial incumbents, especially in tradable sectors, less of an incentive to oppose domestic entrants. Lower profits also drives down incumbent cash flows, making incumbents more dependent on external finance. The inadequacies of the domestic financial market will be especially magnified to these incumbents if foreign entrants are supported by sophisticated financial institutions and markets in their own countries. As Perez (1997) argues, a prime impetus for the capital market reforms in Spain in 1988 was that industry pushed for it after Spain acceded to the European Union in 1986 and industry faced competition from rivals who had access to lower cost financing.⁴

Openness will also have effects over time. It will be harder to accommodate foreigners in cozy domestic arrangements, which are typically cemented through traditional and familial ties. As these are forced to change, incumbents no longer need to protect them through restrictions on domestic entry. Similarly, once domestic producers start competing effectively in a large world market, they are less likely to worry about domestic entry, which cannot have much effect on world prices (though entry may still affect domestic costs).

We have argued thus far as if industry, as a whole, will be more predisposed to financial development when the economy opens up to trade. This need not be the case. When an economy opens up to trade, the non-traded sectors, facing less competition, may become more profitable, and consequently more powerful, than the traded sectors. They may have more of an incentive to maintain financial entry barriers. Moreover, even in the traded sectors, there may be an incentive to petition the government for loan subsidies in the face of foreign competition instead of improving the quality of the domestic financial system. The effect of openness to trade is, by itself, not unambiguous.

2.5.3. Interactions

When some countries relax capital controls and international markets, like the Euro Market, arise, large pools of capital emerge that are willing to flow across borders. At such times, trade flows in and out of a country are likely to create avenues for capital flows (through under-invoicing, over-invoicing, and delayed payments – see Eichengreen (1996)) whether the country has capital controls or not. Therefore, trade flows become a better proxy for capital flows, when international capital mobility increases, as in the early and late part of the 20th century.

Secondly, high capital mobility further strengthens the discipline trade openness imposes on Governments. In the absence of capital flows, Governments can more easily subsidize favored incumbents and fix prices in the financial sector, reducing the beneficial effect of foreign competition. Such forms of protection, which limit the role of private capital markets, are unsustainable when capital is mobile across borders.

For both these reasons, we expect the effect of trade on financial development to be particularly pronounced in periods of high international capital mobility.

3. A Test of the Political Theory of Financial Development.

As we have argued, direct measures of the political power of interest groups, and their ability to influence outcomes are controversial at best. Our theory, however, does lead to some indirect, but more objective, tests. Whatever the configuration of domestic political power, both the incentive of domestic incumbents, and their ability, to hold back domestic financial development is likely to be the least when the country is open to cross-border capital flows.

3.1. Preliminary concerns.

There are some issues to deal with before we proceed to tests. First, what is the relevant measure of financial development from the perspective of our theory? Second, could there be more mechanical channels for the link between openness and financial development?

3.1.1. The Relevant Measure of Financial Development.

As we have argued, the amount of funds raised from arm's length financial markets or the amount of credit offered by competitive banking systems could be measures (albeit crude) of financial development. Unfortunately, we do not know how competitive the banking system is – we only have measures of the quantity of deposits. The banking system could be concentrated and captive to incumbent interests, dominated by state owned banks, or just plain inefficient.

Therefore, we prefer to use the size of the arm's length financial markets as our measure of development. This also accords well with the view that arm's length markets will emerge only when financial infrastructure such as disclosure requirements (see Sylla and Smith (1995)) and investor protection are reasonably developed (see La Porta et al. (1998)), while banks can exist even when infrastructure is primitive (see Rajan and Zingales (1998b)).

3.1.2. Measure of Openness

Foreigners may choose to invest in a country, or raise financing from it, when its financial infrastructure is highly developed. This is why we cannot use a country's cross-border capital flows as a measure of openness because it may be directly connected with financial development. However, the theory suggests a proxy. Capital can flow on the back of trade, especially when there are large international pools of capital willing to flow across borders. Also, countries that are more open to trade during a period when capital flows freely across borders are also likely to have less stringent capital controls. Finally, we have readily available instruments for trade (we discuss this shortly). So we will use openness to trade -- the ratio of the sum of exports and imports of goods to GDP as our measure of openness, with the rationale that it is likely to be correlated with the propensity for cross-border capital flows, but not directly to a country's financial development.

Of course, openness is partially endogenous. There is a large literature (see, for example, Gourevitch (1986), Rogowski (1989), O'Rourke and Williamson (1999)) where it is suggested that the decision to open up or close down an economy to trade is a political one, based on the relative strengths of the sectors that stand to gain or lose from openness. For example, if incumbents in the industrial sector are very efficient, they may welcome the opportunity to trade. Also, because they are so efficient, they may not fear domestic competition. As a result, they may welcome financial development. The concern the literature raises is that trade openness and financial sector development may both be politically determined, but the former need not directly influence the latter. The obvious solution is to use an instrument for openness that is correlated with openness but not directly with politics, and this is what we will do.⁵

Finally, it would be useful to separate the direct effects of cross-border trade on financial development (which are ambiguous) from the indirect effects through cross-border capital flows, which are unambiguous. Our theory suggests a way. Trade is a better proxy for cross-border private capital flows when there are large such pools of capital searching for high returns. World-wide international capital mobility has varied during the 20th century. The first three decades were

characterized by high international capital mobility. As a result of the restrictions on flows imposed during the Great Depression and the Bretton Woods agreement, this level was only approached again in the 1990s (see O'Rourke and Williamson (1999), p213). Since the unambiguous indirect effects of trade openness kick in only when capital is internationally mobile, we should expect to see a higher positive correlation between financial development and openness during periods of high international capital mobility.

3.1.3. The Test

We thus have two hypotheses:

- 1) For any given level of demand for financing, a country's domestic financial development should be positively correlated with trade openness at a time when the world is open to cross-border capital flows.
- 2) The correlation between a country's trade openness and financial development should be weaker when worldwide cross-border capital flows are lower.

We will need a proxy for the demand for financing. Bairoch (1982) computes an index of industrialization across a group of countries for a number of years. The index number in a year reflects a country's absolute level of industrialization in that year, with England in 1900 set at 100. There are measurement issues with any index, but this one seems well accepted among economic historians. Bairoch's index will be our preferred control for the demand for financing whenever it is available. We will use per capita GDP when Bairoch's numbers are not available.

To test the first hypothesis, we examine the effect of openness on financial development in 1913, the earliest date for which we have data for a sizeable number of countries, and 1996-98, the last period for which we have data. International trade and capital flows were relatively free in both periods.

3.2. Financial development in 1913

We present summary statistics and pairwise correlations in Table 6 a and b. The ratio of equity market capitalization to GDP is positively correlated with Bairoch's index of

industrialization (0.58, $p=0.01$) and with openness (0.33, $p=0.19$), and negatively correlated with tariffs on manufacturing (-0.37, $p=0.15$). The correlation with the interaction between the index of industrialization and openness is both high and very significant (0.67, $p=0.002$).

In Table 7, panel A, the ratio of stock market capitalization to GDP is our measure of financial development. As the estimates in column (i) show, more industrialized countries have more developed financial markets. More relevant to our hypothesis, more open countries have more developed financial markets, but due to the small number of observations, this effect is not statistically significant at conventional level. Our hypothesis, however, is that for any given level demand for financing, more openness should lead to more financial development. Therefore, in column (ii) we insert the interaction between openness and the index of industrialization, which is our proxy for the demand for finance. The coefficient estimate for the interaction term is highly statistically significant ($p=0.034$). The magnitude of the effect is also large. A one standard deviation increase in the interaction term increases the ratio of stock market capitalization to GDP by 50 percent of its standard deviation. Since we have so few observations, we plot the data in Figure 2 to show the result is not driven by outliers.

We can try to tell the effect of openness apart from the effect of openness working through demand by including both the level of openness and the interaction term in column (iii). It turns out that only the interaction has a positive coefficient estimate, and the explanatory power of the specification in column (ii) is not enhanced by including openness. The magnitude of the interaction coefficient is higher than in column (ii) but its standard error also goes up. The problem is that openness and the interaction are highly correlated ($=0.69$), so it is hard to tell their effects apart with so few observations. Since the correct specification could be debated, in what follows we will present estimates for both the effect of openness and the effect of the interaction.

The results thus far indicate that in more open countries, a given demand for finance is correlated with more financial development. Because openness and financial development may be simultaneously determined by some omitted variable, we instrument openness with the size of a

country's population in column (iv). Small countries typically have to be more open since it is difficult to manufacture everything internally (see Katzenstein (1985)). The point estimate of the effect of openness interacted with industrialization increases by 50% and, in spite of an inevitable increase of the standard error, remains statistically significant at the 5% level.

Another concern may be that we proxy for openness with the volume of goods traded, and there may be a disguised link between the volume of trade and the volume of financing. One measure of openness that is not directly a measure of volume is the tariff on manufactured goods. We use this as a proxy for the extent of openness in column (v), and the two-stage least squares estimate (using the same instrument as in the previous column) is negative and significant.

As discussed before, the ratio of equity market capitalization to GDP is a very imperfect measure of financial development. It is sensitive to fluctuations in relative valuations and to mistakes in the computation of the GDP (national accounts statistics were widely calculated only after WWII, all previous numbers are estimates computed in recent years). An alternative measure, which is immune to both these criticisms, is the ratio of the number of publicly listed companies to population. In panel 7b, we re-estimate the specifications in panel 7a with this alternative dependent variable. The correlations are even stronger. Openness has a positive and significant correlation with development even when included alone. When both openness and openness interacted are included, the latter remains statistically significant at the 5% level.

Finally, our measure of financial development captures only the size of the equity market, while the bond market has also played an important role in some of these countries. Unfortunately, we were unable to obtain data for the size of the corporate bond market for the same set of countries. From the 1915 Bulletin of the International Statistical Institute (IIS) in Vienna we did obtain data, however, on the total issues of public corporate securities (both equity and corporate bonds) by domestic firms in a set of countries in 1912. The IIS sample is slightly different from our 1913 sample (which we have put together from different sources for each

country). We have checked that the data in the IIS sample seem accurate by comparing with independent sources, and they do seem to represent net rather than gross issues.

