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The Great Reversals

THE POLITICS OF FINANCIAL DEVELOPMENT IN THE 20TH CENTURY

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ABSTRACT/RÉSUMÉ

We attempt to identify and explain the broad patterns of financial development in developed countries over the twentieth century. We find that, contrary to the predictions of most existing theories, indicators of financial development do not seem monotonic over time. In particular, we find that by most measures, countries were more financially developed in 1913 than in 1980 and that a major reversal took place between 1913 and 1950. To explain this we outline a simple theory of the political economy of financial development. Empirically, our analysis suggests that the forces opposing financial development will be weaker when a country is open to international trade and capital flows. We find this to be true both in the cross-section and over time. In periods of free capital movement world-wide, a country's level of financial development is directly related to its openness to trade. Similarly, the low frequency movements of financial development over time appear to be correlated with the degree to which capital is mobile world-wide.

JEL classification: G15, G18, G28, N20

Keywords: financial development, financial systems.

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Nous essayons d'identifier et d'expliquer les tendances générales dans le domaine du développement financier dans les pays développés au vingtième siècle. Nous trouvons qu'à l'encontre de toutes les prédictions des théories existantes, les indicateurs de développement financier ne varient pas de façon monotone dans le temps. En particulier, nous trouvons que d'après la plupart des indicateurs, les pays étaient financièrement plus développés en 1913 qu'en 1980 et qu'un revirement majeur a eu lieu entre 1913 et 1950. Afin d'expliquer ceci, nous décrivons une théorie simple de l'économie politique du développement financier. Empiriquement notre analyse suggère que les forces qui s'opposent au développement financier seraient plus faibles lorsqu'un pays est ouvert au commerce international et aux mouvements de capitaux. Ceci est vrai à la fois en coupe internationale et dans le temps. Dans les périodes où les mouvements internationaux de capitaux sont libres, le niveau de développement financier d'un pays est lié directement à son ouverture commerciale. De même, les mouvements de faible fréquence du développement financier dans le temps semblent être corrélés selon le degré de la mobilité du capital au niveau international.

Classification JEL : .G15, G18, G28, N20

Mots-clés : développement financier, systèmes financiers

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THE GREAT REVERSALS: THE POLITICS OF FINANCIAL DEVELOPMENT IN THE 20TH CENTURY

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1. Introduction

1. It has long been observed that a country's state of development is strongly positively correlated with the state of development of its financial sector. For example, on the basis of data from 35 countries between 1860 and 1963, Goldsmith (1969, p. 48) concludes that "a rough parallelism can be observed between economic and financial development if periods of several decades are considered" and "there are even indications in the few countries for which data are available that periods of more rapid economic growth have been accompanied, though not without exception, by an above-average rate of financial development".

2. Recent studies suggest this association is more than simply correlation, and financial development does, in fact, advance economic growth. In a study of 80 countries over the period 1960-1989, King and Levine (1993) find that beginning-of-decade measures of a country's financial development are strongly related to the country's economic growth, capital accumulation, and productivity growth over the subsequent decade. Using the de-regulation of banking in different states of the United States between 1972 and 1991 as a proxy for a quantum jump in financial development, Jayaratne and Strahan (1996) find that annual growth rates in a state increased by 0.51 to 1.19 percentage points a year after de-regulation. Rajan and Zingales (1998*a*) find that the development of a country's financial markets and institutions dramatically increases the growth of industries, such as Computers or Pharmaceuticals, which need long-term external finance. With all these studies indicating that financial development does indeed facilitate growth, one is compelled to ask why so many countries score so low on measures of financial sector health?

3. The simple answer, and one favoured 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, p. 86) "where enterprise leads, finance follows". For example, the enormous financing requirements of railroads in the United States (1 billion dollars up to 1867 and 10 billion up to 1890) lead to the development of public markets for corporate debt and later for stock, with 40 per cent of this capital coming from Europe.[2] 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

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1. University of Chicago and NBER. This paper is a development of some ideas in a previous working paper entitled "The Politics of Financial Development". We thank the Bradley Foundation, the Centre for Study of the State and the Economy, the Centre for Research on Securities Prices, and the World Bank for funding support. Rajan also thanks the National Science Foundation. We benefited from comments by Lucian Bebchuk, Peter Hogfeldt, Mark Roe and Andrei Shleifer.

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

infrastructure in the United States that 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.

4. This argument is probably an oversimplification because it 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 this time was inadequate -- the demand for more, and cheaper, credit was a recurrent theme in political debates in the United States at that time.

5. An alternative explanation is there may be impediments to supply rising to meet demand. The fixed costs of setting up financial institutions and market infrastructure will not be met until there is an adequate demand for financing. Moreover, the financial sector needs time: to gain experience, build reputations, and develop appropriate financial technology. It also needs an enabling infrastructure -- for example, a legal environment that allows a wide variety of contracts to be written, enforces them at low cost, and speedily imposes punishment when they are breached.

6. These impediments, however, may not be enough to explain why France and the United States differed so much. Presumably, both countries were big enough that fixed costs were relatively small compared to the demand for finance. Moreover, the countries had experienced a significant demand for finance for a long enough period that the time to build is unlikely to have been a constraint. While the seminal work of La Porta *et al.* (1997, 1998) suggests a country's legal tradition (in particular, whether it has a civil code or common law) may have a causal effect on its financial development -- presumably because the ease of creating the enabling infrastructure is affected by legal tradition -- the arguments in that literature would predict a relatively underdeveloped financial sector in civil code France and not the other way around.

7. The greater intellectual problem with relying on the impediments described above to explain differences in financial development is that they suggest financial development will either take-off permanently (for example, once fixed costs are overcome or minimum reputational levels attained), or remain permanently constrained (for example, if the French civil code is hostile to financial markets as suggested by La Porta *et al.*). Yet the historical evidence suggests measures of financial development wax and wane. In 1913, France's stock market capitalisation as a fraction of GDP was almost twice the United States (0.78 vs. 0.41). By 1980, roles had reversed dramatically -- it was now barely one fourth the capitalisation in the United States (0.09 vs. 0.46). And in 1999, the two countries seem to have converged (1.17 vs. 1.52).

8. Similarly, Tilly (1992, p. 103-104) finds both the volume of total market issues, and the proportion of issuance consisting of equity were greater in Germany in the beginning of the 20th century than they were in the United Kingdom. He concludes that in Germany "…banks and shareholders generally were well informed as to the financial status of most listed industrial companies…" while "British investor preferences in favour of fixed-interest securities reflected the paucity of information and relatively weak financial controls on the operations of company founders and insiders". Yet La Porta *et al.* (1998) find that in the middle of the 1990s, the United Kingdom (and other Common Law countries) scores very high on shareholder rights while Germany fares miserably. Moreover the United Kingdom has a score of 78 on accounting standards (a measure of disclosure) while Germany comes in with a score of only 62. It is no wonder that they claim the United Kingdom is more equity friendly than Germany, and this certainly is reflected in the relative stock market capitalisation of the two countries at the time of their study. But Tilly suggests the greater equity friendliness was not true historically, nor is it necessarily true today with the Deutsche Bourse being the chosen location for high technology IPOs in the failed merger with the London Stock Exchange.

9. Before we attempt an answer to these questions, let us outline the facts more systematically. We gather a time series of the main indicators of financial development for a large cross section of countries. We find, using a variety of measures of financial development, that the average level of financial development in 1913 for a number of countries was quite high, comparable to that in 1990. Much as today, there was substantial variation even then among countries. By most indicators, the main continental European countries were more developed financially than the United States. It fact, contrary to the findings of La Porta *et al.* (1997) for the 1990s, we find that Common Law countries were not more financially developed in 1913. Indicators of financial development fell in all countries between 1913 and 1980. Since then, there has been a revival of financial markets.

10. We want to understand both what explains cross-sectional differences in financial development as well as what can explain the observed time series variation. The observed low frequency reversals in financial development cannot be explained with fixed costs or time invariant institutional factors (such as type of legal system). In our view they are best explained by shifting political coalitions. Of course, it is not surprising that politics has influence -- there are few areas of economic activity that are immune to politics. Nevertheless, it is useful to identify which groups may actively oppose something that seems so beneficial as the development of financial markets, and when they would most do so.

11. Our main argument for when anti-market forces may become strong has two parts. The first is that incumbents -- whether in industry, agriculture, or finance -- can be hostile to arm's length markets because anonymous markets do not respect the value of incumbency, and instead can give birth to competition. Nevertheless, it is possible for the forces of incumbency to be muted. One such situation is when opportunities outside the economy explode. Incumbents then have a reason to allow the economy to open up, especially if access to other markets requires a quid-pro-quo response. The resulting competition from external sources in both the product and financial markets make it both hard and unprofitable for domestic incumbents to continue to keep the domestic financial sector repressed. We believe that the increasing openness of the world economy both in the decades before 1913 and the decades before the close of the millennium led to the observed world-wide increase in financial development.

12. But what then explains the reversal? We will argue that the competitive forces unleashed by open markets can destroy some forms of relationships and associated insurance provided by social and economic institutions.[3] These forces also reduced the ability of the political authorities in each country to intervene to provide the insurance. The consequences were not particularly troubling when economies were doing well. But as the world slid into depression towards the end of the 1920s, the severe and widespread shocks enabled the public to overcome collective action problems, and the popular clamour from the masses for political action to reverse the effects of the market strengthened. The initial response of many countries was to depart from the Gold Standard and retreat into autarky. Protected from outside competition, incumbents rode on the coattails of the popular demand for insurance to initiate actions to restrain the market.

13. The post World War II Bretton Woods consensus recognised both the havoc caused by autarky, as well as the political need for insurance. The compromise was that financial development was sacrificed at the altar of free trade. The attempt for the next quarter century was to encourage the free flow of goods and services across borders while heavily restricting the flow of capital. The capital controls that were in place over this time, we believe, hampered the revival of financial markets. With the break down in Bretton Woods in the mid 1970s, and the increasingly free flow of capital across borders, domestic

3. Polanyi (1944) is an early, and powerful articulation of this argument. Since then it has been formalized by Diamond and Dybvig (1983) in the context of banking, and explored in a variety of ways by Mayer (1988), and Petersen and Rajan (1995). Allen and Gale (2000) is an excellent treatment of the relative benefits of markets and intermediaries.

financial systems could no longer stay immune from foreign competition, and financial development again took off.

14. We are, of course, not the first to point the influence of politics on financial development, though our focus is somewhat different from previous work. For example, in their excellent study of English public finance after the Glorious Revolution, North and Weingast (1989) argue that the English government had to build credibility it would not expropriate, before public debt markets could develop in England. Roe (1994) suggests that the popular fear of financial monopolies in the United States lead to legislation like the Glass Steagall Act, limiting the activities and size of financial institutions in the United States. Jensen (1993) argues that legislation crimped the market for corporate control even while it was having salutary effects on US industry. Our paper is related to these, especially the last in that we also emphasise the power of incumbents in retarding financial development, but our focus is across countries.

15. Others have attempted to explain the patterns of financial development across countries. Foremost in this is the seminal work of La Porta, Lopez de Silanes, Shleifer, and Vishny (1997, 1998) who argue that countries with a Common Law origin seem more friendly to the development of markets perhaps because it protects investors better. However, our work indicates that financial markets in Common Law countries in the historic past, or even today, are not necessarily superior to those in Civil Law countries. The relative market friendliness of Common Law countries uncovered by La Porta *et al.* seems a fluctuating phenomenon, and is unlikely to be explained by something as permanent as the origin of the legal system. We conjecture that the Common Law indicator may proxy for the kind of political tradition a country has, which then serves to moderate fluctuations in the political power of interest groups.

16. Finally, a number of recent papers attempt, like us, to explain cross-country patterns in financial development. Verdier (1999) argues that political structure may explain the origins of universal banking in the 19th century, while Fohlin (2000) surveys the existing literature on legal and political forces affecting financial development to derive testable implications. Neither paper emphasises the reversals, which are our focus. Roe (1999) suggests that corporations in Continental Europe are more closely held because of the potential for higher agency costs there as a result of pro-labour legislation passed in the 1920s and 1930s. There is a commonality between our work and his in that he describes specifically how legislation intended to protect workers against the vagaries of market forces may eventually curtail certain forms of financing. There are differences. For example, given the worker empowerment that is in place, he sees little incentive for firms to press for laws protecting minority investors. By contrast, we believe that worker empowerment and the protection of incumbent management is part of a wider pact mediated by governments that comes under pressure as an economy opens up.

17. Pagano and Volpin (1999) 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. Thus low investor protection and high employment protection go together, a prediction they verify empirically. Our model differs in the details in that incumbents settle for low financial development (cartelised banks, poorly developed financial infrastructure) if it keeps out competition, and workers may, or may not, be part of this consensus (they were not in Germany and Italy during the Fascist era). Our most important contribution is, however, to try and understand when this consensus develops and when it breaks down.

18. Since our theory is based on public choice, it owes much to the work in that literature. In particular, we rely on Olson's (1965) and Stigler's (1970) idea that small interest groups have disproportionate power. However, because our focus is on financial development, we have to tease out the specific interests of various groups. The idea that foreign competition through free trade will lead to a reduction in the power of domestic interest groups is also contained elsewhere (*e.g.* Olson, 1982). However, the details of the process are important. Foreign competition does not just expose the inefficiencies of restrictions imposed in the interests of incumbents, it also reduces the value of those

restrictions, as well as strengthens suppressed interest groups. Consequently, we will argue that free trade and the free flow of capital are mutually reinforcing for the cause of financial development, and that having just free trade may not be sufficient.