In panel 7c, we re-estimate the same specifications using total issues to GDP in 1912 as dependent variable.⁶ Here again, the interaction between industrialization and openness has a positive and statistically significant coefficient. A one standard deviation increase in the interaction term increases the ratio of total issues to GDP by 68 percent of its standard deviation.

3.3. Financial development in 1997

Regardless of the measure used, openness seems to be positively correlated with financial development in 1913. The paucity of observations, however, is worrisome. But our hypothesis suggests the results should also be present in recent times, when cross-border capital and trade flows have regained the levels they had reached in the early part of the twentieth century.

In Table 8, we re-estimate the specifications in Table 7 using the largest cross section of data available today. We obtain data for market capitalization from the World Bank's World Development Indicators, data on the number of domestic listed companies from the Emerging Market Factbook, and data on security issues from Beck et al. (1999). Since Bairoch's index of industrialization is not available, we use instead the log of per capital GDP in PPP dollar, also from the World Bank's World Development Indicators.

To smooth the effects of the East Asian financial crisis we averaged the dependent variable across three years (1996-98). As Panel A (with equity market capitalization to GDP as the dependent variable) shows, the results are very similar to those in 1913. Openness has a positive and statistically significant effect on financial development. This is true both if we use openness directly (see column (i)) and if we interact it with our proxy for the demand for finance, the log of per capital GDP (see column (ii)). A one standard deviation increase in the interaction term increases the ratio of stock market capitalization to GDP by 25 percent of its standard deviation. In spite of the very high correlation between openness and the interaction between openness and log per capita income, the larger cross section allows us to distinguish the two, and

it is the interaction that is positively correlated (see column (iii)). At the mean level of openness and log GDP per capita the combined effect is positive, but small (0.10).

Frankel and Romer (1999) predict bilateral trade between two countries using an expanded version of the gravity model of trade (where trade is proportional to the distance between countries). Their constructed trade share is then simply the sum of these fitted values across all possible trading partners. It is perhaps a better instrument for trade than population, which is all we had in 1913. When we use this instrument, the estimated coefficient almost doubles (see column (iv)) and remains statistically significant at the 1% level.

We show these results hold for other measures of financial development. In Panel B the dependent variable is the number of listed domestic companies per million inhabitants in 1997, while in panel C it is the sum of equity and long-term private debt issues to GDP. To deal with the cyclical nature of equity and debt issues, we use an average across all the years during the 1990s that are available in Beck et al. (1999). These panels confirm the finding that financial development is higher for any level of demand when a country is more open.

3.3.1. Robustness.

The greater availability of data at the end of 1990s allows us to explore the robustness of our results. La Porta et al. (1997) suggest that a better measure of financial development than market capitalization is the amount of equity held by outsiders. Using this measure of development, openness or openness interacted with GDP per capita have a positive and statistically significant correlation with equity held by outsiders (estimates not reported). Similarly, a good indicator of the ability to raise external funds, and thus a measure of the development of a financial market, is the quality of the accounting standards, as measured by the Center for International Financial Analysis and Research. This measure is available only for 39 countries, nevertheless openness alone and openness interacted with GDP per capita are positively and statistically significantly correlated with it (estimates not reported).

One might worry that there is a mechanical link between openness and financial market development. For example, a large trade deficit has to be financed through capital inflows. If domestic government assets are insufficient, and if foreign direct investment is small, the inflows will be reflected in a larger private market for financial assets. Is the link we have found merely the flip side of a trade deficit? We re-estimate the basic specification using the ratio of trade surplus to GDP as a substitute for openness (estimates not reported). Trade surplus does not seem to be correlated with domestic financial development. When we include the interaction of openness with log per capita GDP, the coefficient of trade surplus does not have statistical significance, while the interaction term remains positive and statistically significant.

Another way of getting at this is to look at a form of financing that may not be arm's length -- domestic bank credit -- and is therefore less likely to be influenced by openness. Openness does not seem to be statistically significantly correlated with the ratio of domestic credit to the private sector to GDP (obtained from Beck et al. (1999)). Thus there does not seem to be a mechanical link between openness and financing -- instead the link is to arm's length financing (or potentially, if we could measure it, competitive private credit).

3.4. Financial Development Over Time

Our results thus far indicate that both in 1913 and in 1997, for any given level of demand, measures of financial development were higher in countries that were more open to trade. Of course, many good institutions are associated with more trade (see, for example, Wei (2000) who finds lower corruption in countries that trade more). If trade openness affects the political consensus in favor of financial development, in part by generating larger cross-border capital mobility in the country, we should expect the correlation between trade openness and financial development to be stronger in periods of high international capital mobility than in periods of low mobility. International capital mobility remained high only up to 1930s. Following the Depression and Bretton Woods, capital movement remained severely curtailed till the 1980s. The United States opened up in the mid 1970s, United Kingdom and Japan in 1980,

while the countries of Continental Europe only in the late 1980s. Thus the changes in capital mobility over time give us the data to test our second hypothesis.

To begin with, we estimate our basic regression (specification (ii) in Table 7a) year by year. Unfortunately, we do not have Bairoch's measure of per capita industrialization over the entire period. Thus, the first seven cross sections (for the years 1913, 1929, 1938, 1950, 1960, 1970, and 1980) use Bairoch's index as a proxy for demand, while the last two use the logarithm of per capita GDP adjusted for difference in the purchasing power parity (as computed by the World Bank). Consequently, the magnitude of the coefficient before 1980 and after 1981 are not directly comparable.

As Table 9 shows, the interaction between openness and demand for finance has a reliable and statistically significant positive correlation with financial development both at the beginning and at the end of the sample, which corresponds to the periods of high international capital mobility. During the period of low capital mobility the effect is statistically insignificant or even negative, when we measure financial development by the ratio of equity market capitalization to GDP.

To formally test whether the effect of openness is smaller during periods of low capital mobility, we pool the different cross sections, and we separately estimate the slope of the interaction between per capita industrialization and openness in years with low capital mobility. The results for the panel 1913-1980 are reported in Table 10. The specification is the same as the basic regression in Table 7, with the inclusion of an additional slope term for the years of low capital mobility.

In the first two columns, we report estimates obtained by OLS with country specific fixed effects and calendar year dummies. Openness and openness interacted with the industrialization index have a positive correlation with financial development in the period of high mobility, and the correlation goes to zero during the period of low capital mobility (1938-1980). Only the difference in the interaction is statistically significant at conventional levels. This weaker

statistical significance is not surprising in light of the fact all our variables are measured with error. In such cases, fixed effect estimators tend to reduce the signal to noise ratio (Griliches and Hausman, 1986).

As an alternative, we re-estimate the basic regression using instrumental variables (columns (iii) and (iv)). As an instrument for openness, we use the constructed trade shares computed by Frankel and Romer (1999). While this instrument will be weaker as we go back in time because it is constructed based on country borders in the 1990s, all we care about is that it be correlated with trade and not with financial development.⁷ When we use this instrument, the estimated coefficients increase slightly in magnitude and all become statistically significant. We obtain similar results (not reported) when we use the ratio of number of domestic firms listed to million inhabitants as a measure of financial development.

A final task is to show that the strong positive correlation between trade and domestic financial development reasserts itself as capital mobility increases in the last decades of the twentieth century. The regression estimates are in Table 11. The first two columns report the fixed effect estimates, where we include country indicators. The effect of trade openness has a positive and statistically significant effect on financial development (column (i)) in 1997. This effect is halved in 1981, when capital mobility is lower. The same is true for the interaction between openness and the logarithm of per capita GDP (column (ii)). A one standard deviation increase in the interaction of logarithm of per capita GDP and openness increases the ratio of market capitalization to GDP by 14%, which is equal to 35% of its standard deviation. The coefficient estimate for the period of lower capital mobility is about 32% smaller in magnitude but not statistically significantly smaller.

In columns (iii) and (iv) we report the instrumental variable estimates, where openness is instrumented with the constructed trade share in Frankel and Romer (1999). Both openness by itself and the interaction between log per capita GDP and openness have a positive and statistically significant effect on financial development during the period of high capital mobility.

The coefficient of the interaction term in periods of low capital mobility is now significantly smaller both statistically and in magnitude (55% smaller, difference significant at the 5 percent level). Overall, these results suggest that the positive correlation between openness and financial development re-emerged, and became stronger, in the last two decades of the twentieth century, in concert with the increased cross-border capital mobility. This conclusion is also supported by the results obtained using the number of domestic firms listed as a measure of financial development (not reported).

3.5 Summary of Results

Overall, the results suggest openness is reliably positively correlated with financial development. This effect is distinct from that of legal origin (including an indicator for common law in the basic specification does not change the coefficient estimates qualitatively). Our theory suggests why openness matters: It reduces the incentives of incumbents to resist financial development. We now argue that this finding can explain the reversal of financial development in middle of the 20th century. Equally interesting, our theory can explain why legal origin seems to matter for financial development in recent years. This is the subject of the next section.

4. An Explanation for the Reversal

It follows from our analysis thus far that the reversal in financial markets we noted in section 1 is because countries closed down their borders to trade and capital flows in the 1930s and 1940s, in response to a popular movement against openness. We do not have the space to explore the reasons for this popular movement (see Eichengreen (1996), Rajan and Zingales (2000) for details). It suffices to say that once incumbents were free from the constraints imposed by open borders, they rode on the coattails of this movement to reverse financial development. Banking systems became much more concentrated, and came under the control of governments both directly and indirectly. Access to financial markets became more restricted. Capital controls became orthodox international policy under the post-war Bretton Woods agreement so the financial repression that began in the 1930s carried on after World War II. It is only with the

breakdown of the Bretton Woods agreement and the resumption of cross border capital flows in the 1980s and 1990s that financial markets have revived the world over.

4.1. A synthesis of the private interest and structural theories.

There are, however, still some puzzles. Financial markets in countries with a civil law system were not less developed than those in countries with common law in 1913 and in 1929. Our data suggest that the ascendancy of markets in common law countries is a post World War II phenomenon, though the differences have narrowed again more recently. Why did markets in civil law countries fall more? A synthesis of our private interest theory with structural theories may offer an explanation.

Since the seminal findings of La Porta et al (1997, 1998), there has been some debate as to whether the legal origin of a country appears to matter so much for financial markets because it reflects the inherent superiority of common law over civil law for financial transactions and investor protection or whether it matters because it reflects something about a country's culture, religion, or politics (see, for example, Acemogulu, Johnson, and Robinson(2000), Beck et al (2000), Berglof and Von Thadden (1999), La Porta et al. (1999), Rajan and Zingales (1999), and Stulz and Williamson (2001)).

Rajan and Zingales (1999) argue that many complex legal constructs that first emerged in common law, such as limited liability, were readily imitated by civil law countries. In fact, they argue, when the government has a will, civil law countries may have a greater ability to translate governmental policy into law because laws emanate from the center rather than evolving through judicial decisions. Whether the tighter control the center maintains over the judiciary in civil law countries is because the civil law system evolved in France in the 12th and 13th centuries when the king was weak (Glaeser and Shleifer (2001)) or whether it simply reflects a general propensity for centralization of power in these countries is not relevant to the argument we will make. What is critical, however, is that private interests have a greater chance of seeing their agenda enacted in a civil law country.

One reason is simply that if the governance system is more centralized, it is easier for small private interests to capture it. If, in addition, the legal system is important for validating and enforcing new policy, the civil law system is again easier to capture. The focus of influence activity in a civil law country only has to be the legislator. By contrast, the judiciary in a Common Law country can restrain a new political climate, and because it is dispersed and subject to local influences (see Glaeser and Shleifer (2001)), is less easy to capture.

A second reason is that common law evolves at the periphery, and can innovate around legislative or administrative roadblocks set up by the center. In England, for instance, after the Bubble Act placed constraints on the incorporation of limited liability companies in 1720 (primarily to bolster the position of companies that were already incorporated), common law courts continuously evolved their own interpretation of which companies did not contravene the spirit of that law. It was precisely to overcome this ability of the judiciary to defy the will of the center that Napoleon introduced the Civil Code as a way to prevail over judges still loyal to the *Ancien Regime* (see Hayek (1960) or Glaeser and Shleifer (2001) and the references therein).

In summary, in a civil law country, it is easier for a small group representing private interests, such as large incumbent industrialists and financiers to influence the implementation of friendly policies. This need not be all bad. When these private interests are aligned with the national interests, good policy can also be implemented quickly. Empirically, this would suggest that civil law countries went further in repressing financial markets when borders closed down (suggesting an explanation for the La Porta et al. findings in the mid 1990s that financial markets were then more developed in common law countries), but have also begun developing them again as borders have opened up again in recent years (explaining the convergence seen in the most recent data (see Coffee (2000))). This would reconcile our findings with the findings of La Porta et al (1997, 1998) and suggest a synthesis of the interest group explanation with the structural (albeit political) explanation.

4.2. A Test.

Our methodology offers a way to test this hypothesis. As cross-border financial flows ebbed in the 1930s, trade openness should have become much less potent a force for financial market development in civil law countries than in common law countries. By contrast, as financial flows resumed in the 1990s, incumbents in more open civil law countries should have had a stronger incentive and ability to press for financial development, so trade openness should become more potent a force for financial market development in civil law countries.

We test these conjectures in Table 12, by splitting the sample according to the type of legal system prevailing and re-estimating the specifications used in Tables 10 and 11. The impact of trade openness on our measure of financial development (coefficient of the interaction term) drops by 90% in Civil Law countries versus 60% in Common Law countries (respectively 65% vs. 48% if we use the IV estimates) when cross border capital flows are curtailed (Panel A). These estimates suggest that a decline in the effect of openness can account for a great deal of the changes in the importance of the equity market in Civil Law countries. Between 1913 and 1980 the actual ratio of equity market capitalization to GDP in France, for instance, dropped 88%, from 0.78 to 0.09. The predicted ratio dropped 106%, from 0.31 to -0.02 .

In Panel B we repeat the analysis around the time capital movements are liberalized. As predicted, civil law countries exhibit the largest increase in the impact of trade openness on financial development: 160% increase in the coefficient vs. a 12% increase in Common Law countries (108% vs -4% if we use the IV estimates). Once again this greater sensitivity to openness can explain the strong revival of financial markets in Civil Law countries. Between 1981 and 1997 the predicted ratio of equity market capitalization to GDP in France rose from 0.14 to 0.41, closely aligned with the actual ratio, which went from 0.08 to 0.54.⁸

This suggests that countries with Civil Law systems may have more exaggerated reactions to changes in private interests, either because their political systems are intrinsically more centralized and prone to capture, or because Civil Law tends to enhance centralization. This may explain why following the Great Depression, civil law countries started to fall behind in the

degree of financial development, and why in the 1990s, following a generalized liberalization of capital movement, the gap has started to narrow.

Our view that institutional differences between countries serve to modify the impact of private interests offers a different view of convergence across countries than Coffee (2000). In his view, financial development will take place through changes in practices when a constituency emerges that demands it. Much later, the formal legal system will adapt to reflect these demands. Thus he attributes the convergence to “Anglo-Saxon” norms of Corporate Governance practices in Continental Europe to the privatization in the 1980s, which created a constituency of minority shareholders. We differ primarily in that we attribute both a stronger role to private interests (not just for, but also against, development) and also a role for structural factors.

Finally, it may help convince some readers if we bolster our large sample evidence with some descriptive analysis. Let us briefly sketch events in one country, Japan, and then discuss why, somewhat paradoxically, the United States enacted market friendly reforms during the darkest days of the Depression.

4.3. The Case of Japan, a civil law country.

Japan, as our data suggest, was making rapid strides to developing a strong financial sector before World War I. Until 1918, there were no restrictions on entry into banking, provided minimum capital requirements were met. There were over two thousand banks in 1920. The five large Zaibatsu (translated as “financial cliques”) banks accounted for only 20.5 per cent of the deposits before the war, and there were many small banks.⁹

As a result of increased competition in the post-World War I years and the Great Tokyo Earthquake in 1923, which caused damage estimated at an incredible 38% of GDP, more and more banks became troubled. This gave the government the excuse to enact regulations promoting mergers in the name of stability. By 1945, there were only 65 banks, and the share of Zaibatsu banks in total deposits had increased to 45.7 per cent.¹⁰

At the same time as the banking system was becoming more concentrated, the government's control over it was increasing. This became especially pronounced as the government sought to direct funds towards supplying the war against China in 1937. With the Temporary Fund Adjustment Act in 1937 and the Corporate Profits Distribution and Fund Raising Act in 1939, the government, through the Industrial Bank of Japan, assumed control of financing. All security issuances and lending decisions above a certain amount had to be approved by the government, and those that were not related to the war effort were typically not approved. Further Acts simply strengthened the government's control and this culminated in the designated lending system by which each munitions company was designated a major bank which would take care of all its credit needs. By the end of the war, the banking system was not only concentrated, but well and truly under the control of the government.

The accompanying demise of the arm's length financial markets was aided and abetted by the banks. In 1929, 26 per cent of the liability side of large Japanese firm balance sheets consisted of bonds while only 17 percent was bank debt.¹¹ As bond defaults increased as a result of the earlier crisis and depression, a group of banks together with trust and insurance companies seized on the poor economic conditions to agree in 1931 to make all subsequent bond issues secured in principle. This immediately made it harder for their clients to issue public debt. With the acquiescence of the Ministry of Finance, the agreement was formalized in 1933 through the formation of a Bond Committee. The Committee determined which firms could issue bonds, on what terms, and when. All bonds were required to be collateralized, and banks were to serve as "trustees" for the collateral in exchange for a substantial fee. Giving banks the responsibility for determining firms' right to access the public bond markets was like giving a fox who resided in a chicken coop the right to determine which chickens could leave.¹² The obvious outcome was that a flourishing bond market was killed off. By 1936, bonds were down to 14 percent while bank debt was up to 24 percent of the liability side. By 1943, 47 percent of liabilities were bank debt while only 6 percent were bonds.

Japan illustrates yet another point. In the absence of outside competition, entrenched interests can survive a long time. For example, despite their best efforts to break up the bank firm combines established during the period of militarization, the post-war American occupying forces could not prevent them re-emerging as the Keiretsu or main bank system (see Hoshi and Kashyap (1998)). Similarly, the Bond Committee, set up ostensibly to improve the quality of bond issuance during the Depression, survived until the 1980s. Even as Japanese industrial firms invaded the rest of the world in the 1970s, their bond markets remained miniscule, and Hitachi, an AA credit, was denied the ability to issue unsecured bonds. It was only in the early 1980s, as Japanese firms decided to borrow abroad in the Euromarkets rather than depend on their antiquated financial system that Japanese banks had to loosen their stranglehold. The powers of the bond committee were eventually curtailed, not by a far-seeing government, but the forces of outside competition.¹³

4.4. Why Not the United States?

As with any large sample study, there are exceptions. In the midst of the Depression, the United States undertook a variety of market friendly actions including passing legislation requiring greater disclosure in financial markets, setting up the Securities and Exchange Commission, and passing the Glass Steagall Act, which brought more competition among financial institutions by breaking up the universal banks. Was the United States an exception to the trend at this time?

First, it is possible to overstate the extent to which proposed legislation was market friendly. The National Recovery Administration, which was set up under the New Deal, sought to fix prices in industry in order to eliminate “ruinous” competition, while Regulation Q attempted to do the same thing in the banking sector. The U.S. government defaulted on the Gold Clause to the detriment of creditors, and the sanctity of contracts (see Kroszner, (1999)). That markets and competition were not seriously affected in the long run was not for the want of effort by the New Deal politicians. But legislative zeal in the United States was also tempered by checks imposed

by the judiciary, a characteristic of common law countries (though it was the independent judiciary rather than common law that was the source of the check). Roosevelt's primary method of intervention, the National Recovery Administration, was declared unconstitutional by the Supreme Court.¹⁴ When the Supreme Court eventually became more pliant after threats to pack it, Congress became more nervous about growing executive powers, and growing threats to property, and became the main obstacle to proposed New Deal legislation.¹⁵

Checks and balances are not sufficient to explain the pro-market legislation. Of course, the legislation was not as pro-market as it is often made out to be. Mahoney (2000) argues that the ostensibly pro-market and pro-competitive Securities Act of 1933 and the Glass Steagall Act, were really protection in disguise for established investment bankers. Various aspects of the Securities Act reduced price competition among investment bankers, while the Glass Steagall Act forced commercial banks out of the underwriting business. Mahoney provides evidence that the Securities Act increased concentration in the underwriting business.