19. 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. What is particularly interesting is that countries like France that had moribund capital markets until recently had flourishing ones in the early part of the century. By contrast, Anglo-American economies did not seem to have a particular advantage in financing domestic firms through capital markets at that time. In Section 2, we present a political theory of why some countries develop their financial systems and others not. In Section 3, we test some of the implications of this theory. In Section 4 we explore how the political economy of financial development can explain reversals, and in Section 5 we explain why financial markets took time to re-emerge after World War II. Section 6 concludes.

1. Evolution of financial development over the twentieth century

20. We face two challenges in documenting the changing levels of financial development over the course of the twentieth century. One, common to any attempt to compare financial development, both across countries and over time, is how to measure financial development. There is no consensus on the correct method. Theoretically, the right measure would be the ease with which companies in need of external funds can access them, and the ease with which investors can get an adequate return. Presumably, the right measure also reflects the sophistication and competitiveness of, and transaction costs embedded in, the financial system. Unfortunately, these are not measures that can be easily computed even in the most developed countries today, let alone in the past for countries that have not been as fastidious about statistics.

21. The common practice in the literature (*e.g.* King and Levine, 1993; Demirguc-Kunt and Maksimovic, 1998; Levine and Zervos, 1998; Rajan and Zingales, 1998*a*) is to compute ratios of different aspects of the financial system (such as deposits, equity market capitalisation) to measures of the size of the economy. While not strongly motivated by theory, these ratios broadly capture a country's level of financial sophistication and they are standard in the literature. Thus, for ease of comparison we will try, as best as the available data allow us, to use these measures.

22. The second more formidable challenge, specific to the historical nature of our analysis, is the difficulty in gathering 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.

1.1. Historical differences in reporting data

23. 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. There was good reason for this. 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, in many countries stock prices 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 fact that can be appreciated by reading through the investment advice contained in the *Review of Financial Reviews* (a British analogue to Barrons).

24. 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 then the subset of those publicly traded. This is not surprising if one remembers that in most countries free incorporation was introduced only late in the nineteenth century. As a result, most registered corporations were newly formed and they had to appeal in one way or another to the public to raise the capital necessary to get started. Nevertheless, to make the numbers more comparable across time we classify companies as publicly traded only if the firm is quoted. Even with this requirement, we may still have very infrequently traded stock.

25. 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 Rio but not in San Paulo. Companies listed only in Osaka represent a not inconsiderable portion of the total companies listed in Japan. The most extreme case is Germany, probably as a consequence of the delayed political reunification. In 1913 Germany had nine major stock exchanges and Berlin, the main one, represented only about 50 per cent of the total capitalisation.

26. Regional (or secondary) stock exchanges represent a challenge from a data collection point of view. Since many have disappeared or have been absorbed by the main exchange, they tend not to be well documented. We try, as much as possible, to reconstruct a measure that includes all the stock exchanges, eliminating double listing. When this is not possible, we compute the ratio of the capitalisation of the secondary exchange to main exchange at the earliest day 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 capitalisation in countries with fragmented stock markets. This should be kept in mind in the analysis.

1.2. Various measures of financial development

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

Banking sector

28. As a measure of the development of the banking sector we use the ratio of deposits (commercial banks plus savings banks) to GDP. This measure captures only the liability side of banks, ignoring differences in the composition of bank's assets. This may matter. For example, German banks had a bigger fraction of their assets invested in commercial loans than British banks. The ratio of deposits to GDP, thus, will underestimate the importance of German banks in the credit market. 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.

Equity issues

29. One measure of the importance of equity markets is the amount 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 normalise 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 realise 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.

30. Another drawback of this measure stems from the well-known cyclicality of equity issues. A disproportionate amount of equity issues are concentrated during boom years (Choe, Masulis and Nanda, 1993). This can bias the cross sectional comparison to the extent stock market booms are not contemporaneous across countries. It also biases the time series comparisons if one of the reference years was a boom year (most notably 1929).

Capitalisation

31. A more stable measure of the importance of the equity market is the total stock market capitalisation. Theoretically, one drawback of this measure is that it 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.

32. In measuring both equity issues and stock market capitalisation we restrict ourselves, whenever possible, to domestic companies. This is not uncontroversial. 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 domestics. This is the reason why we limit ourselves to domestic companies.

Number of companies listed

33. Another indicator of the importance of equity markets is the number of publicly traded domestic companies per million population. The advantage of this indicator is that it provides a measure that is not tainted by fluctuations in stock market valuations and possible mis-measurement of the level of GDP. Thus, it is very useful as a complement to the previous ones. 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 larger companies and thus might score low according to this measure.

34. 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.

35. One indicator that is missing from our list is the volume of securities traded (see Levine and Zervos, 1998). Unfortunately, the way volume is recorded (even today) is quite controversial. The Federation Internationale Bourses Valeurs (FIBV) classifies today's trading reporting systems into two groups: trading system view (TSV) and regulated environment view (REV). The TSV system counts as turnover 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 turnover figures all the transactions subject to supervision by the market authority, with no distinction between on- and off-market. As the FIBV warns, comparisons are not valid between stock exchanges belonging to different groups, because they deliver substantially different results. For example, Paris reports the volume of trading according to both methods. Using the TSV method the volume of equity traded in 1999 was $770 076 million, while the REV method indicates it is four times as much ($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.

1.3. Data sources

Stock market capitalisation and number of companies listed

36. Our starting point was the official publication of the stock exchanges as well as those of the Federation Internationale Bourses Valeurs (FIBV). These provide extensive information only starting in 1980. Official publications of individual stock exchanges often go back 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.

37. To assess the importance of the equity market in 1913 we mainly 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 capitalisation as the sum of the product of price times the number of shares. We are able to do this for Australia, Brazil, Cuba, Denmark, Germany, Italy, Netherlands, Russia, Sweden, Switzerland, and the United Kingdom.

38. 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 every year for a conference. This association formed a special group to compute the importance of security markets in different countries. Several issues of the ISS Bulletin between 1900 and 1914 are dedicated to this. Unfortunately, many of these reports club together stocks and bonds but we do obtain some dis-aggregated information for some countries.

Data on equity issues

39. Data on equity issues are relatively easier to get for the pre WWII period than for the period immediately after the war. For example, the *League of Nations* statistics include this information, even though it is not contained in more modern publications like the United Nations Statistics, or the Financial Statistics of the International Monetary Fund. This may be a reflection of 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.

Data on deposits and national accounts data

40. Pre WWI data on deposits, national income, and gross fixed capital formation come from Mitchell (various issues). Whenever available, however, we prefer the data from the NBER web site, which combines several different sources. In a few cases we had to use specific national sources. Post WWII data come from the IMF's International Financial Statistics.

1.4. Stylised facts

41. In Table 1, we report the average value of our four indicators of financial development for the period 1913 to 1999. Because there are missing observations, for every indicator we report both the

average across all available observations and the average for the countries with continuous observations throughout the sample period. In Tables 2 to 5, we report the value of each indicator for each country. An analysis of these tables suggests the following facts:

Financial systems were highly developed in 1913

42. Regardless of the way we measure it, the average level of financial development in 1913 was quite high, comparable to that in 1990 if not that in 1999. The average level of deposits relative to GDP in 1913 is very similar to that in 1980. This is not only true on average (Table 1), but also is true for most countries (Table 2). One exception is Japan, where deposits were only 19 per cent of GDP in 1913 and are 111 per cent of GDP in 1999.

43. Equity issues were a relatively more important source of funds for corporate investments in 1913 than in 1990 for almost every country we have data for. This is particularly noteworthy when we recognise that the 1913 figures are biased downwards relative to the 1990 ones, because we normalise by GFCF and corporate investments represent a much smaller proportion of GFCF in 1913 than in 1990.

44. Most countries had more listed companies per million people in 1913 than in 1980. Again, only with the explosion of markets during the late 1990s has the 1913 level been surpassed. In few cases the difference is astonishing. In 1980 Germany had only half the publicly traded companies per million people that it had in 1913, Italy one-third, Austria one-fifth.

45. The data on the capitalisation of the stock market in Table 4 support our inferences from the data on equity issues. 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 have exceeded their 1913 level.

46. While, in general, the richest countries were highly financially developed in 1913, the degree of development does vary widely. Differences in the level of economic development are only partially responsible for that: the level of per capital income explains only 20 per cent 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 capitalisation. 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.

The pattern of financial development in 1913 was quite different from what it was until recently

47. Measures of financial development in 1913 do not strongly track measures of financial development used in recent studies. 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 US market at that time. The data on market capitalisation in Table 4 confirm this impression. While the United Kingdom has high capitalisation, Belgium, France, Germany, and Sweden come close, ahead of the United States. Once again the distinction between Continental Europe and Anglo-American countries does not seem to hold. In fact, this distinction seems to be a post-WWII phenomenon.

48. Another way of seeing this 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 capitalisation to GDP in 1913 and capitalisation to GDP in 1999. We reject the hypothesis that the two distributions across countries are independent at the 10 per cent level (19 observations). The cross-country pattern of financial development in 1999 seems similar to that in 1913! This is not true a decade

earlier. The correlation of the 1913 data with 1990 and 1980 data is lower (0.18 in 1990, -0.05 in 1980) and we cannot reject the hypothesis that the distributions are independent.

49. 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 0.63 between per capita GDP in 1913 and per capita GDP in 1999 (independence rejected at the 1 per cent level with 23 observations). The correlation of the 1913 data with 1990 and 1980 data is equally high (0.61 for 1990, 0.75 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 development.

50. Recently, La Porta *et al.* (1997, 1998) have argued that differences in the level of financial development can be explained by the type of legal system a country adopted. Common law countries -- they argue -- are more likely to protect investors, thus enabling financial development. Indeed, they find a very strong correlation between various measures of financial development in 1990 and the presence of a legal system based on common law. One of the appealing features of this interpretation is that it traces financial development back to a factor (type of legal system) that is very stable over time and, as such, immune to the risk of reverse causation. One corollary of this argument, however, is that the origin of the legal system should have some explanatory power not only in 1990, but also at any previous date. The lack of correlation between financial development in 1913 and 1990 suggests this may not be true. The more direct test of regressing measures of financial development in 1913 against an indicator if the country has common law. Common law countries are not significantly more developed on any of the four measures of financial development, even after we control for the level of per capita income. In fact, in most of the cases the coefficient of the common law indicator variable is negative, albeit not statistically significant. Thus, the pattern of financial development in 1913 cannot be easily explained by the existing theories and warrants a new explanation.

Financial development regresses between 1913 and 1980

51. The most striking fact that emerges from Table 1 is that financial development regressed between 1913 and 1980. The average level of bank deposit to GDP ratio was 41 per cent in 1913 and 40 per cent in 1980. Similarly, the stock market-to-GDP ratio was 56 per cent in 1913 and only 25 per cent in 1980. This remarkable drop is present even if we restrict attention to the countries for which we have data throughout the period. The number of domestic companies listed per million population drops from 27 in 1913 to 23 in 1980 (21 to 19 for countries for which we have all the observations). Finally, the ratio of equity issues to GFCF drops from 12 per cent in 1913 to 3 per cent in 1980 (15 per cent to 3 per cent if we restrict to countries for which we have all the observations).

52. One important explanation for why some countries fail to develop their financial systems hinges upon set-up costs (Bencivenga and Smith, 1991 and Greenwood and Jovanovic. 1990). But once these costs are paid and the financial system reaches a certain level of development, there is no reason why it should retrench. And financial infrastructure is not more reliant on bricks and mortar than the level of economic development itself, so war should not affect it disproportionately. So the most financially developed countries in 1913 should have had a head start and should have been ahead throughout the century. This roll-back in financial development cannot be explained by theories of financial development based on high initial fixed costs.

53. The second striking fact is when this reversal took place. With the usual caveat about poor data, we find that indicators of financial development were not severely affected by World War I. By 1929 most indicators were close to their pre WWI level. In fact, the relative quantities of equity issues were much larger in 1929, but this is probably a peculiarity of that year. Equity issues are highly cyclical and in most countries the stock market was booming at that time. More surprising is that the Great Depression did not have an immediate effect on the level of financial development. The level of deposits to GDP was slightly

higher in 1938 than it was in 1929 (44 per cent *vs.* 39 per cent) and so was the ratio of stock market capitalisation to GDP (48 per cent *vs.* 46 per cent). Given the above-mentioned cyclicality, equity issues were lower in 1938 than in 1929, but they were at the same level as in 1913 and the number of listed companies per million population was actually higher in 1938 than both 1929 and 1913.

54. Thus, the data suggests that indicators of financial development fell around World War II. In 1950 (five years after the end of the war) all the indicators of financial development are well below their level before the beginning of the war. Deposits are only 32 per cent of GDP, equity market capitalisation 29 per cent, and equity issues represents only 6 per cent of GFCF. The decline is not limited to the countries that lost the war, although it is obviously more pronounced there. It is not even restricted to the countries involved in the war, since we see it present also in Sweden, Argentina, and Brazil. Finally, it cannot be attributed to a decline in the standard of living, since during the same period the per capita GDP in 1990 dollars increased from $4 476 to $4 935. This post war reversal, thus, it is a fact that needs explanation.

55. After WWII, the various indicators show a different temporal dynamic. The relative level of deposits is flat during the fifties and then steadily increases during the subsequent decades. The stock market capitalisation increases steeply in the fifties and sixties, to drop back at the end of the seventies to its 1950 level. The number of companies to population, by contrast, is high in 1950 and declines steadily to 1980. This phenomenon is probably the reflection of the high number of firms started immediately after the war and of the subsequent process of consolidation. Finally, equity issues as a fraction of GFCF remain steady between 1950 and 1970, only to drop in 1980.

The degree of reversal is not homogeneous across countries

56. While, on average, indicators of financial development seems to have reversed between 1913 and 1980, the degree to which this occurred is not homogenous across countries. In the United States, for instance, the equity market capitalisation in 1980 was roughly the same proportion of GDP as in 1913, so were deposits and the level of equity raised as a fraction of GFCF. Only the number of publicly traded companies was four times as high in 1980 as in 1913. Thus, at the beginning of the 1980s the U.S. financial system did not appear to be any worse than it was in 1913. Compare this with France. While deposits to GDP and number of listed domestic companies per million population are roughly equal in the two reference years, the level of stock market capitalisation relative to GDP in France in 1980 was only one tenth what it was in 1913 and the amount of equity raised relative to GFCF only 40 per cent of its 1913 level. The same is true for Sweden, which did not participate in World War II.

Financial development explodes in the 1980s and 1990s, especially in Europe

57. Another striking fact that emerges from Table 1 is the explosion of all the indicators of financial development during the 1980s and 1990s. During this period the average ratio of deposits to GDP increased by 50 per cent, the average ratio of stock market capitalisation 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 per cent). Interestingly, for deposits, the leap forward seems to be entirely concentrated in the 1980s, while for the other three indicators the growth is fairly evenly distributed across the two decades.

58. What triggered such impressive growth? Obviously, set-up costs cannot explain these facts, neither can any time invariant factor such as the type of legal system prevailing in each country.

2. The political economy of financial development

59. We will describe a parsimonious theory that will 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.

60. The argument will be developed as follows. First, we will argue that government support is needed for financial development. Second, powerful incumbents, who have a disproportionate say in government even in well-functioning democracies, have some incentive to oppose financial development. This opposition is most muted when the economy is open to outside forces of competition, both in the product market and in the financial market, whether openness arises naturally, or endogenously. Finally, the development of markets, while in general beneficial, may destroy traditional sources of relationships and insurance, and this can be particularly onerous for the general public during downturns. If the economy is not prepared, a downturn can bring popular demands for political action to suppress markets. We will argue that the political compromises that were achieved after World War II to accommodate the popular demand for insurance led to capital controls and a suppression of financial markets the world over. It is only with the break down, and the subsequent elimination, of capital controls in recent years that we see a revival of markets. Let us now detail the argument.

2.1. The necessity for government intervention

61. To function properly a financial system requires clear laws and rapid enforcement, an accounting and disclosure system that promotes transparency, and a regulatory infrastructure that protects consumers and controls risk. While private contracting could achieve some of this, the government has the ability to co-ordinate standards and monitor, as well as enforce certain punishments, that give it some advantage. Given that government action is needed for financial development, the focus of our inquiry then shifts to when there is a political will to undertake these actions.

2.2. The political economy of financial development

62. Why would anyone oppose financial development? The answer we believe has to do with the challenges financial development poses to incumbents. Rich incumbents are likely to receive proportionately fewer benefits from financial developments. One of the benefits of being an incumbent is the ability to finance new projects out of retained cash, without accessing external capital markets. Even when their businesses do not generate sufficient cash to fund desired projects, incumbents can use their collateral and their reputation to borrow. Whatever surplus capital there is in an underdeveloped market tends to flow towards incumbents because only they have the collateral or reputations to ensure that they will repay money invested in them, and only they have the power to secure the repayment of money invested in the projects of others (see Lamoureaux (1994) for an excellent study of such lending patterns in the early New England economy of the nineteenth century). In sum, incumbents can satisfy many of their financing needs even in a very underdeveloped financial market.

63. On the other hand, incumbents are likely to suffer indirectly from financial development. The better disclosure rules and enforcement in a developed financial market reduce the relative importance of the incumbents' collateral and reputation, while permitting newcomers to enter and compete away incumbent rents. For example, before the introduction of the Neuer Markt in Germany, very few companies raised funds by listing on its Stock Exchange and the few that did were companies with a long track record (50 years) and an established reputation. The Neuer Markt, with its better disclosure standards, made it possible for young high-tech companies, with no track record and no reputation, to raise equity. In fact, the average age of a Neuer Markt IPO is only 12 years, and a majority of them are in the high tech

sector, with little or no history of profitability.[4] According to Kukies (2000), the primary difference between the Neuer Markt and the existing German exchanges was the greater disclosure requirement in the former, and its willingness to de-list firms quickly if the requirement was not met. Better disclosure standards, thus, reduced the difficulty new entrants faced in getting finance because of their lack of track record and reputation. In doing so, however, these standards reduced the value of reputation and collateral for incumbents who had it, and subjected them to competition.

64. 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, removing their ability to influence the executive and the judiciary with appropriate threats and favours. 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 cosy practices from the body economic.

65. While incumbent financiers may sometimes be at odds with incumbent industrialists over financial development, they could also join in opposing it. In the absence of good disclosure and proper enforcement, financing can only be relationship-based. Relationship-based systems ensure a return to financiers by granting them some form of power over the firm being financed. The simplest form of power is when the financier has (implicit or explicit) ownership of the firm. Alternatively, the financier can serve as the sole or main lender, supplier, or customer. In all of these forms, the financier secures her return on investment by retaining some kind of monopoly over the firm she finances. As with every monopoly, this requires some barriers to entry. These barriers may be due to regulation, or to lack of transparency -- or "opacity" -- of the system, which substantially raises the costs of entry to new intermediaries. Thus, the opacity and collusive practices that sustain a relationship-based system entrench incumbents at the expense of potential new entrants.

66. In sum, a more efficient financial system facilitates entry by newcomers with ideas but little resources. More entry will lead to more competition and thus lower profits for incumbent firms. Moreover, markets tend to be democratic, equalising access, and therefore particularly jeopardising 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 if rich incumbents control the lever of power, they might collectively have a vested interest in preventing financial development.

2.3. Why is financial repression a better way to protect incumbents' rents?

67. Rich incumbents have other ways to protect their rents. Why chose to leave financial markets underdeveloped to do so? This could end up hurting the incumbents, who might occasionally need external finance. Why not ban entry into industry or finance outright? After, all, this could be better targeted at outsiders, leaving insiders to enjoy the benefits of a more developed system. On closer scrutiny, however, we see that leaving finance underdeveloped presents several advantages over banning entry.

68. First, direct entry restrictions often require very costly enforcement. Enforcement becomes particularly costly, if not impossible, when the product whose market is restricted has many close substitutes. This is further complicated by the possibility that entrants innovate around banned items. Each new threatening innovation has to be identified, categorised and then banned. The bureaucracy that implements this "License Raj" absorbs substantial rents of its own, and may compete for power with rich incumbents. By contrast, leaving finance underdeveloped is an act of omission with few of the costs entailed by an act of commission like using the apparatus of the state to stamp out entry.

4. See Kukies (2000).

69. 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. For example, the requirements that firms that list have to be profitable for a number of years before listing can be sold to the public as a way of protecting them from charlatans, rather than as a way of preventing young unprofitable entrants from raising finance. Moreover, an underdeveloped financial market tends to be very effective in favouring precisely those who have the most power in an unequal society; the wealthy, the reputable, and the connected.

70. Finally, the problem with entry restrictions is that it does not give a clear rule about which of the incumbents will get the right to monopolise new areas of the economy that emerge as a result of innovation or expansion. The fight over the right to enter these areas, especially when outsiders join in, can be messy, costly, and very public. It also will take rents from incumbents and give it to the bureaucracy that administers the system. By contrast, when the financial market is underdeveloped, the set of potential competitors for any new business is well defined and small -- restricted to those incumbents who currently have financial slack. This leads to a "fair" allocation based on who is more profitable, and who has had time to digest the last expansion. Whatever cannot be allocated in this manner can be negotiated in smoke-filled backrooms in a more "civilised" manner by the incumbents who know each other.

71. This is not to say that direct entry restrictions are not used. Djankov *et al.* (2000) document that, across countries, to start a generic business an entrepreneur needs to follow an average of 10 bureaucratic procedures, requiring 63 days, with a cost equal to one third of the average per capita income. In some countries, however, the restrictions are more severe. In Bolivia the number of procedures is 20, with a cost equal to 2.6 times the average per capital income. These regulations -- the study finds -- do not seem to be used to screen out bad producers or protect the environment, but rather to restrict entry. If the true objective it is to limit entry, then it is efficient to use multiple instruments, including financial repression.

2.4. What determines outcomes?

72. Now that we have specified motives, what determines outcomes? The major beneficiaries of a developed financial system, new entrepreneurs in businesses with high initial investment requirements and long cash cycles, are by far the weakest group politically. In the absence of well-functioning financial markets, they may not even exist precisely because they cannot even get the finance to start up. Thus, they are unlikely to drive the political agenda in any country.

73. The other major beneficiaries of financial development, ordinary people, can only provide lukewarm support. Their benefit from financial development is too indirect, and often clouded by mis-information about risks, for them to overcome co-ordination costs and organise to demand it.

74. Thus the fate of financial development will rest on the interest of wealthy incumbents, the group with the lowest co-ordination cost and, thus, the group most likely to influence political outcomes. We already argued that, in general, incumbents do not receive big benefits from financial development. Occasionally, though, they may see benefits. Their position, then, will depend upon the relative size of the costs and benefits.

75. Industrial incumbents 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, 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, allowing them to be more amenable to financial development when the economy turns up.[5]

2.5. Financial development and openness

76. One such period when opportunities expand disproportionately compared to 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 because it increases competition.

77. Periods of increasing openness have typically been ones where countries have opened their markets on a quid-pro-quo basis. While foreign markets bring opportunity, openness also brings foreign competition in domestic markets which reduces the incumbents' rents. This reduces the incumbents' incentive to keep out domestic entrants. The presence of foreigners, who may be less amenable to entering into cosy domestic arrangements cemented through traditional and familial ties, forces domestic business practices to change. Incumbents no longer have traditional practices to protect through restrictions on domestic entry. Furthermore, foreigners may have added strength as a result of support from sophisticated financial institutions and markets in their own countries, putting pressure on domestic incumbents to match them by allowing the domestic sector to develop.

78. The salubrious effect of product market competition from foreigners on domestic financial development is especially enhanced when it is accompanied by the free flow of capital across borders. One possible channel is that foreign capital finances new domestic entrants, thus making domestic financial underdevelopment irrelevant as an entry barrier. We do not think this channel is particularly important because informational frictions, fixed costs, etc., often make access to international markets prohibitively expensive for small young firms. The firms with the best access to international markets tend to be the well-established incumbent firms. But even this promotes financial development.

79. While collectively incumbents are better off repressing financial development, individually they are better off with more access to funds. When their only alternative to the limited funds provided by their own underdeveloped domestic financial system is to lobby for the creation of the infrastructure necessary to develop a financial market that everyone has free access to, we have argued incumbents prefer to make do with the limited funds. But incumbents have access to foreign financial markets that they can tap without opening the way for new entrants, they have no incentives to restrain themselves. If all the large firms, however, raise finance outside, domestic financial institutions lose rents and feel compelled to push for financial development. As we will argue, this is what happened in Japan in the beginning of the 1980s, when the major industrial firms turned to the Euromarket to borrow and Japanese banks became big supporters of deregulation.

80. Pressure on domestic financial institutions also comes from individual investors. 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 higher returns. The loss of a captive source of funds will push domestic financial institutions to improve their returns to compete with foreign investment opportunities. The result will be a strong pressure towards deregulation and financial development by the incumbents.

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5. 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.

81. A final source of pressure for financial development comes from the foreigners themselves. 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 potential domestic entrepreneurs who are also outsiders to the domestic clubs. Thus foreigners are a force for financial development, who add a powerful established voice to the weaker voice of would-be entrepreneurs when the economy opens up.

3. A test of the political theory of financial development

82. It is hard to test directly the claim that the absence of financial development, in countries that seem to have the capability of creating the necessary institutions, is essentially caused by political opposition. Our theory, however, does lead to some indirect tests. Whatever the configuration of domestic political power -- a subject of much debate among political economists -- both the incentive of domestic incumbents, and their ability, to hold back domestic financial development is likely to be the least when the country's product and financial markets are open. This suggests a testable hypothesis: a country's financial development should be positively correlated with its degree of openness to product and capital flows.

3.1. Preliminary concerns

83. There are three immediate 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? Third, is openness not endogenous?

The relevant measure of financial development

84. 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 is reasonably developed (see La Porta *et al.*, 1998), while banks can exist even when it is primitive (see also Rajan and Zingales, 1998*b*).

85. We will use the ratio of the sum of exports and imports of goods to GDP as our measure of openness (we will shortly explain why we do not use capital flows). We will need a proxy for the demand for financing. Bairoch (1982) calculates an index of industrialisation across a group of countries for a number of years. The index number in a year reflects a country's absolute level of industrialisation 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.

Problems of reverse causality

86. We must also be cautious about the problem of reverse causality. 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 cross-border capital flows as a measure of openness because it may be directly connected with financial development. In practice, there were few impediments to cross-border capital flows before 1929, and there are few today. On the other hand, cross-border flows were heavily restricted in the Bretton Woods era, and negligible in the 1970s. Therefore, our hypothesis has the strongest likelihood of holding in both the early and late part of the 20th century.

87. Even trade in goods may generate transactions on the capital market. In the early part of this century, other countries financed their imports of goods from England by raising money in London. Therefore, there may be a mechanical link between the volume of transactions on the capital market and trade. For this reason, we only use issues or capitalisation of domestic companies as our measure of financial development. This should not be mechanically linked to the volume of trade.