Nevertheless, even if private interests were at work, the United States did not go the way of Japan. In part, the private interests were more fragmented. Investment banks did not see eye to eye with commercial banks, nor did large banks form common cause with small banks. The variety of conflicting private interests, more than any other factor, may have been the reason why outcomes in the United States were not more anti-competitive. There was no way markets could be closed down without hurting some powerful faction in the financial sector.

So this then leaves us with the final question – why were there so many different groups within the financial sector? Roe (1994) suggests an answer: There has always been an undercurrent of opposition in the United States to anyone getting overly powerful in the financial sector. Whether it be the setting up of the Federal Reserve to undercut the power of JP Morgan, the Glass Steagall Act to curtail the power of large universal banks, or the refusal of the Federal Reserve to act to save Drexel Burnham, the United States has managed to cut powerful financiers down to size. Perhaps it was its ability to ensure even in normal times that no small group of

incumbents ever became really powerful that enabled the United States to pass through crisis relatively unscathed.

Before concluding this section, we must note two other explanations for the reversals. Roe (1999) suggests that corporations in Continental Europe became more closely held because of the potential for higher agency costs there as a result of pro-labor legislation passed in the 1920s and 1930s. This diminished the size of public markets. While we do believe that the shrinkage of public equity markets and the passage of pro-labor legislation were coincident in some countries, his theory does not account for the greater government intervention and cartelization witnessed in many countries, or for the demise of corporate bond markets in some.

Pagano and Volpin (2000) develop a model in which entrepreneurs, who have already raised finance, want low investor protection (so as to indulge in private benefits), and get the support of workers by promising them high employment protection. This model of incumbent interests (entrepreneurs who already have finance) is similar to ours (and suggests a different causality for the correlation Roe finds – that incumbent industrialists bribed workers with pro-worker legislation to go along with anti-finance legislation) but our emphasis on openness as a modifying influence is different, and it helps us explain both pro-market and anti-market legislation.

5. Conclusion.

We see four contributions of this work. The first is to document the reversal in financial markets, a finding inconsistent with pure structural theories of financial market development. The second is to test whether interest group politics matters for financial development across countries by focusing on the broad economic incentives of the interest groups rather than their nomenclature or the political structure of the country. While others have detailed how interest group politics matters within countries for financial development, we have not seen a large sample test of the kind we attempt. The third is to add a new fact – that trade openness is correlated with financial market development, especially when cross-border capital flows are free, and that changes in openness are correlated with changes in the size of financial markets.

The last, and perhaps most important, contribution is to provide a synthesis between structural and interest group theories, and to provide some support for it.

There are many implications of this work, but given that it is already long, we cannot do more than state the most important very briefly. First, legal or cultural impediments to financial development may not be as serious as one might conclude from the recent literature. Second, as suggested by Olson (1982), openness (though not just to trade as he emphasizes but also to financial flows) may be very important for financial development. Unilateral capital controls imposed by a country can have long term consequences that far outweigh issues like credibility to foreign investors that have been the focus of recent debates. The cost to Malaysia of the recent controls may not be so much that foreign investors are wary of a repeat, but that domestic financial institutions were merged in a non-transparent way during the period of controls – a way that appears to favor the current political establishment (see also Johnson and Mitton (2001)). Finally, while openness has virtues, it also has costs (see, for example, Rodrik (1997, 1998)). How to preserve its virtues while spreading and softening its costs deserves far more attention.

References

- Acemoglu, Daron, Simon Johnson, James A. Robinson, 2000, "The Colonial Origins of Comparative Development: An Empirical Investigation, NBER Working Paper #7771
- Aoki, M. H. Patrick and P. Sheard, 1994, "Introductory Overview", in *The Japanese Main Bank System*, M. Aoki and H. Patrick, New York: Oxford University Press.
- Auerbach, Nancy, 2001, *States, Banks, and Markets*, Westview Press, Colorado.
- Bairoch, 1982, "International Industrialization Levels from 1750 to 1980", *Journal of European Economic History*, vol 11, 2, 269-334.
- Bairoch, 1989, "European Trade Policy, 1815-1914", in *The Cambridge Economic History of Europe*, Vol VIII, Peter Mathias and Sydney Pollard ed.
- Bebchuk, L. and M. Roe, 1999, A Theory of Path Dependence in Corporate Ownership and Governance *Stanford Law Review*, Vol. 52, pp. 127-170.
- Beck, Thorsten, Asli Demirguc-Kunt, Ross Levine, 1999, "A New Database on Financial Development and Structure", World Bank Working Paper.
- Beck, Thorsten, Asli Demirguc-Kunt, Ross Levine, 2001, "Law, Politics, and Finance" World Bank Working Paper.
- Bencivenga, Valerie and Bruce Smith, 1991, "Financial Intermediation and endogenous growth", *Review of Economic Studies*, 58(2), pp 195-209.
- Benston, George J., *The Separation of Commercial and Investment Banking*, Oxford: Oxford University Press, 1990.
- Berglof, Erik and Ernst Ludwig Von Thadden, "The Changing Corporate Governance Paradigm: Implications for Transition and Developing Countries", Working Paper, June 1999.
- Bordo, Michael D., Barry Eichengreen, Douglas A. Irwin, 1999, "Is Globalization Today Really Different than Globalization a Hundred Years Ago?" NBER Working Paper No. W7195.
- Chandler (1990), *Scale and Scope*, Bellknap Press, Cambridge, MA.
- Choe, H., R. Masulis and V. Nanda, 1993, Common stock offerings across the business cycle: Theory and evidence, *Journal of Empirical Finance* 1, 3-31.
- Coffee, John, 2000, *Convergence and its Critics: What are the Preconditions to the Separation of Ownership and Control*, mimeo, Columbia University.
- Demirguc-Kunt, A. and V. Maksimovic, 1998, "Law, Finance, and Firm Growth", *Journal of Finance*, 53, 2107-2138.
- Djankov, Simeon, Rafael La Porta, Florencio Lopez deSilanes, Andrei Shleifer, "Regulation of Entry", NBER Working Paper No. W7892.

- Eichengreen, B., 1996, *Globalizing Capital: A History of the International Monetary System*, Princeton University Press, Princeton, New Jersey.
- Englebourg, Saul and Leonard Bushkoff, 1996, *The man who found the money : John Stewart Kennedy and the financing of the western railroads* , East Lansing : Michigan State University Press.
- Fohlin, C., 2000, "Economic, Political and Legal factors in Financial System Development: International Patterns in Historical Perspective
- Frankel, Jeffrey A. and David Romer, 1999, "Does Trade Cause Growth?", *American Economic Review* 89: 379-399.
- Glaeser, Edward L., Johnson, S. and Andrei Shleifer, 2001, "Coase vs. the Coasians", NBER Working Paper.
- Glaeser, Edward L. and Andrei Shleifer, 2001, "Legal Origins: NBER Working Paper #8272.
- Goldsmith, R., 1969, *Financial Structure and Development*, Yale University Press, New Haven.
- Gourevitch, Peter, 1986, *Politics in Hard Times: Comparative Responses to International Economic Crises*, Cornell University Press, Ithaca.
- Green, E., 1992, "The influence of the City over British Economic Policy: 1880-1960", in *Finance and financiers in European history, 1880-1960*, Youssef Cassis ed., Cambridge University Press, New York.
- Griliches, Z. and J. Hausman, 1986, "Errors in Variables in Panel Data", *Journal of Econometrics* 31: 93-118
- Greenwood, Jeremy and Boyan Jovanovic, 1990, "Financial Development, Growth, and the Distribution of Income", *Journal of Political Economy*, 98, pp 1076-1107.
- Guiso, L, P. Sapienza, and L. Zingales, 2001, "The Role of Social Capital in Financial Development", NBER WP.
- Gömmel, Rainer and Pohl, Hans, 1992, *Deutsche Börsengeschichte*, Knapp, Frankfurt am Main.
- Gunzert, Rudolf, Bernhard Benning, and Edmund Veessenmayer, 1929, *Effektenbörse und Volkswirtschaft, Effektenmarkt und Konjunktur, der "schwarze Freitag"*, Fischer, Jena.
- Haber, S., 1989, *Industry and Underdevelopment: The Industrialization of Mexico* Stanford University Press, Stanford California.
- Hammond, Bray, 1957, *Banks and Politics in America from the Revolution to the Civil War*, Princeton University Press, Princeton, NJ.
- Hayek, Friedrich A., 1960, *The constitution of liberty*, Chicago : University of Chicago Press.

- Helleiner, E., 1994, "From Bretton Woods to Global Finance: A World Turned Upside Down" in R. Stubbs and G. Underhill Ed., *Political Economy and the Changing Global Order*, Toronto.
- Hellwig, Martin, 2000, "On the Economics and Politics of Corporate Finance and Corporate Control", in Xavier Vives ed, *Corporate governance: theoretical and empirical perspectives*. New York: Cambridge University Press.
- Holmen, and Peter Hogfeldt, 2000, "A Law and Finance Analysis of Initial Public Offerings", working paper, University of Chicago.
- Hoshi, T. and A. Kashyap (1998), *The Genesis of the Japanese Financial System*, Chapter 2 in forthcoming book.
- Jayarathne, Jith and Philip E. Strahan, 1996, "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation," *Quarterly Journal of Economics*, CXI, 639-671.
- Jensen, M., 1991, "Corporate Control and the Politics of Finance", *Continental Bank Journal of Applied Corporate Finance*
- Johnson, Simon, John McMillan, and Christopher Woodruff, 2000, "Courts and Relational Contracts", mimeo, M.I.T.
- Johnson, Simon and Todd Mitton, 2001, "Who Gains from Capital Controls? Evidence from Malaysia", mimeo, M.I.T.
- Katzenstein, Peter, *Small states in world markets : industrial policy in Europe*, Ithaca, N.Y. : Cornell University Press, 1985.
- Kennedy, David, 1999, *Freedom from fear: the American people in Depression and War, 1929-1945*, The Oxford History of the United States, Oxford University Press, New York.
- Kennedy, William, 1989, *Industrial Structure, Capital Markets, and the Origins of British Economic Decline*, Cambridge University Press, Cambridge.
- King, R. and R. Levine, 1993, "Finance and Growth: Schumpeter Might Be Right", *The Quarterly Journal of Economics*, Vol. CVIII, No. 3, 681-737.
- Kroszner, R., 1999, "Is it Better to Forgive Than to Receive? Evidence from the Abrogation of Gold Index Clauses in Long-Term Debt During the Great Depression," University of Chicago Working Paper.
- Kroszner, R. and R. Rajan, "Is the Glass Steagall Act Justified? A study of the US experience with Universal Banking before 1933", *American Economic Review* 84, 810-832.
- Kroszner, R. and P. Strahan, "What drives deregulation? The Economics and Politics of the Relaxation of Bank Branching Restrictions", *Quarterly Journal of Economics*, Nov 1999, 1437-1467.
- Kukies, Jorg, 2000, "The Effect of Introducing a New stock exchange on the IPO Process", mimeo, University of Chicago.