88. A less compelling argument is that financial transactions generated by trade in goods could spur domestic financial development (at the very least by increasing liquidity in financial markets). While this may have been important in the past, we are sceptical that it is of immense importance in the modern industrial economy. Moreover, if trade drives financial development directly, it should also do so during the Bretton Woods era. We will check for this. However, to directly address this issue, we will use an alternative measure of openness that is not directly related to volume, the tariff levels in a country.

Problems of endogeneity

89. There is a large literature (see, for example, Gourevitch, 1986; Rogowski, 1989; O'Rourke and Williamson, 1999) suggesting 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. Our point is related in that we examine the incentives of incumbents, both in the financial sector and in the industrial sector, to press for financial development. But implicit in our argument is that there may be common factors determining both the degree of openness and the degree of financial development.

90. For example, if incumbents in the industrial sector are very efficient (perhaps because of an abundance of capital), 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 point here is that trade openness and financial sector development are both politically determined, but the former need not directly influence the latter.

91. The correlation stemming from a common causal variable is certainly consistent with our political view of financial development, but we are also interested in the direct effect of openness on financial development, because evidence of such an effect would give greater credence to the details of our theory. One way to partially correct for the omitted variable is to include it -- in this case include a measure of the efficiency of the industrial sector. Bairoch's measure of per capita industrialisation is a reasonable proxy.

92. A second method is to use a pre-determined measure of openness or to use an instrument for openness that is correlated with openness but not with financial development. We will do both in the analysis.

93. We will start by analysing the effect of openness on financial development in 1913, the earliest date for which we have data for a sizeable number of countries and also a period were international trade and capital flows were relatively free. We then repeat the exercise for the most recent data we have (1999), which are also taken from a period when international trade and capital flows are relatively free. We will finally repeat the exercise for the intermediate years, when international trade was first shut down (after the 1929 crisis) and then slowly built up again (in the post WWII period) and when international capital movements were relatively restricted.

3.2. Issues in 1912

94. We obtained data on total public issues by domestic firms in a set of countries in 1912 from the 1915 Bulletin of the International Statistical Institute (IIS) in Vienna. There are more countries in this IIS sample than we have in our 1913 sample (which we have put together from individual sources in each country), so we start with these data. 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. Our dependent variable is total issues to GDP in 1912.

95. Our explanatory variables are the index of industrialisation, and the index of industrialisation interacted with the degree of openness in the economy. Intuitively, more openness implies more of the demand should be financed through arm's length markets, hence we expect the coefficient on the interaction term to be positive.

96. We first present summary statistics and pair-wise correlations between the various variables in Table 6a and b. The ratio of issues to GDP is positively correlated with the index for industrialisation (0.43, $p = 0.07$), the per capita GDP in dollars (0.04, $p = 0.87$), and with openness (0.33, $p = 0.17$), and negatively correlated with tariffs on manufacturing (-0.28, $p = 0.28$). The correlation with the interaction between the index of industrialisation and openness is both high and very significant (0.69, $p = 0.002$).

97. In Table 6c, we present coefficient estimates of regressions in which the dependent variable is issues to GDP in 1912. When we include only the index of industrialisation as an explanatory variable [column (i)], it has a positive estimate but is significant at only the 10 per cent level. When we include both the index of industrialisation and the interaction between industrialisation and openness in column (ii), the coefficient of the interaction term is highly statistically significant ($p = 0.011$). The magnitude of the effect is also large. A 1 standard deviation increase in the interaction term increases the ratio of issues to GDP by 58 per cent of its standard deviation. Interestingly, the estimated direct effect of the index of industrialisation falls to a sixth of its value in the previous column, and now is statistically insignificant.

98. Since we have so few observations, we plot issues against the index of industrialisation in Figure 1, and against the interaction variable in Figure 2 to show that the results are not driven by outliers. In particular, the reason the index of industrialisation does not explain issues so well is because some heavily industrialised countries were relatively closed and issued little (*e.g.* the United States) at this time.

99. Recall that the endogeneity of openness may be a concern. One way to address this is to find some variable that is correlated with openness, but not with financial development. One such variable may be the size of the country. Small countries typically have to be more open since it is difficult to manufacture everything internally. So we include the interaction between the index of industrial production and the country's population in 1913 as an instrument. The resulting two-stage least squares estimate in column (iii) is about 25 per cent larger in magnitude and still statistically significant at the 5 per cent level.

100. 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 (iv), and the two-stage least squares estimate (using the same instrument as in the previous column) is negative and significant.

101. Finally, one might think that anything interacted with the index of industrialisation will produce a strong positive coefficient on the interaction term. This is not the case. For example, if we interact a dummy indicating whether a country has a common law origin with the index of industrialisation and include it in the regression we find a negative and highly significant coefficient [column (v)]. The direct pair-wise correlation between the common law indicator and issues to GDP is also negative (-0.24, $p = 0.32$) suggesting this finding is not simply an artefact of the interaction. Finally, including the Common

Law indicator as a separate variable instead of as an interaction also produces a negative coefficient. At least in our sub sample, Common Law countries use markets relatively less for financing for any given amount of industrialisation.

102. To confirm the findings from this data set, we plot graphs of three other measures of market development in 1913 vs. the interaction variable. The three measures are the market capitalisation of domestic stocks (Figure 3) and the number of listed companies per million of population (Figure 4). Both confirm the relationship we document earlier, and even though we have a embarrassingly small number of observations, the coefficient is significant at conventional levels (regressions not reported).

3.3. Equity issues in 1999

103. We repeat the same exercise with data at the end of the sample period, using the ratio of equity issues by domestic firms to gross fixed capital formation, as reported by FIBV, averaged over 1998 and 1999. Since we do not have Bairoch's measure of per capita industrialisation for any country in 1999, we use the log of 1+ 1999 per capita GDP in thousands of dollars instead, both as a stand alone explanatory variable and in the interaction with openness (as measured in 1913). As Table 7 column (i) shows, the interaction is strongly positive and significant at the 1 per cent level. Thus the effect of openness on financial development is also present at the end of the sample period.

104. To check this is nothing specific to the small sample of countries for which we could get date in 1913, we re-estimate the same regression including all the countries reported by FIBV. Since many countries today were not free or did not exist in 1913, we measure openness in 1998. Again the coefficient estimate [see Table 7, column (ii)] on the interaction variable is positive and statistically significant at the 1 per cent level. We graph in Figure 5 the relationship between equity issues and the interaction to show that the estimated relationship is representative. The interaction continues to be statistically and economically significant if we use as dependent variable the number of companies per million population, or the market capitalisation to GDP ratio in 1999.

105. Finally, when we replace the interaction variable with the Common Law indicator [see Table 7, column (iii)], or with its interaction with log per capita GDP (not reported), the coefficient estimate is positive but no longer significant when the dependent variable is equity issues or market capitalisation, and is strongly significant only for the number of listed companies.

3.3. Issues in intermediate years

106. We do not have enough data points for the years 1929-1980 to be confident of our estimates. Nevertheless, the trend we observe seem to be the following. Using the measure of openness calculated in 1913 in all subsequent years as a "natural" measure of a country's propensity to be open to trade, we re-estimate a regression similar to the one in column (ii) of Table 6c, except that the dependent variable is the ratio of equity issues to gross fixed capital formation that year, and the explanatory variables are the index of per capita industrialisation estimated by Bairoch for that year, and the interaction between the index and openness.[6] It turns out that the coefficient estimate for the interaction is positive but not significant in 1929 (its magnitude is similar to that in 1913) and the magnitude is much smaller in 1938. In the post World War II years, it turns negative but not significant in 1950, 1960 and 1970, and is negative and significant in 1980. Thus over the period that trade expanded but cross-border capital flows were still discouraged, countries that had historically been more open were not financially more developed.

6. We do not use total issues because it is very hard to obtain a consistent treatment of debt across countries.

107. In sum, our political economy explanation seems to be important in explaining the cross-country level of financial development in 1913 and in 1999, but is less successful, especially in the period after World War II until 1980. Thus, to explain the reversal of financial development in the middle of the 20th century and its resurgence in the last two decades we need to add another leg to the political economy story we have presented so far.

4. Political backlash

108. In our attempt to explain the political resistance to the development of financial markets we have focused on their role in reducing or eliminating incumbents' rents. In doing so, however, we have implicitly assumed that these rents have no positive economic role. This is indeed the correct assumption in a standard neo-classical economic model. But in the imperfect real world, where detailed long-term contracts are hard to write and even more difficult to enforce, the existence of rents can sometimes play a welfare-enhancing role. The possibility of earning a rent facilitates the formation of long-term relationships, which can provide a form of insurance against bad times that the market cannot easily provide. The rise of competitive arm's length markets destroys these relationships and thus destroys traditional social and economic sources of insurance.

109. In such a case, political authority has to step in to provide the necessary insurance, especially in bad times. But open, competitive, markets make it hard for any political authority to raise the necessary taxes and provide the demanded cross-subsidies without causing worry to investors and outsiders about its future intentions. Thus, openness, which was so good for the expansion of markets, also indirectly destroys traditional sources of insurance. Moreover, open markets limit the ability of the political authority to mitigate suffering in bad times. Of course, better markets can provide some insurance in their own right. But, empirically (see Rodrik, 1997, 1998), it appears that the effect of greater openness is to *i)* increase the risk an economy is subject to *ii)* increase the demand for government supplied insurance, and *iii)* reduce the ability of governments to supply this insurance.

110. With the government unable to provide insurance when the economy was open, despite severe, and widespread hardship caused by the beginnings of the Great Depression, there was a popular demand to restrict openness, especially to foreign trade and capital flows. Moreover, with the world sinking into depression, foreign markets were shrinking. With little outside opportunity, incumbents had little desire to maintain openness. Moreover, it was convenient for incumbents to piggy-back on the popular demand for protection to shut down not just trade and capital flows, but also reverse financial development in order to restore their protected positions in the domestic economies. We think that a political coalition between these two interest groups can account, not just for the growing financial repression before World War II, but also the Bretton Woods consensus, which emphasised trade but not financial flows.

4.1. Competitive markets and insurance

111. Let us illustrate the link between competition, long –term relationships, and insurance, with bank-firm relationships, though these could well be employer-employee relationships, or relationships between a community and its members. Within such relationships a bank provides help -- in the form of credit, advice, and guarantees to third parties -- to a borrowing firm that no one else will touch. This assistance is not committed up front in an explicit contract. Instead, the financier helps because he has confidence that the continued relationship will be beneficial. These future benefits, however, stem from the existence of an imperfectly competitive market going forward. The financier can recover the cost of the rescue by charging an above-market rate to the rescued firm after it emerges from financial distress. In a competitive system, however, after being rescued a firm would face a horde of eager bankers competing for its financial business. Since these bankers show up only when the rescue effort is successful, they cannot be forced to

pay for the cost of the rescue, which at that time is sunk. This sort of dynamic free-riding that competition brings destroys the financier's *ex-ante* incentives to rescue a distress firm.

112. The advent of competitive arm's length markets, thus, makes it harder for long term bank-firm relationships to form, and increases the risks to firms of being shut off from credit in a downturn. More generally, the increase in competition stemming from a development of financial markets puts great stress on long-term relationships because opportunities outside the relationship become more attractive. In so doing, it makes it harder for parties to form relationships within which they can provide each other mutually beneficial insurance.

113. Not only do competitive markets make it harder to give-and-take over time, they also make it harder for economic organisations like firms to cross-subsidise the inefficient (and the unskilled, or the untalented) with the produce of the efficient. While competition between economic organisations in product markets mercilessly exposes those who do not pull their weight, competition in the input market for those who are efficient pushes up their wages, leaving less surplus to subsidise the inefficient. When detailed long-term contracts are hard to write or hard to commit to, the introduction of markets can destroy old sources of social insurance without creating new ones (see Polanyi, 1944; Diamond and Dybvig, 1983).

114. This reduction in the opportunities for insurance would not be a concern if similar insurance could be obtained in the marketplace. But markets find it difficult to provide insurance to people and firms against large changes -- such as the destruction of entire industries, the disappearance of entire classes of jobs, or long term economic downturns. In sum, up to a point, the better the market works on some dimensions, the less the insurance available against calamitous downturns, since traditional sources of insurance such as bank relationships, employment relationships, relationships within the community, etc., are destroyed by the market. This is the Achilles heel of competitive markets, for the lack of insurance provides a focal point for hitherto dispersed, disaffected, parties to overcome free-rider problems and organise, and try and attack the entire market system. Let us now provide more details.

4.2. The turmoil caused by wars and depression

115. There were four reasons why before World War I the inability of the market, broadly speaking, to provide insurance did not matter much. The first is that the economic upheavals that people had to face were less important than the ones that were to come. The second reason is that the Gold Standard simply did not allow governments to dislocate their budgets by providing social security and welfare support to the needy. Third, the liberal belief in the relentless logic of the market made it unwise for governments to interfere in the Darwinian winnowing unleashed by market forces. Intervention, it was thought, would only prolong the pain. Last but not least, the poorer sections of society -- the workers, the small farmers, and the unemployed -- were not organised, and had little political voice.

116. The two World Wars and the Great Depression overturned all four reasons. Even apart from its effect on the map of Europe, the political and social effects of the First World War cannot be understated. For one, the exigencies of co-ordinated war production had created all manners of hierarchical organisations throughout the economies of Continental Europe. For example, McNeill (1982, p. 339) describes the control of the war effort in Germany after 1916 thus:

> *"…the generals in charge often became impatient with the financial claims and controversies that continually embroiled and sometimes obstructed prompt and deferential obedience to their demands. As shortages rose, one after another, the generals relied more and more on big labour and big business to remodel the economy according to military needs. Each party got more or less what it wanted: more munitions for the army, more*

profits for the industrialists, and consolidation of their authority over the work force for union officials."

117. In other words, the economy was being run like a centralised hierarchy, modelled along the lines of the army. Centralisation was aided by the cartelisation of industry, of the banking sector, and of the work force because this reduced the number of parties the central authority had to negotiate with. Moreover, the "corporatisation" of the economy seemed to work, at least in delivering the necessary munitions, even though distortions built up elsewhere. As we will argue later, many saw this as an attractive template to return to during the years of the Depression.

118. Once the war ended, significant adjustment had to be made to return to civilian production. But labour was now organised. Moreover, it was disillusioned with the status quo. The senseless carnage of a war that left all its main protagonists worse off led many to doubt the calibre and motives of their political leaders, and discredited the pre-war liberal consensus. The trenches during the war served as classrooms where the working class absorbed radical ideas. With labour's newly found ideas and organisation, it was clear that it would no longer continue unquestioningly to absorb the costs of adjustment to macro-economic imbalances. And there were significant imbalances. Prices and wages had to adjust, especially if a country were to go back to the Gold Standard, industries that had prospered during war-time autarky would have adjust to international competition, financial institutions would no longer have government guarantees, and would have to learn how to evaluate credit again. Moreover, some of the victors were saddled with enormous war debts, and the vanquished with reparations, and extraordinary surpluses had to be generated to make these payments.

119. The consequence was industrial strife in country after country. The very concept of private ownership was questioned, and for a while revolutionary change seemed a possibility. Yet for a variety of reasons that we will not enter into here, the immediate post-war radical worker movements collapsed (see Maier, 1987 for a detailed analysis). Industry and the more moderate labour organisations reached a modus vivendi (see Roe, 1999).

120. Despite the difficulties of adjustment, however, the pre-war liberal consensus was strong enough, as well as the prospects of international trade attractive enough for virtually the entire industrialised world to be on the Gold Standard again by 1927.[7] But there was no longer a group which would bear the cost of adjustment to imbalances silently. Strong interest groups ranging from labour to import-substituting industries were unwilling to bear the risks the market imposed and demanded government subsidies if not outright protection. Subsidies increased, as did deficits. These deficits could be sustained under the Gold Standard without painful domestic deflation only if some country were willing to finance them by lending. The United States performed this role only until 1928.

121. The stock market crash of 1929 in the United States and the ensuing Great Depression was the proverbial straw. With the single biggest consumer in the world contracting, exports plunged all around the world, further aggravating balance of payment problems in Europe, Japan, and Latin America. Domestic price deflation was necessary to stay on the Gold Standard, and to generate the surpluses to repay debt, but one country's deflation was simply a contraction of the export markets for another country.

122. Moreover, as prices fell, with domestic debt largely nominal, defaults increased. Losses at financial institutions increased, and the threat of a financial crisis put pressure on central banks to intervene and bail out the system. Again, under the Gold Standard, central banks could simply not lend freely to bail out the banking system without jeopardising the exchange rate.

7. Eichengreen (1996, p. 48).

123. With domestic demands for insurance against these severe economic conditions increasing, there was pressure for governments to do something, and not simply wait for the markets to return eventually to equilibrium. As Keynes famously wrote, "In the long run we are all dead". Moreover, the benefits of belonging to the Gold Standard seemed less and less clear. For example, one of its most attractive features for governments had been the ease with which they could finance their deficits by borrowing abroad. In fact, for significant periods in the decades preceding 1913, current account deficits exceeded 10 per cent of GDP in Australia, Canada, and Argentina, while in the surplus countries of Britain, France, Germany and Netherlands, net capital outflows touched 9 per cent.[8] With international lending virtually at zero, governments saw little direct reward in paying a political price to adhere to the Gold Standard.

4.3. The political response

124. Clearly, the response in each country to the common shock of the depression emerged from complex interactions between its historical experience, its political institutions, and the strength of its key players. But in general, unbridled competition in the 1920s was held to blame for what, from the vantage point of the Depression years, seemed like excessive investment by industry, excessive credit creation by banks, and excessive speculation in the stock market by all and sundry. To restore people's faith, politicians promised to curb the forces unleashed by the market.

125. These sentiments were reflected in statements made by politicians from very different persuasions. As Charles Maier argues, fascism was appealing because it promised ordinary people that they would not be powerless against a soulless and merciless market. Hitler felt that economic problems could be overcome by political will. He wrote (cited in Maier, 1987, p. 65):

> *"The Volk does not live on behalf of the economy, its economic leadership, or economic and financial theories, but rather, finance and economy, economic leadership, and even theory exist only to serve in the struggle for our people's self determination."*

Of course, finance and the economy (*i.e.* the market) would be tamed under his leadership. The tyranny of the market weighed equally on Franklin Roosevelt. In his acceptance of the Democratic Party's presidential nomination in 1936, he alleged that before the New Deal a:

> *"small group had concentrated into their own hands an almost complete control over other people's property, other people's money, other people's labour – other people's lives. For too many of us life was no longer free; liberty was no longer real; men could no longer follow the pursuit of happiness"*

Since the market seemed to be inflicting pain on the many for the profit of a few, Roosevelt concluded:

> *…Against economic tyranny such as this, the American citizen could appeal only to the organised power of Government." (Kennedy (1999, p280)*

The response of governments to the problems of the depression varied in their details but typically had three common themes. The first was to depart from the Gold Standard. As Roosevelt declared in his message to the World Economic Congress in July 1933:

> *"The sound internal economic system of a Nation is a greater factor in its well-being than the price of its currency in changing terms of the currencies of other Nations." (Kennedy, 1999, p. 157)*

8. Bordo, Eichengreen and Irwin (1999, p. 28).

126. With no external discipline on the extent to which governments could intervene, they were now free finally to remedy what they saw as obvious defects of the market. So the second theme was to curb competition, both from external sources and from internal sources. Finally, if prices were no longer set in a competitive market, something had to take the place of the market in channelling resources. Instead of using the market to channel resources, the command and control structure only recently disbanded after the war provided an attractive alternative. So the third common theme was a return to the corporatist hierarchical management of the economy, which had been "first explored during World War 1 [and] became unmistakable in many countries by the mid 1930s."[9] We now explore the second theme, that of curbing competition, in greater detail for that will lead directly to our explanation of the first great reversal in financial markets.

4.4. Autarky and its effect on the financial sector

127. Competition had to be curbed. As we argued earlier, foreigners had access in the past because domestic elites saw opportunities in trade. With export markets no longer proving attractive, there was no reason to allow foreigners into the domestic market. They were the easiest targets because they had no political voice. Imports of goods and people were curbed through prohibitive tariffs and restrictive immigration policies (see O'Rourke and Williamson, 1999 for an excellent recent survey).

128. Domestic competition was also problematic. The head of the National Recovery Administration in the United States, Hugh Johnson, argued that employers were forced into layoffs during the Depression as a result of "the murderous doctrine of savage and wolfish competition, [of] dog-eat-dog and devil take the hindmost". By contrast, "the very heart of the New Deal is the principle of concerted action in industry and agriculture under government supervision".[10] The NRA sought to set prices, control overproduction by allocating production quotas, and would thus stabilise wages. Its model was the War Industries Board of 1917-18.[11] While the NRA itself was declared unconstitutional by the United States Supreme Court in 1935, hierarchical control of industry became firmly entrenched in other countries, especially Germany, Italy, and Japan.

129. The government's desire to curb competition left no place for new entrants. This was most welcome to domestic incumbent firms, who freed from external competition were happy to reach agreements with other incumbents, and do away with new entry into domestic product markets, especially if the government was agreeable. Since control over financing was the easiest way to establish control over entry, it was natural that political attention would shift towards the financial markets and institutions. Because the financial sector was in disarray, political intervention could be effectively disguised as an attempt to introduce stability into the system.

130. Clearly, elements in the domestic financial sector would be opposed to controls that would reduce their profitability. If foreign capital had been flowing freely, the possibility of seeing business go to foreign financial institutions or foreign markets would have made the domestic financial sector extremely reluctant to accept constraints on its activities. Since cross border flows had virtually stopped, this was not a concern. Moreover, government controls brought with them the prospect of government enforced cartels, which could enhance rather than reduce profitability. With little prospect of foreign competition in the financial sector, and with financial markets moribund, domestic financial institutions were willing to accept curbs, especially on their market oriented activities, if other activities were consequently rendered more profitable.

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9. McNeill, p. 346

10. Kennedy (1999, p. 179-180)

11. Kennedy (1999, p. 177)

4.5. Intervention in the financial sector

131. The interventions in the financial sector typically took two forms. The first was, of course, a restructuring of the banking sector in a way that promoted fewer, larger banks, and limited inter-bank competition. This fed into a bank consolidation movement that had started early in the century in many countries. Since better-diversified, more profitable, banks are more stable, it is hard to argue that these moves were not motivated by concerns about stability. But it is as difficult to be a little pregnant as it is to be a little interventionist. For instance, the opening up of the public purse to rescue failed banks sends a signal to healthy banks that poor business decisions will not be severely penalised. The only way to prevent their taking advantage of these public subsidies is to regulate carefully their private activities.

132. In the absence of political checks and balances, it is all too easy for the government and the bankers to enter into a Faustian pact, with the government restricting entry and inter-bank competition, ostensibly in the interest of the stability of the system, and bankers obeying government diktats about whom to lend to in return for being allowed to be part of the privileged pack. Since incumbents in industry were likely to get the directed loans, they were willing to go along and the outcome in many countries, whether conscious or not, was a banking system that was more conservative in financing newcomers, and more accepting of government direction.

133. A co-operative, conservative, banking sector is all for naught if the arm's length stock and bond markets continue to finance entry and compete with the banking system. This is where the second form of intervention took place. In addition to being concerned about the ruinous effects of financial competition on the health of the banking system, the government also wanted private investment to flow through the banking sector because these flows could be more easily directed to preferred activities than if they went through the arm's length markets where the government had little control. In a number of countries, measures were put in place restricting the ability of corporations to issue securities in the market, and reducing the attractiveness of certain securities. These ranged from stiffer listing requirements (*e.g.* the United States) to outright prohibitions on issue (*e.g.* Japan) to prohibitions on paying high dividends (*e.g.* Germany). Even though banks often had market related activities such as underwriting, they were not averse to the restriction on arm's length financial markets for they recaptured even greater profits in the now-cartelised lending business.

134. Interestingly, the ideology under which these anti-market forces coalesced differed from country to country. But the basic outcome no: the working of financial markets was severely impaired by the intervention of the Government, which assumed a greater direct and indirect role in allocating funds to industry. To illustrate how such policies were approved and implemented we chose two examples at the opposite ends of the political spectrum: Japan and Sweden.

4.6. The demise of financial markets in Japan

135. Japan, as our data suggest, was making rapid strides to developing strong financial markets before World War I. Japan benefited during the war because it did not participate in it, and managed to export to other Asian countries that had been cut off from European producers. Japan's banking system was competitive and kept pace with the demands of industry. Until 1918, there were no restrictions on entry into banking, provided minimum capital requirements were met. While there were over one thousand banks when World War I began, by 1920 there were over two thousand banks. 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.[12]

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

136. The end of the war brought renewed competition in the markets that Japan's exporters had monopolised during the war. Compounding the pressure on profits, the Great Tokyo Earthquake in 1923 caused damage estimated at an incredible 38 per cent of GDP. Many banks had to be bailed out by the government through medium term loans. However, when the loans came due many could not pay, and the loans were extended until 1927. In the Spring of 1927, the Finance Minister, Kataoka, precipitated a further crisis by announcing in the Diet that the Tokyo Watanabe Bank had been closed that day. While in fact the bank had not been closed, and his ostensible intent was to goad the Diet in to increasing relief measures, the outcome was a run on the Tokyo Watanabe Bank and a full-fledged banking crisis. The Bank Act of 1927, enacted in response to the crisis, made clear the preferences of the authorities for a concentrated and stable banking system by requiring banks to reach a minimum capital level of 1 million yen within five years. By 1932, at the end of this five-year period, there were only 538 banks.[13] Throughout the 1930s, bank mergers were promoted by the Ministry of Finance so that by 1945, there were only 65 banks, and the share of Zaibatsu banks in total deposits had increased to 45.7 per cent.[14]

137. 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.

138. While it seems undeniable that the transformation of competitive Japanese banking into what became the post-war main bank system was orchestrated by the government, the demise of the arm's length financial markets also had the active participation of the banks. In 1929, 26 per cent of the liability side of large Japanese firm balance sheets consisted of bonds while only 17 per cent was bank debt. As bond defaults increased, 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 formalised 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 collateralised, 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.[15] The obvious outcome was that a flourishing bond market was killed off. By 1936, bonds were down to 14 per cent while bank debt was up to 24 per cent of the liability side. By 1943, 47 per cent of liabilities were bank debt while only 6 per cent were bonds.[16]

13. This paragraph is drawn from Hoshi and Kashyap (1998).

14. Aoki, Patrick and Sheard (1994).

15. 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.