- La Porta, Florencio, Lopez de Silanes, Andrei Shleifer, and Robert Vishny, 1997, "The Legal Determinants of External Finance," *Journal of Finance*, 52.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R. Vishny, 1998, "Law and Finance," *Journal of Political Economy*, 106, 1113-1155.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R. Vishny, 1999, "The Quality of Government," *Journal of Law, Economics, and Organization*, vol 15, 222-279.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and R. Vishny, 2000, "Investor Protection: Origins, Consequences, and Reform", *Journal of Financial Economics*, 58:3-27.
- Laeven, Luc, 2000, "Financial Liberalization and Financing Constraints: Evidence from Panel Data on Emerging Economies", mimeo, World Bank.
- Lamoureux, N., 1994, *Insider Lending*, National Bureau of Economic Research.
- Levine, R. And S. Zervos, 1998, "Stock Markets, Banks, and Economic Growth", *American Economic Review*, vol 88, no 3, 537-558.
- Loriaux, Michael, 1997, *Capital ungoverned : liberalizing finance in interventionist states*, Ithaca : Cornell University Press
- Mahoney, Paul, 2001, The Political Economy of the Securities Act of 1933, *Journal of Legal Studies*, Vol. 30, No. 1, January 2001
- Maier, Charles, 1987, *In Search of Stability*, Cambridge University Press, Cambridge, England.
- McNeill, William, 1982, *The Pursuit of Power: Technology, Armed Force and Society since AD 1000*, University of Chicago Press, Chicago.
- Morck, R., David A. Stangeland, and Bernard Yeung, 2000, "Inherited wealth, corporate control, and economic growth: the Canadian disease?" in Randall Morck ed, *Concentrated corporate ownership* Chicago: University of Chicago Press.
- North, D. and B. Weingast, 1989, "The Constitution of Commitment: The Evolution of Institutions Governing Public Choice in Seventeenth Century England", *Journal of Economic History*, vol 49, 4, 803-831.
- Olson, M., 1965, *The Logic of Collective Action*, Harvard University Press, Cambridge, MA.
- Olson, M., 1982, *The Rise and the Decline of Nations*, Yale University Press, New Haven, CT.
- O'Rourke, Kevin and Jeffrey Williamson, 1999, *Globalization and history: The Evolution of a Nineteenth Century Atlantic Economy*, M.I.T. Press, Cambridge, MA.
- Pagano, Marco and Paolo Volpin, 2000, "The Political Economy of Corporate Governance, mimeo, Harvard University.
- Perez, Sofia A., 1997, "From Cheap Credit to the EC: The Politics of Financial Reform in Spain",

- in Michael Loriaux ed., *Capital ungoverned : liberalizing finance in interventionist states*, Ithaca : Cornell University Press.
- Petersen, M. and R. Rajan, 1995, "The Effect of Credit Market Competition on Lending Relationships", *Quarterly Journal of Economics*, vol 110, pp 407-443.
- Rajan, R. and L. Zingales, 1998a, "Financial Dependence and Growth". *The American Economic Review*, (1998), 88: 559-586.
- Rajan, R. and L. Zingales, 1998b, "Which Capitalism? Lessons From the East Asia Crisis," *Journal of Applied Corporate Finance*.
- Rajan, R. and L. Zingales, 1999, "The Politics of Financial Development", mimeo, University of Chicago.
- Rajan, R. and L. Zingales, 2000, "The Great Reversals: The Politics of Financial Development in the 20th Century", University of Chicago Working Paper.
- Robinson, Joan, 1952, "The Generalization of the General Theory", in *The Rate of Interest and Other Essays*, London, Macmillan, pp67-142.
- Rodrik, D. , 1997, *Has Globalization Gone Too Far?*, Institute for International Economics, Washington, DC.
- Rodrik, D., 1998, "Why Do More Open Economies Have Bigger Governments? *Journal of Political Economy*, October.
- Roe, M., 1994, *Strong Managers and Weak Owners: The Political Roots of American Corporate Finance*, Princeton University Press, Princeton, N.J.
- Roe, M., 1998, "Backlash", *Columbia Law Review*.
- Roe, M., 1999, "Political Preconditions to Separating Ownership from Corporate Control", mimeo, Columbia Law School.
- Rogowski, R., 1989, *Commerce and Coalitions: How Trade Affects Domestic Political Arrangements*, Princeton University Press, Princeton, N.J.
- Rosenbluth, Frances McCall, 1989, *Financial politics in contemporary Japan*, Ithaca : Cornell University Press.
- Seligman, Joel, 1995, *The Transformation of Wall Street*, Northeastern University Press, Boston.
- Shleifer, Andrei and Daniel Treisman, 2000, *Without a map : political tactics and economic reform in Russia*, MIT Press, Cambridge, Ma.
- Stigler, G., 1971, "The Theory of Economic Regulation," *Bell Journal of Economics and Management Science*, 2: 3-21.
- Stulz, Rene M. and Rohan Williamson, 2001, "Culture, Openness, and Finance", Ohio University Working Paper.

Sylla, Richard, and George Smith, 1995, "Information and Capital Market Regulation in Anglo-American Finance", in *Anglo-American Financial Institutions*, Bordo, Michael and Richard Sylla ed., Irwin Publishers, New York.

Taeuber, Rudolf, 1911, *Die Börsen der Welt*, Verlag, Berlin.

Teranishi, Juro, "Loan Syndication in War Time Japan and the Origins of the Main Bank System", in *The Japanese Main Bank System*, M. Aoki and H. Patrick, ed. Clarendon Press, Oxford.

Verdier, Daniel, 1999, "The Origins of Universal Banking in the 19th Century", mimeo, European University Institute.

Weber, Klaus and Davis Gerald, 2000, "The Global Spread of Stock Exchanges", mimeo, University of Michigan

Wei, Shang-Jin, 2000, "Natural Openness and Good Government" NBER Working Paper # 7765

Table 1

Evolution of the Different Indicators of Financial Development

Whole sample indicates an average across all the countries we have data for. Constant sample indicates an average across countries for which we have data every year. Deposits to GDP is the ratio of commercial and savings bank deposits to GDP. Stock market Cap to GDP is the ratio of the aggregate market value of equity of domestic companies divided by GDP. Number of companies to population is the ratio of number of domestic companies whose equity is publicly traded in a domestic stock exchange to the country's population in millions. Equity issues to GFCF is the ratio of funds raised through public equity offerings (both initial public offerings and seasoned equity issues) by domestic companies to gross fixed capital formation. N is the number of observations. Sources are in the Data Appendix, which is available on request from the authors.

Year	Deposits to GDP			Stock Market Cap to GDP			# companies to pop.			Equity Issues to GFCF		
	Whole Sample	N	Constant sample	Whole Sample	N	Constant sample	Whole Sample	N	Constant sample	Whole Sample	N	Constant sample
			N=20			N=10			N=10			N=7
1913	0.38	22	0.40	0.57	22	0.40	28.68	22	24.00	0.12	12	0.13
1929	0.49	21	0.51	0.57	11	0.49	33.80	14	27.75	0.35	15	0.34
1938	0.45	21	0.46	0.64	12	0.64	30.78	13	28.55	0.13	12	0.10
1950	0.33	22	0.34	0.31	14	0.28	38.63	16	23.80	0.06	11	0.03
1960	0.31	22	0.33	0.48	18	0.45	31.85	19	22.38	0.07	16	0.05
1970	0.31	22	0.33	0.51	19	0.45	23.66	19	21.22	0.06	16	0.02
1980	0.34	22	0.35	0.26	22	0.25	26.70	21	23.71	0.03	18	0.03
1990	0.41	21	0.40	0.57	21	0.51	22.18	22	23.21	0.05	20	0.05
1999	0.46	21	0.45	1.02	23	1.08	26.30	22	24.46	0.13	20	0.18

Table 2

Evolution of the ratio of Deposits to GDP

Deposits to GDP is the ratio of commercial and savings deposits divided by GDP. Until 1990 the source is Mitchell (1995). We extrapolate the 1999 data from the 1994 data in Mitchell using the rate of growth of deposits as reported in *International Financial Statistics* published by the International Monetary Fund.

Country	Year								
	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	0.29	0.36	0.36	0.30	0.22	0.19	0.28	0.07	0.24
Australia	0.37	0.45	0.45	0.69	0.43	0.38	0.29	0.42	0.49
Austria	1.12	0.37	0.33	0.21	0.28	0.31	0.62	0.73	0.70
Belgium	0.68	0.48	0.69	0.44	0.35	0.40	0.39	0.38	0.85
Brazil	0.12	0.16	0.21	0.20	0.15	0.12	0.17		
Canada	0.22	0.13	0.16	0.17	0.13	0.37	0.47	0.49	0.61
Chile	0.16	0.15	0.09	0.10	0.06	0.07	0.07	0.12	0.19
Cuba									
Denmark	0.76	0.46	0.39	0.32	0.27	0.25	0.28	0.55	0.54
Egypt				0.17	0.17	0.14	0.31	0.67	0.51
France	0.42	0.44	0.36	0.24	0.30	0.33	0.45	0.42	0.47
Germany	0.53	0.27	0.25	0.15	0.23	0.29	0.30	0.32	0.35
India	0.04	0.09	0.12	0.08	0.08	0.09	0.08	0.09	0.09
Italy	0.23	0.21	0.31	0.23	0.81	0.54	0.59	0.40	0.28
Japan	0.13	0.22	0.52	0.14	0.21	0.33	0.48	0.51	0.53
Netherlands	0.22	0.32	0.52	0.28	0.28	0.26	0.25	0.73	0.69
Norway	0.65	0.89	0.56	0.52	0.43	0.49	0.30	0.50	0.49
Russia	0.21								
South Africa	0.09	0.09	0.16	0.18	0.18	0.16	0.12	0.16	0.21
Spain	0.07	0.24	0.24	0.33	0.37	0.53	0.44	0.66	0.71
Sweden	0.69	0.69	0.73	0.59	0.54	0.50	0.48	0.40	0.39
Switzerland	0.93	1.08	1.13	0.79	0.78	0.69	0.69	0.54	0.66
UK	0.10	2.88	1.34	0.67	0.32	0.22	0.14	0.33	0.39
US	0.33	0.33	0.44	0.40	0.30	0.25	0.18	0.19	0.17

Table 3

Evolution of Stock Market Capitalization over GDP

Stock market capitalization to GDP is the ratio of the aggregate market value of equity of domestic companies to GDP. Sources are in the Data Appendix, which is available on request from the authors.

<i>Country</i>	<i>Year</i>								
	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	0.17	.	.	.	0.05	0.03	0.11	.	0.15
Australia	0.39	0.50	0.91	0.75	0.94	0.76	0.38	0.37	1.13
Austria	0.76	.	.	.	.	0.09	0.03	0.17	0.17
Belgium	0.99	1.31	.	.	0.32	0.23	0.09	0.31	0.82
Brazil	0.25	.	.	.	.	.	0.05	0.08	0.45
Canada	0.74	.	1.00	0.57	1.59	1.75	0.46	1.22	1.22
Chile	0.17	.	.	.	0.12	0.00	0.34	0.50	1.05
Cuba	2.19	.	.	.	.	.	.	.	.
Denmark	0.36	0.17	0.25	0.10	0.14	0.17	0.09	0.67	0.67
Egypt	1.09	.	.	.	0.16	.	0.01	0.06	0.29
France	0.78	.	0.19	0.08	0.28	0.16	0.09	0.24	1.17
Germany	0.44	0.35	0.18	0.15	0.35	0.16	0.09	0.20	0.67
India	0.02	0.07	0.07	0.07	0.07	0.06	0.05	0.16	0.46
Italy	0.17	0.23	0.26	0.07	0.42	0.14	0.07	0.13	0.68
Japan	0.49	1.20	1.81	0.05	0.36	0.23	0.33	1.64	0.95
Netherlands	0.56	.	0.74	0.25	0.67	0.42	0.19	0.50	2.03
Norway	0.16	0.22	0.18	0.21	0.26	0.23	0.54	0.23	0.70
Russia	0.18	.	.	.	.	.	.	.	0.11
South Africa	.	.	.	0.68	0.91	1.97	1.23	1.33	1.20
Spain	.	.	.	.	.	.	0.17	0.41	0.69
Sweden	0.47	0.41	0.30	0.18	0.24	0.14	0.11	0.39	1.77
Switzerland	0.58	.	.	.	.	0.50	0.44	1.93	3.23
UK	1.09	1.03	1.92	0.86	1.15	1.99	0.38	0.81	2.25
US	0.39	0.75	0.56	0.33	0.61	0.66	0.46	0.54	1.52

Table 4

Evolution of Fraction of Gross Fixed Capital Formation Raised via Equity

Amount of funds raised through public equity offerings (both initial public offerings and seasoned equity issues) by domestic companies divided by gross fixed capital formation. Sources are in the Data Appendix, which is available on request from the authors.

<i>Country</i>	<i>Year</i>								
	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	.	.	.	.	0.01	.	0.01	0.10	0.02
Australia	.	0.13	.	0.19	0.09	0.05	0.05	0.09	0.24
Austria	.	0.07	.	.	0.04	0.07	0.00	0.07	0.03
Belgium	0.23	0.85	0.03	.	0.09	0.08	0.03	0.01	0.06
Brazil	.	.	.	0.20	0.19	0.19	0.06	0.01	0.07
Canada	.	1.34	0.02	0.03	0.03	0.01	0.04	0.01	0.07
Chile	.	.	.	.	.	.	.	.	.
Cuba	.	.	.	.	.	.	.	.	.
Denmark	.	0.03	0.01	.	.	.	0.01	0.08	0.09
Egypt	.	.	.	.	.	.	.	.	0.31
France	0.14	0.26	0.03	0.02	0.04	0.04	0.06	0.02	0.09
Germany	0.07	0.17	0.06	0.00	0.04	0.02	0.01	0.04	0.06
India	.	.	.	.	.	0.00	0.00	0.00	0.08
Italy	0.07	0.26	0.03	0.02	0.08	0.02	0.04	0.04	0.12
Japan	0.08	0.13	0.75	.	0.15	0.03	0.01	0.02	0.08
Netherlands	0.38	0.61	0.45	0.02	0.02	0.00	0.01	0.10	0.67
Norway	.	0.05	0.01	.	.	.	.	0.04	0.06
Russia	0.17	.	.	.	.	.	.	.	.
South Africa	.	.	.	.	.	0.33	0.08	0.10	0.14
Spain	0.01	0.33	.	0.08	0.11	0.07	0.03	0.06	0.10
Sweden	0.08	0.34	0.06	0.01	0.03	0.00	0.00	0.03	0.10
Switzerland	0.03	.	.	.	0.02	.	.	0.02	.
UK	0.14	0.35	0.09	0.08	0.09	0.01	0.04	0.06	0.09
US	0.04	0.38	0.01	0.04	0.02	0.07	0.04	0.04	0.12

Table 5

Evolution of Number of Listed Companies per Million People

The number of listed companies per million people is the number of domestic companies whose equity is publicly traded in a domestic stock exchange divided by the population in millions. Sources are in the Data Appendix, which is available on request from the authors.

<i>Country</i>	<i>Year</i>								
	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	15.29				26.78	15.58	9.85	5.54	3.63
Australia	61.74	76.92	84.88	122.05	93.72		68.53	63.89	64.91
Austria	38.72	42.62	30.06	16.29	13.34	12.05	8.74	12.57	12.02
Belgium	108.7			55.09	42.60	38.39	22.85	18.50	14.33
Brazil	12.43	9.85	5.17	41.02		4.32	4.06	3.86	3.18
Canada	14.65			66.61	62.43	55.20	50.52	42.99	130.13
Chile	20.62				44.52	38.72	23.78	16.32	19.03
Cuba	12.69								
Denmark	38.22	54.86	85.25	81.28	75.75	52.14	42.54	50.18	44.80
Egypt	16.58	13.44			10.58	1.76		11.01	13.71
France	13.29		24.64	26.20	18.34	15.98	13.99	15.05	
Germany	27.96	19.73	10.91	13.22	11.33	9.07	7.46	6.53	12.74
India	0.82	1.81	2.59	3.13	0.00	0.00	3.11	7.31	6.48
Italy	6.32	6.40	3.11	2.70	2.79	2.46	2.36	3.82	4.54
Japan	7.53	16.65	19.48	9.15	8.35	15.19	14.80	16.76	20.00
Netherlands	65.87	95.48			21.42	15.95	15.12	17.39	15.14
Norway	33.51	41.50	45.98	37.98	37.10	37.90	44.53	44.80	49.62
Russia	2.02								0.81
South Africa				69.05	60.93	51.39	42.48	20.75	15.86
Spain							25.20	10.96	22.25
Sweden	20.64	16.36	14.93	12.83	14.04	13.18	12.39	14.14	31.46
Switzerland	61.53	67.80	55.46	52.47	51.74	58.72	78.03	49.61	34.01
UK	47.06						47.22	29.63	31.11
US	4.75	9.72	9.16	8.94	9.33	11.48	23.11	26.41	28.88

Table 6
Summary Statistics

Equity market cap./GDP is the equity market capitalization of domestic companies to GDP in 1913. Issues to GDP is the sum of equity and bond issues by domestic firms in 1912 to GDP in 1913. Per Capita Industrialization is the index of industrialization for that country in 1913 as computed by Bairoch (1982). Openness is the sum of exports and imports of goods in 1913 obtained from the League of Nations Yearbook divided by GDP in 1913. Tariffs are import duties as a percentage of special total imports (1909-1913) obtained from Bairoch (1989).

6 a. Summary Statistics

	Mean	Standard Deviation	Minimum	Maximum	Observations
Equity Market Cap./GDP	.490	.294	.02	1.09	18
Issues to GDP in 1912	.022	.015	.002	.055	17
Per Capita Industrialization	49.5	37.08	2	126	18
Openness (Trade Volume/GDP)	.59	.51	.11	2.32	18
Tariffs	13.0	9.5	0.4	37.4	17
Interaction of Per Capita Industrialization and Openness	29.1	31.1	.36	118.67	18

6 b. Pairwise Correlations Between Variables (Significance in Parentheses)

	Equity market Cap. to GDP	Per Capita Industrialization	Openness (Trade Volume/GDP)	Tariffs
Per Capita Industrialization	0.58 (0.01)			
Openness (Trade Volume/GDP)	0.33 (0.19)	0.01 (0.98)		
Tariffs	-0.37 (0.15)	-0.24 (0.35)	-0.37 (0.15)	
Interaction of Per Capita Industrialization and Openness	0.67 (0.00)	0.55 (0.02)	0.69 (0.00)	-0.37 (0.15)

Table 7
Financial Development and Openness in 1913

In panel A the dependent variable is equity market capitalization of domestic companies to GDP in 1913, in panel B it is the number of listed companies per million of population in 1913, and in panel C it is the total amount of securities issued to GDP, which is the sum of equity and bond issues by domestic firms in 1912 to GDP. Per Capita Industrialization is the index of industrialization for that country in 1913 as computed by Bairoch (1982). Openness is the sum of exports and imports of goods in 1913 (obtained from the League of Nations Yearbook) divided by GDP in 1913. Tariffs are import duties as a percentage of special total imports (1909-1913) obtained from Bairoch (1989). Coefficient estimates for per capita industrialization, its interaction with openness, and the corresponding standard errors are multiplied by 1000. Columns (iv)-(v) report instrumental variable estimates, where the instrument for openness is population size. All the regressions include a constant, whose coefficient is not reported. Standard errors are in parentheses. (*) indicates significance at the 10% level, (**) at the 5% level, (***) at the 1 % level.