16. These figures are from Teranishi (1994).

139. The equity markets were similarly choked through fiat. The attitude of the government towards shareholders is illustrated by the following statement by a bureaucrat[17]:

> *"The majority of shareholders take profits by selling appreciated stocks, sell in times when the price is expected to fall, and often seek dividend increases without doing anything to deserve them. If these shareholders control the directors of companies, influence strategies, and seize a substantial amount of profits, then the system of joint stock companies has serious flaws."*

The Temporary Funds Adjustment Law crimped equity issues in 1937 by mandating that companies seek permission before issuing. The Corporate Profits Distribution and Fund Raising Order required firms to seek government approval for increases in dividends if the level of payout was greater than 10 per cent, thus making equity unattractive. Still later, the Munitions Companies Act brought companies under the control of government bureaucrats, and they were allowed independence from the shareholders so long as they worked in the interests of the nation. Thus new stock issues, which accounted for 60-75 per cent of net industrial funding in 1935 and 1936 fell to 20 per cent of funding by 1944-45.

140. Japan illustrates yet another point. Once a country walls itself off, the outside world has to be very attractive before it opens up again. Entrenched hierarchies have the power to defend themselves. Once the banks had power, they were unlikely to give it up easily. For example, despite their best efforts to break up the bank firm combines established during the period of militarisation, the post-war American occupying forces could not prevent them re-emerging as the Keiretsu or main bank system. Hoshi and Kashyap (1998) find that the effects of the government enforced bank-firm pairing under the designated bank system towards the end of the war persisted long after World War II. Of the 112 companies in 1974 that they found had descended from wartime munitions companies, the financial institution designated by the government during the war was still the largest lender and one of the top 10 shareholders in 61 of the firms. They found that 88 of the 112 companies still had close ties to their designated institution over 30 years after the war!

141. 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 minuscule. It was only in the early 1980s, as Japanese firms decided to borrow abroad rather than depend on their antiquated financial system that Japanese banks had to loosen their stranglehold. The powers of the bond committee were curtailed. The markets had their revenge as the banks paid the price for years of being shielded from competition, made terrible credit decisions and drove Japan into an economic crisis that still persists.[18]

4.7. Sweden

142. While beset by many of the same forces as the other European countries, Sweden (and Scandinavia in general) arrived at a different solution. While autarky was a possibility for larger economies like France, Germany, and Italy, firms in Sweden had become big while servicing export markets. The Swedish market, by itself, was too small. So the Liberal coalition resisted a move to autarky and the associated intervention in the markets (see Gourevitch, 1986).

143. However, there were powerful forces against the liberals. The proverbial straw was when the Swedish Workers party (later the Social Democrats) and the Agrarian party came together in 1932 in what

17. Okazi, 1991, p. 382, cited in Hoshi and Kashyap (1998).

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

has been termed the cow trade. The Social Democrats accepted higher food prices and price supports in return for stable wages, policies for full employment, and social services. The business interests, dominated by the large internationally oriented firms first opposed this coalition, but became more accommodating when the Social Democrats became stronger in the election of 1936. In 1938, in the town of Saltsjobaden, labour, business, farming, and the government hammered out a pact by which the demands of parties to the cow trade were respected by business in return for assurances about labour peace, continued private control over property and capital markets, and external openness. A similar consensus was also reached in Norway in 1935 and Denmark in 1933 (see Gourevitch, 1986).

144. Thus Scandinavia adopted a middle path in the inter-war years, between the relatively market oriented internationalism of the United Kingdom, and the autarkic, interventionist, policies of Germany. The continued openness at least in product markets ensured that there was competition in those markets, and reduced the incentive to mute domestic competition by repressing the financial markets. Nevertheless, since the consensus was between incumbents, it inevitably translated into actions that reduced the role of the financial markets, especially because international capital flows were moribund. Interestingly, the post war consensus in much of Western Europe resembled the Scandinavian one.

4.8. Summary

145. It is useful to summarise our analysis so far. In our view, economic crisis, whatever its origin, led the retreat of financial markets and the concentration of the banking systems around the world. The channel we have argued for is the following: Crisis created a popular groundswell for insurance. The only way for governments to meet this demand was to escape from international discipline -- the fetters of gold in Eichengreen's felicitous terminology. But the barriers erected to international competition, and the dwindling of international capital flows, made it much easier, and more attractive, to erect barriers to internal competition both in the industrial and financial sectors.

146. Government were willing accomplices in this process of concentration because it made it easier to pursue their own agenda, which was now reinforced by popular legitimacy. The most destructive agendas were those of governments with grievances carried over from the last war. These chose to focus resources on rearmament. Neighbours who were not actively militaristic had to respond because they were directly threatened by those who were arming. Regardless of why governments chose to co-ordinate resource allocation, the course of action was clear; since markets dance to the tune of profits and prices, and therefore are not responsive to the dictates of government, the sphere of markets had to be narrowed in favour of the sphere of hierarchies.

5. The aftermath of World War II and the resilience of financial markets in Europe

147. Two of the stylised facts identified in Section 1 remain unexplained thus far. Why didn't financial development resume immediately after WWII and why did it resume in the last two decades of the 20th century. We will now try to address them.

5.1. Bretton Woods and restrictions on capital movements

148. The disruption to international trade caused by the two wars and the Great Depression was significant. While the average degree of openness (merchandise export as a percentage of GDP) was 8.2 in 1913, it was only 5.2 in 1950 (O'Rourke and Williamson, 1999, p. 30). It was only in the 1970s that international trade regained its pre WWI level. This delay, by itself, can explain the slow advancements of financial markets after WWII. But an even more important reason is the restrictions on free capital movements imposed by the Bretton Woods agreement.

149. The Bretton Woods agreement in 1944 advocated movement towards free trade in goods, but severely restricted international capital flows. As Keynes, its architect, said (cited in Helleiner (1994, p164):

> *"Not merely as a feature of the transition but as a permanent arrangement, the plan accords every member government the explicit right to control all capital movements. What used to be heresy is now endorsed as orthodoxy."*

The rationale was clear. Fixed exchange rates would facilitate trade in the same way as did the Gold Standard. But if capital was allowed to flow freely, it would hamper the ability of governments to provide the various sorts of insurance that was demanded of them by the new welfare states. Thus the argument for capital controls and the second class status accorded to finance in the post-war economic order.

150. What lowers the political opposition to financial development is not just openness in trade, but a combination of foreign competition in the product markets and free access to foreign financing. With free capital movements, institutions in the domestic financial sector have no way of protecting their industrial clients if foreign capital chooses to finance insurgents. At the same time, domestic financial institutions will not allow the financial sector to remain repressed if domestic firms can escape to foreign financial markets.

151. If openness to trade is, by itself, insufficient to force financial development, then the restrictions on capital movements after WWII can explain why financial development did not take off after WWII, even though trade expanded. It can also explain why the trade openness does not have power in explaining financial development in the 1950-1990 period (see Section 3.3), while it has substantial power in 1913 and in 1999, both periods when international capital flows were relatively unrestricted.

5.2. The breakdown of the Bretton Woods system

152. The story of the eventual breakdown of the Bretton Woods system has been told many times and elsewhere (see Eichengreen, 1996 for a comprehensive and accessible treatment). But the role played by concerted political action has been under-emphasised. As Helleiner (1994) argues, even though in the early 1970s Europe and Japan were interested in perpetuating the system of controls, the United States was opposed. For one, the United States with its strong domestic financial institutions eyed the profits to be made in the protected and underdeveloped foreign financial markets. Equally important, the United States hoped its well developed financial markets would attract foreign investors, an especially attractive prospect given the large US fiscal and trade deficits. Britain was also interested in doing away with capital controls because it wanted London to re-emerge as a financial centre even though the United Kingdom had long ceased to be the primary exporter of capital in the world. Therefore even in the 1960s, Britain encouraged the growth of the Eurodollar market in London.

153. The United States removed capital controls in 1974, and this was followed soon after by the deregulation of broker fees on the NYSE in 1975. The United Kingdom responded to the competitive pressure form the United States by following suit on capital controls in 1979, and subsequently deregulated its exchange with the Big Bang in 1986.

154. By the end of the 1980s, controls had effectively been removed throughout Western Europe, Scandinavia, and Japan. We believe that this has spurred the enormous amount of financial development in the 1990s. In particular, we believe the formation of the European Monetary Union has opened up domestic financial systems to immense competition and has been instrumental in the creation of new markets around Continental Europe. As Kukies (1999) points out, the main distinguishing feature of the successful new markets like the Neuer Markt or Nouveau marché is not so much that they have function under new laws, let alone new legal regimes, but that they have better disclosure requirements. What is

also interesting is that these fledglings have been typically supported by the main financial markets and institutions in the country. While we believe that mandating better disclosure is an important aspect of financial development (see La Porta *et al.*, 1998; Rajan and Zingales, 1998*a*), we have to believe that it was not the inherent difficulty of setting disclosure rules that prevented these exchanges from being born earlier. Instead, we believe it was the support of the patrons that was lacking, and it required the threat of foreign competition to make the exchanges a reality.

155. In our view, thus, the resurgence of markets in the last two decades of the 20th century is strongly associated with the expansion of international capital movements and the consequent difficulty of financial repression. That the recent resurgence of financial markets is particularly pronounced in Continental Europe (see Tables 2-5) should not come as a surprise. Thanks to European monetary integration, this is the region of the world where capital has gained the most mobility, even though it was here that the post-war consensus emphasising domestic policy autonomy at the expense of financial development was, hitherto, strongest.

156. This last example seems to suggest the virtues of supra-national organisations in reducing the role of private interests, like those of incumbents, in determining policy. But unlike Olson (1982), we are not confidant that what he calls "jurisdictional integration", the joining together of two distinct political entities into one, will reduce the power of private interests. Olson suggests that, after integration, each entity's private interests may be too small to influence policy in the merged entity. We are less optimistic. For one, before integration some private interests may be large enough to take the national interest into account in influencing policy. After integration, they may simply refocus on their private interests. Even if they are small enough to not worry about the national interest but large enough to influence policy before integration, they may seek out and merge with similar organised interests after integration and continue influencing policy in the merged entity. We therefore believe that while "jurisdictional integration" may work initially, eventually private interests will reassert themselves and capture the governance of the merged entity. Better yet to have jurisdictional separation, but free competition between the constituent entities of these jurisdictions. This will result in competition in regulation between jurisdictions, which almost invariably reduces the possibility of capture.

6. Discussion and conclusion

157. This paper started with the ambitious attempt of attempt to make some sense of the broad patterns of financial development in the most developed economies over the twentieth century. We find that, contrary to the predictions of most existing theories, indicators of financial development do not seem monotonic over time. In particular, we find that by most measures, countries were more financially developed in 1913 than in 1980 and that a major reversal took place between 1913 and 1950.

158. To explain this we outline a political economy explanation of the causes of financial development (or lack of thereof). Financial development breeds competition, which, in turn, eliminates rents. While this elimination is, in general, welfare-enhancing, it makes incumbents worse off. Hence their opposition to financial development, which is likely to be successful given incumbents' political clout. In good times, however, when trading and investment opportunities outside the economy look attractive, financial development can take place, because the incentives and abilities of domestic incumbents to oppose it is muted. But openness and the competitive markets it engenders create a new source of potential opposition. The elimination of rents make long-term relationships harder to sustain, reducing the ability of parties in the economy to insure each other. This generates another source of opposition to financial development: groups in need of insurance. A coalition between these interests in bad times can reverse the financial development that may have taken place in good times.

159. From a policy perspective, there are two important implications of our work. First, it does not seem that legal or cultural impediments to financial development are as serious as one might have concluded from the recent literature. Somewhat facetiously, one does not have to have the good fortune of being colonised by the British to be able to have vibrant financial markets.

160. However, the main impediment we identify -- the political structure within the country -- can be as difficult to overcome as more structural impediments. Nevertheless, our second main implication is that to the extent a country can be coaxed to be open, it makes it less easy for domestic incumbents to retard financial development.

161. By contrast, closing down the foreign window can be more detrimental than current analyses admit. For example, 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 favour the current political establishment.

162. The fundamental message of our work is that we should be cautious against taking for granted that financial development is unidirectional, and that the current generalised consensus in favour of markets is irreversible because of their obvious efficiency. We say this not simply because of a myopic belief that history repeats itself, but because there are sound arguments for why in time of crises a political backlash against markets may occur, which may have very long-term consequences. Thus, even in times of prosperity (in fact, precisely in those times) it is wise to generate some forms of safety net. We believe that advances in finance have given us the tools to provide such insurance, and we should focus on implementing these advances rather than attempting to expand government or attempting to shut down markets. Hopefully, the world will do better in the face of crisis than it did after 1913.

Table 1. Evolution of the different indicators of financial development

	Deposits to GDP			***Stock market to GDP***			***# companies to pop.***			***Equity issues to GFCF***		
	Whole sample	N	Constant sample N=19	Whole sample	N	Constant sample N=7	Whole sample	N	Constant sample N=9	Whole sample	N	Constant sample N=9
1913	0.41	22	0.46	0.56	20	0.34	27.10	21	20.99	0.12	12	0.15
1929	0.39	21	0.41	0.60	9	0.46	25.19	13	25.05	0.35	15	0.33
1938	0.44	21	0.47	0.65	11	0.48	28.01	13	27.44	0.13	12	0.12
1950	0.32	22	0.34	0.29	13	0.14	37.59	15	24.36	0.06	10	0.03
1960	0.30	22	0.32	0.46	17	0.31	32.56	18	22.53	0.06	17	0.05
1970	0.35	22	0.38	0.55	17	0.22	22.74	18	19.00	0.06	16	0.01
1980	0.40	22	0.43	0.25	21	0.17	23.12	22	18.90	0.03	19	0.03
1990	0.59	21	0.58	0.57	21	0.53	21.13	22	22.94	0.05	17	0.05
1999	0.58	22	0.62	0.97	23	0.96	25.31	23	27.08	0.13	21	0.19

Note: The first two columns are cross-country averages of the ratio of commercial and savings bank deposits to GDP. The first column is an average across all the observations available, the second only across the countries for which we have observations throughout. Similarly, the third and fourth columns are cross-country averages of the ratio of the amount of funds raised through public equity offerings (both initial public offerings and seasoned equity issues) by domestic companies to gross fixed capital formation. Columns five and six are cross-country averages of the ratio of the amount of funds raised to gross domestic product. Columns seven and eight are cross-country averages of the ratio of number of domestic companies whose equity is publicly traded in a domestic stock exchange to million inhabitants.

Source: See Appendix (to be provided).

Table 2. Evolution of the ratio of deposits to GDP

	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	0.29	0.36	0.36	0.30	0.23	0.19	0.28	0.07	0.24
Australia	0.52	0.59	0.61	0.53	0.29	0.34	0.37	0.54	0.63
Austria	1.16	0.37	0.33	0.19	0.28	0.44	0.62	0.84	0.81
Belgium	0.68	0.48	0.69	0.17	0.17	0.26	0.31	0.38	0.84
Brazil	0.13	0.22	0.24	0.26	0.17	0.15	0.18		0.28
Canada	0.22	0.26	0.16	0.39	0.37	0.35	0.45	0.46	0.58
Chile	0.16	0.15	0.09	0.11	0.09	0.12	0.18	0.33	0.49
Cuba									
Denmark	0.76	0.46	0.39	0.46	0.43	0.41	0.28	0.56	0.55
Egypt	0.01			0.17	0.16	0.13	0.16	0.85	0.09
France	0.42	0.44	0.36	0.15	0.18	0.30	0.40	0.61	0.69
Germany	0.53	0.27	0.25	0.20	0.31	0.46	0.49	0.55	0.60
India	0.04	0.07	0.09	0.10	0.13	0.15	0.30	0.42	0.45
Italy	0.41	0.37	0.53	0.22	0.52	0.69	0.75	0.60	0.43
Japan	0.19	0.18	0.99	0.20	0.16	0.22	0.79	1.08	1.11
Netherlands	0.22	0.32	0.52	0.17	0.11	0.47	0.52	0.79	0.75
Norway	0.65	0.89	0.56	0.52	0.43	0.49	0.30	0.54	0.53
Russia	0.21								
South Africa		0.09	0.16	0.16	0.17	0.15	0.31	0.42	0.54
Spain	0.07	0.24	0.24	0.33	0.37	0.53	0.44	0.60	0.64
Sweden	0.69	0.69	0.73	0.59	0.54	0.50	0.48	0.35	0.33
Switzerland	0.93	1.08	1.13	0.79	0.78	0.69	0.69	1.03	0.66
United Kingdom	0.50	0.33	0.45	0.53	0.25	0.20	0.29	0.94	1.11
United States	0.33	0.33	0.44	0.46	0.38	0.42	0.30	0.33	0.30

Note: Commercial and savings deposits divided by GDP.

Source: Mitchell (1995) and various issues of Financial Statistics by the International Monetary Fund.

Table 3. Evolution of Fraction of Gross Fixed Capital Formation Raised via Equity

	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina					0.01		0.01	100.39	0.02
Australia		0.13		0.09	0.04	0.05	0.05	0.08	0.15
Austria		0.07			0.03	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	0.27
Canada		1.34	0.02	0.03	0.03	0.01	0.04	0.01	0.07
Chile							0.00		0.01
Cuba									
Denmark		0.03	0.01				0.01	0.07	0.09
Egypt									0.31
France	0.14	0.26	0.03	0.05	0.05	0.04	0.06	0.02	0.12
Germany	0.07	0.17	0.06	0.00	0.04	0.02	0.01	0.04	0.06
India						0.00	0.00		0.08
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	24.78	0.08
Netherlands	0.38	0.61	0.45	0.02	0.02	0.00	0.01	0.10	0.67
Norway	0.00	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	
United Kingdom	0.14	0.35	0.09	0.08	0.09	0.01	0.04	0.06	0.09
United States	0.04	0.38	0.01		0.02	0.07	0.04	0.04	0.12

Note: 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.

Source: See Appendix (to be provided).

Table 4. Evolution of stock market capitalisation over GDP

	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	0.17				0.05	0.03	0.11	0.27	0.15
Australia	0.13	0.43		0.38	0.45	0.68	0.34	0.36	0.93
Austria	0.76						0.03	0.17	0.17
Belgium	0.99	1.78			0.32	0.23	0.09	0.33	0.82
Brazil	0.16						0.19	0.17	0.22
Canada			1.00	0.57	1.59	1.75	0.46	1.22	1.22
Chile	0.17				0.12	0.00	0.22	0.54	0.73
Cuba	2.19								
Denmark	0.37	0.19	0.17	0.10	0.14	0.17	0.09	0.67	0.67
Egypt	1.09				0.15		0.01	0.04	0.29
France	0.78		0.19	0.08	0.28	0.16	0.09	0.24	1.17
Germany	0.45	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								0.23	0.48
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
United Kingdom	1.09		1.92	0.86	1.15	1.99	0.38	0.81	2.25
United States	0.41	0.75	0.56	0.33	0.61	0.66	0.46	0.54	1.52

Note: Market value of equity of domestic companies divided by gross domestic product.

Source: See Appendix (to be provided).

Table 5. Evolution of number of listed companies per million people

	1913	1929	1938	1950	1960	1970	1980	1990	1999
Argentina	15.29				26.78	15.58	9.85	5.54	3.63
Australia	67.62	76.92	84.88	122.15	93.68		68.50	63.72	65.17
Austria	39.10	42.64	30.30	16.38	13.43	12.16	8.80	12.58	12.13
Belgium	108.66			55.09	42.60	38.39	22.85	18.50	14.33
Brazil	12.43	9.85	5.17			4.32	4.06	3.86	3.60
Canada				66.61	62.43	55.20	50.51	43.14	111.32
Chile	20.78				44.52	38.72	20.82	16.32	19.37
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	14.02	11.01	13.71
France	13.22	0.00	24.57	28.61	20.36	16.98	14.74	10.19	15.75
Germany	15.80	12.52	10.91	13.22	11.33	9.07	7.46	6.53	11.09
India	0.82	1.81	2.59	3.13			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	63.11				21.42	15.95	15.12	17.39	15.14
Norway	33.10	49.02	54.50	58.19	52.44	39.44	31.07	26.41	56.77
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	24.35	20.06	21.95	18.53	18.28	20.74	27.56	49.61	34.01
United Kingdom	47.06						47.22	29.63	31.11
United States	3.84	6.92	6.52	6.94	6.33	6.59	23.11	26.41	28.88

Note: Number of domestic companies whose equity is publicly traded in a domestic stock exchange divided by million inhabitants.

Source: See Appendix (to be provided).

Table 6. Issues to GDP in 1912

a. Summary statistics

	Mean	Standard Deviation	Minimum	Maximum	Observations
Issues to GDP in 1912	0.022	0.017	0.002	0.055	19
Per capita Industrialisation	50	36.44	6	126	18
Openness (Trade volume/GDP)	0.60	0.58	0.006	2.6	19
Tariffs	11.48	7.07	0.4	29.5	17
Interaction of per capita industrialisation and openness	30.5	32.5	0.06	118.67	18

b. Pair-wise correlations between variables (significance in parentheses)

	Issues to GDP in 1912	Per capita industrialisation	Openness (Trade volume/GDP)	Tariffs
Per capita industrialisation	0.43			
	(0.07)			
Openness (Trade volume/GDP)	0.33	0.04		
	(0.17)	(0.87)		
Tariffs	-0.28	-0.05	-0.52	
	(0.28)	(0.85)	(0.03)	
Interaction of per capita industrialisation and openness	0.69	0.55	0.71	-0.37
	(0.00)	(0.02)	(0.001)	(0.15)

c. OLS regression for cross-section of 18 countries in 1912-13:
dependent variable issues to GDP

	(i)	(ii)	(iii)	(iv)	(v)
Per capita industrialisation	0.184*	0.03	-0.006	0.51**	0.41***
	(0.096)	(0.09)	(0.11)	(0.22)	(0.1)
Interaction of per capita industrialisation and openness		0.3***	0.39**		
		(0.1)	(0.15)		
Interaction of per capita industrialisation and tariffs				-0.026*	
				(0.014)	
Interaction of per capita industrialisation and common law indicator					-0.3***
					(0.09)
Adjusted R^2	0.14	0.41	0.39	-0.07	0.46
Observations	18	18	18	17	18

Note: Issues to GDP is the sum of equity and bond issues by domestic firms in 1912. Per capita industrialisation is the index of industrialisation 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). Common Law indicator is 1 if the country is classified as having a Common Law system. All coefficient estimates and standard errors are multiplied by 1000. Standard errors are in parentheses. Columns (iii) and (iv) contain two-stage least squares estimates. (*) indicates significance at the 10 per cent level, (**) at the 5 per cent level and (***) at the 1 per cent level.

Table 7. OLS regression for cross-section of countries in 1998-99

	(i)	(ii)	(iii)
Log per capita GDP	-0.067*	-0.04	0.011
	(0.037)	(0.030)	(0.030)
Interaction of log per capita GDP and openness in 1913	0.019***		
	(0.04)		
Interaction of log per capita GDP and openness in 1998		0.100***	
		(0.029)	
Common law indicator			0.01
			(0.07)
Adjusted R^2	0.58	0.21	-0.05
Observations	16	39	38

Note: The dependent variable is the ratio of equity issues to gross fixed capital formation averaged over 1997-99. Log per capita gross domestic product is in dollars. Openness in 1913 is the sum of exports and imports of goods in 1913 obtained from the League of Nations Yearbook divided by GDP in 1913. Openness in 1998 is the sum of exports and imports of goods in 1998 divided by GDP in 1998. Common Law indicator is 1 if the country is classified as having a Common Law system. Standard errors are in parentheses. (*) indicates significance at the 10 per cent level, (**) at the 5 per cent level and (***) at the 1 per cent level.