7a: Equity Market Capitalization/GDP

Dependent variable:	Equity Market Capitalization/GDP				
	(i)	(ii)	(iii)	(iv)	(v)
Per Capita Industrialization	4.61*** (1.52)	2.42 (1.71)	2.11 (2.25)	1.55 (2.05)	8.77** (3.18)
Openness	0.18 (0.11)		-0.04 (0.19)		
Interaction of Per Capita Industrialization and Openness		4.76** (2.03)	5.44 (3.69)	6.62** (3.08)	
Interaction of Per Capita Industrialization and Tariffs					-0.38* (0.22)
Adjusted RSq	0.37	0.45	0.42	.	.
Observations	18	18	18	18	17

7b: Number of domestic companies listed/million population

Dependent variable:	N. companies/million population				
	(i)	(ii)	(iii)	(iv)	(v)
Per Capita Industrialization	215.8 (133.6)	-210.6 (116.0)	-199.5 (152.8)	-252.0* (137.0)	927.7** (442.3)
Openness	38.8*** (9.6)		-1.5 (12.7)		
Interaction of Per Capita Industrialization and Openness		924.1*** (138.1)	899.8*** (250.8)	1012.8*** (206.0)	
Interaction of Per Capita Industrialization and Tariffs					-60.9** (29.9)
Adjusted RSq	0.50	0.74	0.72	.	.
Observations	18	18	18	18	17

7c: Total securities issued/GDP

Dependent variable:	Securities issued/GDP				
	(i)	(ii)	(iii)	(iv)	(v)
Per Capita Industrialization	0.17 (0.10)	0.02 (0.10)	-0.09 (0.12)	-0.02 (0.11)	0.52** (0.22)
Openness	0.1 (0.01)		-0.01 (0.01)		
Interaction of Per Capita Industrialization and Openness		0.33** (0.11)	0.56** (0.19)	0.41** (0.17)	
Interaction of Per Capita Industrialization and Tariffs					-0.03* (0.01)
Adjusted RSq	0.14	0.39	0.44	.	.
Observations	17	17	17	17	17

Table 8

Financial Development and Openness in 1997

In panel A the dependent variable is the ratio of equity market capitalization to gross domestic product averaged over 1996-1998 from the World Development Indicators (World Bank). In panel B the dependent variable is the number of domestic companies listed over million inhabitants in 1997 from the Emerging Market Factbook. In panel C the dependent variable is the sum of equity and long-term private debt issues to GDP averaged over the 1990s from Beck et al. (1999). Log Per Capita Gross Domestic Product is the logarithm of the per capita GDP in PPP dollars as reported in the World Development Indicators. Openness is the sum of exports and imports of goods divided by GDP in 1980-82 and 1996-98 (source World Bank). In column (iv) the interaction between logarithm of the per capita GDP and openness is instrumented by the interaction between logarithm of the per capita GDP and constructed trade share in Frankel and Romer (1999). All the regressions include a constant, whose coefficient is not reported. The standard errors are in parentheses. (*) indicates significance at the 10% level, (**) at the 5% level, (***) at the 1% level.

8a: Equity Market Capitalization/GDP

Dependent variable:	Equity Market Capitalization/GDP			
	(i)	(ii)	(iii)	(iv)
Log Per Capita GDP	0.264*** (0.044)	0.243*** (0.046)	0.108 (0.084)	0.198*** (0.063)
Openness	0.214*** (0.082)		-1.606* (0.833)	
Interaction of Log Per Capita GDP and Openness		0.025*** (0.009)	0.195** (0.089)	0.048*** (0.024)
Adjusted RSq	0.34	0.34	0.36	.
Observations	96	96	96	82

8b: Number of domestic companies listed/million population

Dependent variable:	N. companies/million population			
	(i)	(ii)	(iii)	(iv)
Log Per Capita GDP	10.96 ^{***} (3.83)	8.86 ^{**} (3.98)	8.95 (7.38)	4.26 (4.71)
Openness	25.10 ^{***} (7.11)		1.04 (75.59)	
Interaction of Log Per Capita GDP and Openness		2.69 ^{***} (0.76)	2.58 (8.06)	5.35 ^{***} (1.78)
Adjusted RSq	0.20	0.20	0.20	.
Observations	91	91	91	81

8c: Security issues/GDP

Dependent variable:	Security Issues n/GDP			
	(i)	(ii)	(iii)	(iv)
Log Per Capita GDP	0.026 ^{***} (0.007)	0.025 ^{***} (0.007)	0.031 ^{**} (0.012)	0.018 [*] (0.009)
Openness	0.022 ^{**} (0.011)		0.082 (0.142)	
Interaction of Log Per Capita GDP and Openness		0.002 [*] (0.001)	-0.006 (0.015)	0.006 ^{**} (0.003)
Adjusted RSq	0.39	0.38	0.37	.
Observations	34	34	34	34

Table 9

Financial Development and Openness over time

The dependent variable in each regression is a measure of financial development (equity market cap. to GDP and number of companies per million inhabitants). The explanatory variables are a constant (coefficient not reported), a measure of industrialization (coefficients not reported), and the interaction between this measure of industrialization and openness (the only coefficient reported). For the period 1913-1980 the measure of industrialization is Bairoch (1982)'s index of industrialization, for the period 1981-1997 it is the logarithm of the per capita GDP in PPP dollars as reported in the World Development Indicators. Coefficient estimates for the interaction of the per capita industrialization index with openness and the corresponding standard errors are multiplied by 1000. Standard errors are in parentheses. Coefficients in bold are statistically different from zero at the 10% level.

Dependent variable:	Year								1981	1997
	1913	1929	1938	1950	1960	1970	1980			
	<i>Coefficient of Interaction Term (Demand = Index of Industrialization)</i>							<i>Coefficient of Interaction Term (Demand=Log Per Capita GDP)</i>		
<i>Equity market capitalization To GDP</i>	4.76 (2.03)	6.53 (4.46)	12.46 (16.90)	2.20 (3.31)	-1.81 (2.92)	-1.37 (2.45)	-0.65 (0.89)	0.036 (0.05)	0.046 (0.01)	
Adjusted RSq	0.45	0.13	-0.14	-0.07	-0.14	-0.13	-0.09	0.56	0.46	
N	18	10	12	13	13	16	18	45	45	
<i>Number of companies per million</i>	924.1 (138.1)	1741.7 (531.6)	1627.5 (675.8)	552.3 (388.5)	190.6 (181.9)	128.5 (63.8)	35.7 (68.3)	1.78 (0.72)	2.71 (0.53)	
Adjusted RSq	0.74	0.45	0.26	0.00	-0.07	0.17	-0.06	0.21	0.53	
N	18	12	12	15	14	15	18	49	49	

Table 10
Financial Development and Openness 1913-1980

This panel pools the cross-sections from the following years: 1913, 1929, 1938, 1950, 1960, 1970, and 1980. The dependent variable is the ratio of equity market capitalization to gross domestic product measure in a year. The first two columns are estimated by instrumental variables, where openness is instrumented by constructed trade share in Frankel and Romer (1999). The next two have fixed country effects. Per Capita Industrialization is the index of industrialization for that country in that year as computed by Bairoch (1982). Openness is the ratio of the sum of exports and imports of goods to GDP that year (source Mitchell (1995)). The indicator for low international capital mobility equals 1 in the years from 1938 to 1980 and 0 otherwise. All regressions include a calendar year dummy. All coefficient estimates and standard errors referring to per capital industrialization index are multiplied by 1000. The standard errors, which are corrected for possible clustering of the residual at a country level, are in parentheses. (*) indicates significance at the 10% level, (**) at the 5% level, (***) at the 1 % level.

Estimation Technique:	Fixed Effects	Fixed Effects	IV	IV
	(i)	(ii)	(iii)	(iv)
Per Capita Industrialization	0.157 (0.741)	0.308 (0.799)	0.360 (1.171)	1.301 (1.312)
Openness	0.186 (0.220)		0.700* (0.404)	
Openness *Indicator if period of Low International Capital Mobility	-0.236 (0.286)		-1.750* (0.921)	
Interaction of Per Capita Industrialization and Openness		4.467 (3.316)		6.515*** (0.974)
Interaction of Per Capita Industrialization and Openness *Indicator if period of Low International Capital Mobility		-4.853* (2.639)		-10.463* (2.210)
Adjusted RSq	0.51	0.53	.	.
Observations	100	100	100	100

Table 11
Financial Development and Openness over time 1981-1997

This panel contains data from two cross-sections: Averages over 1980-82 and 1996-98. The dependent variable is the ratio of equity market capitalization to gross domestic product averaged over 1980-82 (from Beck, et al. (1999)), and over 1996-1998 from the World Development Indicators (World Bank). Log Per Capita Gross Domestic Product is the logarithm of the per capita GDP in PPP dollars as reported in the World Development Indicators. Openness is the sum of exports and imports of goods divided by GDP averaged over 1980-82 and 1996-98 (source World Bank). The indicator for Low International Capital Mobility equals 1 in 1980-82 and 0 in 1996-98. All regressions include calendar year indicators. The standard errors, which are corrected for possible clustering of the residual at a country level, are in parentheses. (*) indicates significance at the 10% level, (**) at the 5% level, (***) at the 1 % level.

Estimation Technique:	Fixed Effects	Fixed Effects	IV	IV
	(i)	(ii)	(iii)	(iv)
Log Per Capita GDP	0.193 (0.165)	0.111 (0.161)	0.155*** (0.05)	0.127** (0.054)
Openness	0.703*** (0.183)		0.627** (0.270)	
Openness *Indicator if period of Low International Capital Mobility	-0.139 (0.089)		-0.374** (0.186)	
Interaction of Log Per Capita GDP and Openness		0.083*** (0.019)		0.062** (0.024)
Interaction of Log Per Capita GDP and Openness *Indicator if period of Low International Capital Mobility		-0.014 (0.009)		-0.034** (0.015)
Adjusted RSq	0.77	0.79	.	.
Observations	90	90	90	90

Table 12
Openness and Legal System over time

Panel A pools the cross-sections from the following years: 1913, 1929, 1938, 1950, 1960, 1970, and 1980. Panel B contains data from two cross-sections: Averages over 1980-82 and 1996-98. The first two columns are estimated by OLS, the next two by instrumental variables, where openness is instrumented by constructed trade share in Frankel and Romer (1999). The dependent variable is the ratio of equity market capitalization to gross domestic product measure in a year. Per Capita Industrialization is the index of industrialization for that country in that year as computed by Bairoch (1982). Log Per Capita Gross Domestic Product is the logarithm of the per capita GDP in PPP dollars as reported in the World Development Indicators. Openness is the sum of exports and imports of goods divided by GDP in 1980-82 and 1996-98 (source World Bank). The indicator for Low International Capital Mobility equals 1 in 1980-82 and 0 in 1996-98. The sample is divided into countries with a legal system based upon common law and countries with a legal system based upon civil coded law. All regressions include calendar year indicators. The standard errors, which are corrected for possible clustering of the residual at a country level, are in parentheses. (*) indicates significance at the 10% level, (**) at the 5% level, (***) at the 1 % level.

Panel A: 1913-1980

Estimation Technique:	OLS		IV	
Sample:	Common Law	Civil Law	Common Law	Civil Law
	(i)	(ii)	(iii)	(iv)
Per Capita Industrialization	- 1.06 (0.68)	-0.60 (0.47))	- 1.38 (0.77)	-2.39 (4.09)
Interaction of Per Capita Industrialization and Openness	14.84*** (2.57)	6.35*** (1.78)	14.87*** (2.89)	9.44*** (2.76)
Interaction of Per Capita Industrialization and Openness *Indicator if period of Low International Capital Mobility	-8.99** (2.86)	-5.77*** (1.93)	-7.21** (2.45)	-6.09 (4.34)
RSq	0.51	0.35	.	.
Observations	34	66	34	66

Panel B: 1981-1997

Estimation Technique:	OLS		IV	
	Common Law	Civil Law	Common Law	Civil Law
	(i)	(ii)	(iii)	(iv)
Log Per Capita GDP	0.271 ^{***} (0.050)	0.073 (0.040)	0.275 ^{***} (0.048)	0.042 (0.050)
Interaction of Log Per Capita GDP and Openness	0.027 (0.019)	0.071 ^{***} (0.017)	0.024 (0.019)	0.094 ^{***} (0.011)
Interaction of Log Per Capita GDP and Openness *Indicator if period of Low International Capital Mobility	-0.003 (0.019)	-0.044 ^{***} (0.010)	0.001 (0.017)	-0.049 ^{***} (0.048)
RSq	0.67	0.68	.	.
Observations	32	58	32	58

Figure 1: Regulation of Entry and Financial Development

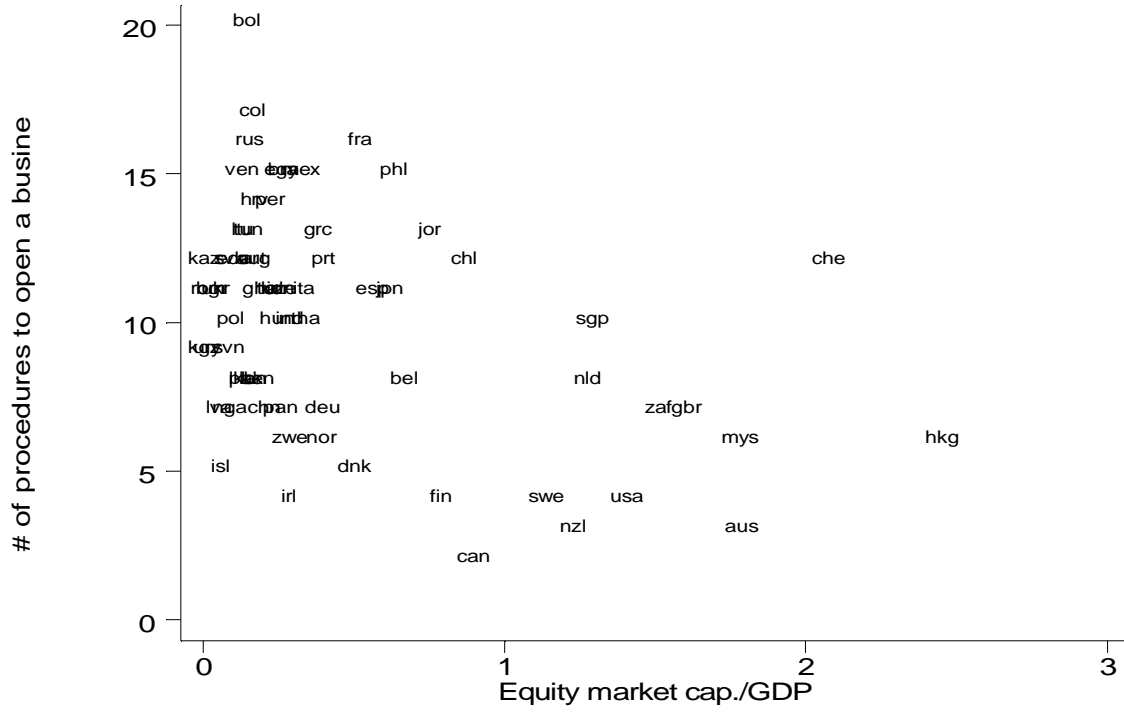
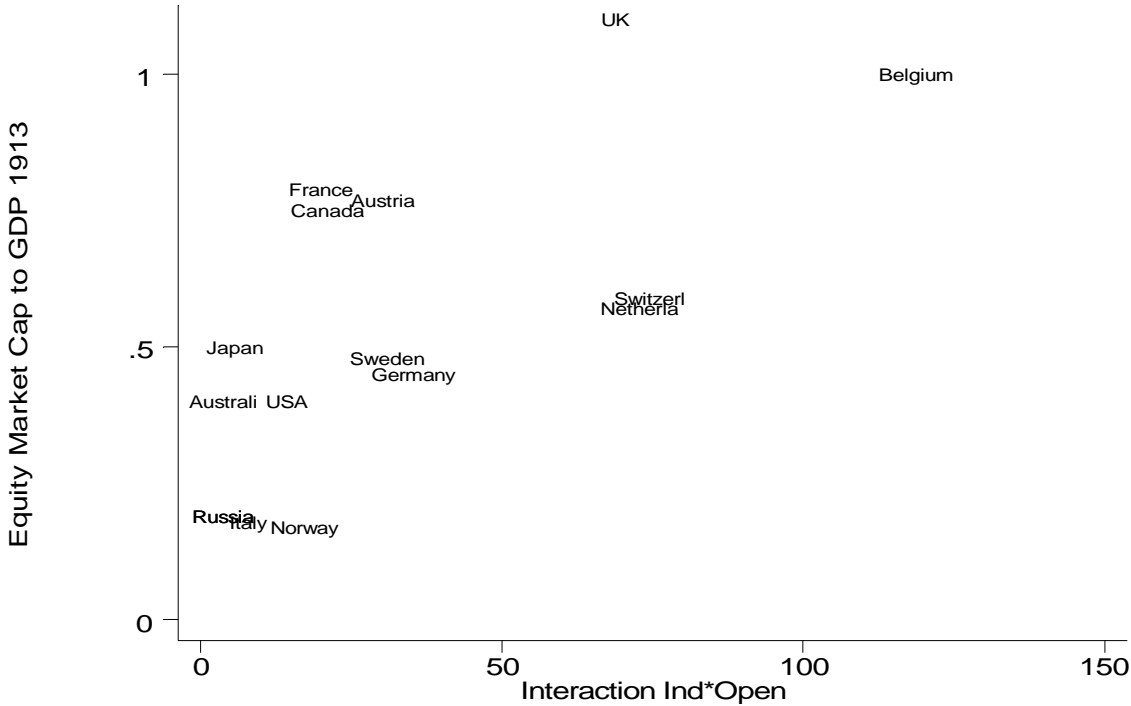


Figure 2: Market Capitalization vs. Interaction Between Industrialization and Openness



Endnotes

¹ See Engelbourg and Bushkoff (1996) and Chandler (1990).

² In the United States, the ratio of private fixed nonresidential assets to GDP in 1925 (the first year the numerator is computed by the Bureau of Economic Analysis) is 2.56, while in 1999 is 2.19.

³ One could also argue for the existence of political incumbents. To the extent that financial development makes matters transparent, and constrains the political favors they can do or the power they have, they may also be opposed.

⁴ We have not considered the government as an interest group in its own right. But it is one, and it has the incentive to support financial development when it sees, for example, that doing so will alleviate its budget constraint. Thus the government may support opening up if it finds that it can borrow resources from international markets, i.e., when the world economy is healthy.

⁵ There may be a mechanical link between the volume of transactions on the international capital market and trade. For this reason, we only use the capitalization of domestic companies or the volume of their securities issues as our measure of financial development. This measure should not be mechanically linked to the volume of trade since it includes only domestic firms.

⁶ As a denominator we use GDP rather than GFCF to maximize the number of observations available.

⁷ We use population in Table 7 as an instrument because it is available contemporaneously in 1913, but we check that the results hold even when we use the Frankel and Romer instrument.

⁸ We have also estimated the differential impact of openness in the two sets of countries by pooling all the observations. In the first panel the coefficient of the interaction in Civil Law countries in periods of low capital flows is significantly lower than its value in periods of high capital flows and also significantly lower than its contemporaneous value in Common Law countries. In the second panel the coefficient of the interaction in Civil Law countries in periods of high capital flows is similarly significantly higher.

⁹ Aoki, Patrick and Sheard (1994), and Hoshi and Kashyap (1998).

¹⁰ Aoki, Patrick and Sheard (1994)

¹¹ These figures are from Teranishi (1994)

¹² That this was a cartel is further reinforced by Hoshi and Kashyap's observation that security houses that were not part of the 1931 agreement started competing fiercely for underwriting business and continued to underwrite unsecured bonds. Thus the market itself did not appear to develop a distaste for unsecured bonds.

¹³ Bebchuk and Roe (1999) develop a theory of path dependence of governance to account for phenomena such as these.

¹⁴ Kennedy (1999, p328)

¹⁵ Kennedy (1999, p341)