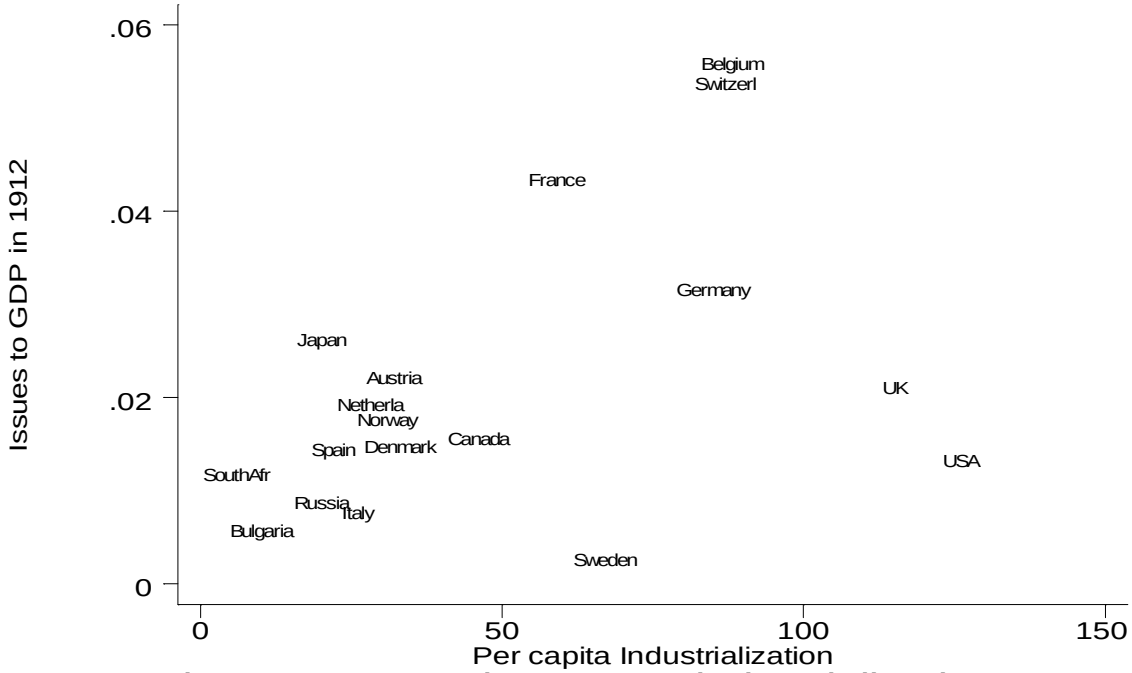

Figure 1: Issues in 1913 vs industrialization

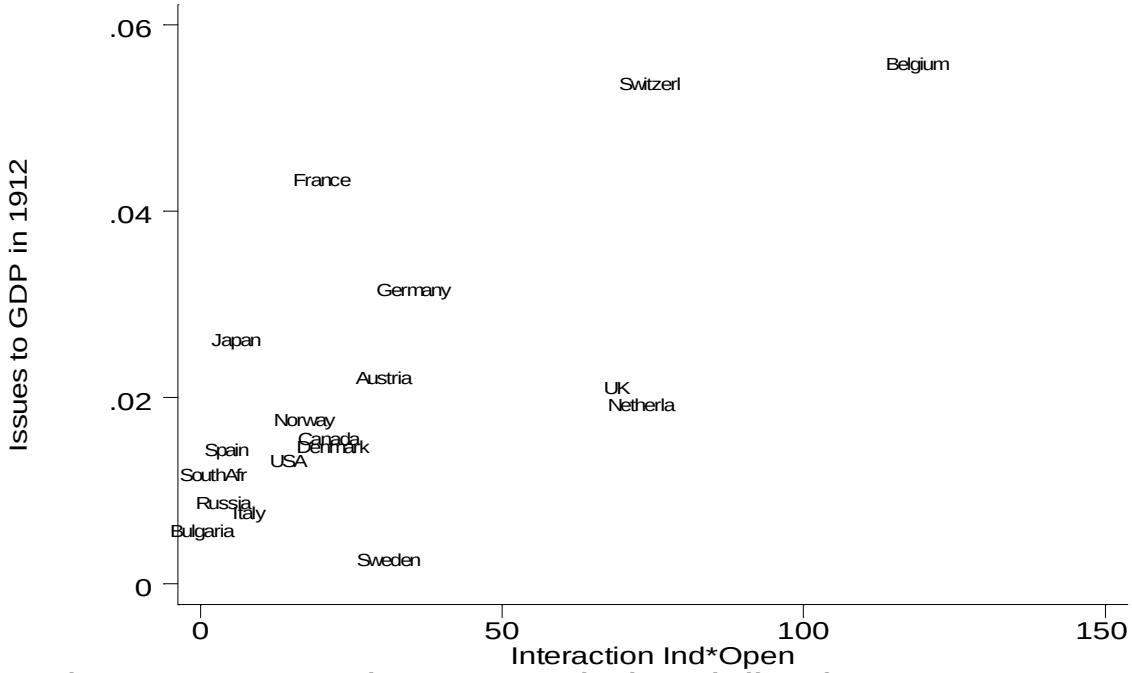

Figure 2: Issues in 1913 vs industrialization * openness

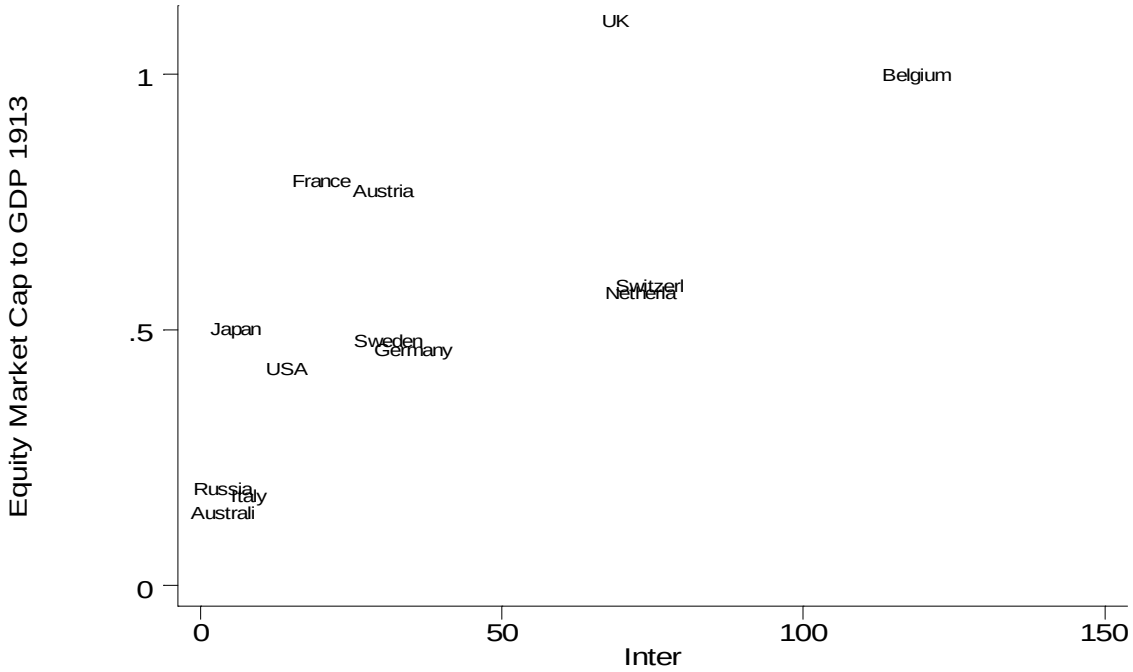

Figure 3:Capitalization in 1913 versus interaction

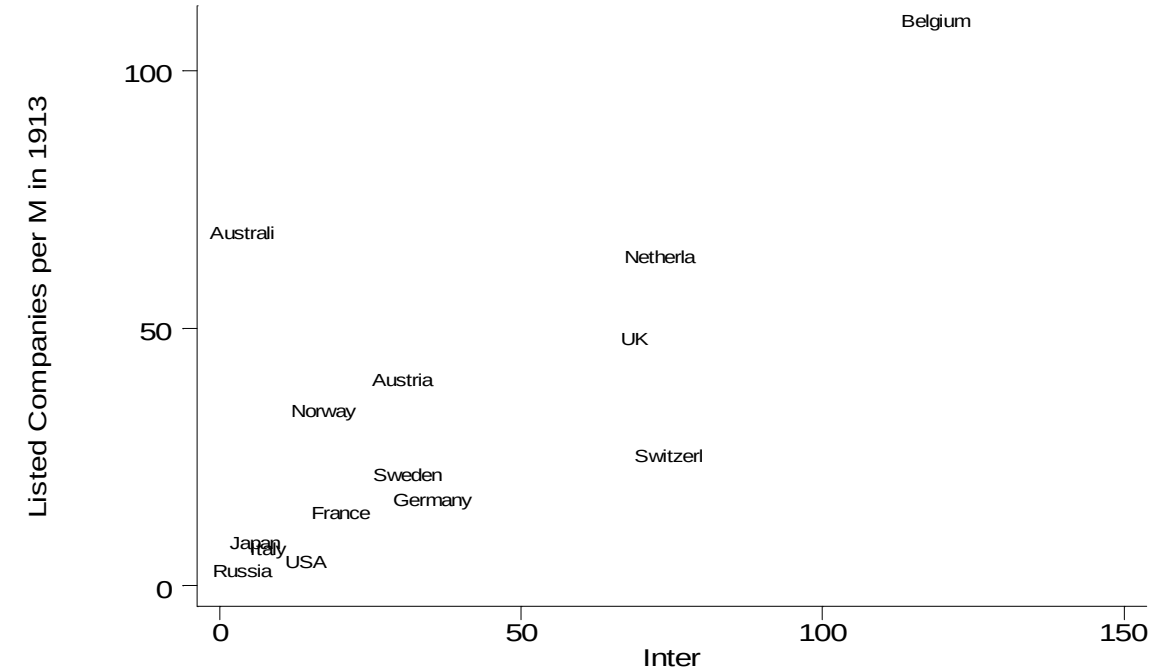

Figure 4: Listed cos per M in 1913 versus interaction

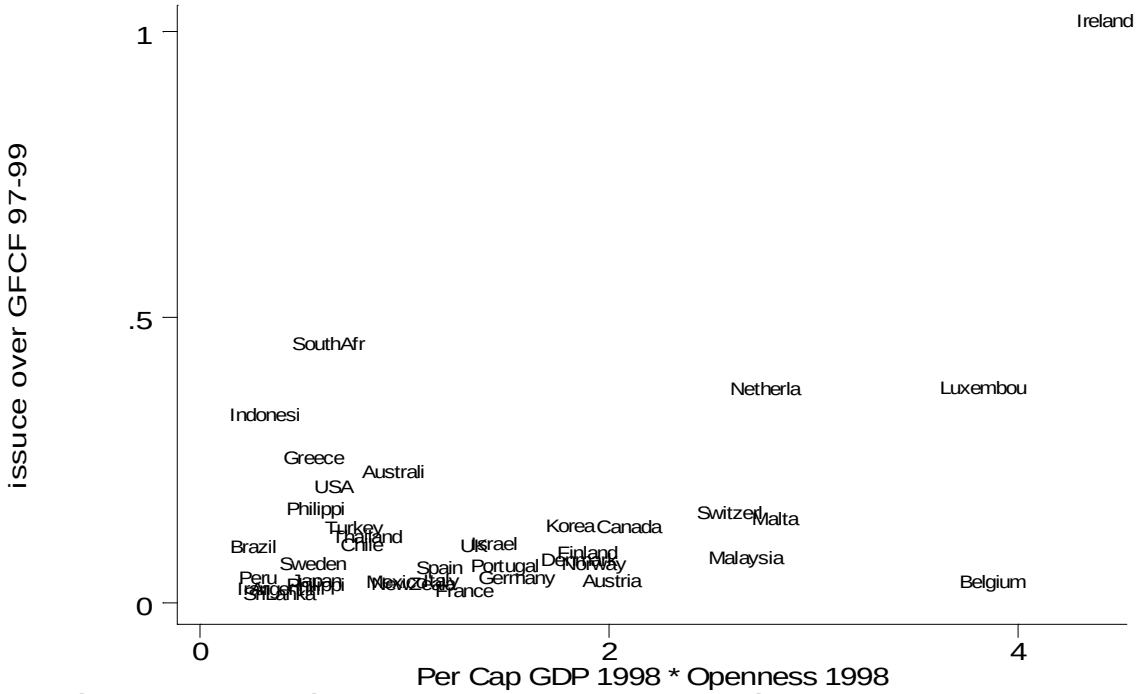

Figure 5: Equity Issues vs. percap gdp*openness 1913

BIBLIOGRAPHY

ALLEN, F. and D. GALE (2000), *Comparing Financial Systems*, M.I.T. Press, Cambridge MA.

ANG, James S. and Terry RICHARDSON, "The underwriting experience of commercial banks affiliates prior to the Glass Steagall Act: A re-examination of evidence for passage of the Act", *Journal of Banking and Finance*, 1994, 18(2), pp. 351-395.

AOKI, M. H. PATRICK and P. SHEARD, "Introductory overview", in *The Japanese Main Bank System*, M. Aoki and H. Patrick, (ed.) Clarendon Press, Oxford.

BAIROCH (1982), "International industrialisation levels from 1750 to 1980", *Journal of European Economic History*, Vol. 11, 2, pp. 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.

BENSTON, George J. (1990), *The Separation of Commercial and Investment Banking*, Oxford University Press, Bordo, Eichengreen and Irwin.

CHANDLER (1990), *Scale and Scope*, Bellknap Press, Cambridge, MA.

DIAMOND, D. and P. DYBVIG (1983), "Bank runs, deposit insurance, and liquidity", *Journal of Political Economy*, 91, pp. 401-419.

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".

DEMIRGUC-KUNT, A. and V. MAKSIMOVIC (1998), "Law, finance, and firm growth", *Journal of Finance*, 53, pp. 2107-2138.

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.

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.

HOSHI, T. and A. KASHYAP (1998), "The genesis of the Japanese financial system", Chapter 2 in forthcoming book.

JAYARATNE, Jith and Philip E. STRAHAN (1996), "The finance-growth nexus: Evidence from bank branch deregulation", *Quarterly Journal of Economics*, CXI, pp. 639-671.

JENSEN, M. (1991), "Corporate control and the politics of finance", *Continental Bank Journal of Applied Corporate Finance*.

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.

KING, R. and R. LEVINE (1993), "Finance and growth: Schumpeter might be right", *The Quarterly Journal of Economics*, Vol. CVIII, No. 3, pp. 681-737.

KROSZNER, R. and R. RAJAN (19..), "Is the Glass Steagall Act justified? A study of the US experience with universal banking before 1933", *American Economic Review* 84, pp. 810-832.

KUKIES, Jorg (2000), "The effect of introducing a new stock exchange on the IPO process", mimeo, University of Chicago.

LA PORTA, R, Florencio LOPEZ-DE-SILANES, Andrei SHLEIFER, and Robert VISHNY (1997), "The legal determinants of external finance", *Journal of Finance*, 52.

LA PORTA, R., F. LOPEZ-DE-SILANES, A. SHLEIFER and R. VISHNY (1998), "Law and finance", *Journal of Political Economy*, 106, pp. 1113-1155.

LAMOUREAUX, 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, pp. 537-558.

MAIER, Charles (1987), *In Search of Stability*, Cambridge University Press, Cambridge, England.

MAYER, Colin (1988), "New issues in corporate finance", *European Economic Review* 32, pp. 1167-1189.

McNEILL, William (1982), *The Pursuit of Power: Technology, Armed Force and Society since AD 1000*, University of Chicago Press, Chicago.

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, pp. 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.

PETERSEN, M. and R. RAJAN (1995), "The effect of credit market competition on lending relationships", *Quarterly Journal of Economics*, Vol. 110, pp. 407-443.

POLANYI, K. (1944), *The Great Transformation*: *The Political and Economic Origins of Our Time*, Beacon Press, Boston.

PURI, M. (1993), "The long-term performance of bank underwritten security issues", *Journal of Banking and Finance*, 18, pp. 397-418.

RAJAN, R. and L. ZINGALES (1998*a*), "Financial dependence and growth", *The American Economic Review*, 88: pp. 559-586.

RAJAN, R. and L. ZINGALES (1998*b*), "Which capitalism? Lessons from the East Asia crisis", *Journal of Applied Corporate Finance*.

RAJAN, R. and L. ZINGALES (1999), "The politics of financial fevelopment", mimeo, University of Chicago.

ROBINSON, Joan (1952), "The generalization of the general theory", in *The Rate of Interest and Other Essays*, London, Macmillan, pp. 67-142.

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. (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.

STIGLER, G. (1971), "The theory of economic regulation", *Bell Journal of Economics and Management Science*, 2: pp. 3-21.

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 (eds.), Irwin Publishers, New York.

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, (eds.) Clarendon Press, Oxford.

TILLY, R. (1992), "An overview on the role of the large German banks up to 1914", in *Finance and Financiers in European History, 1880-1960*, Youssef Cassis (ed.), Cambridge University Press, New York.

VERDIER, Daniel (1999), "The origins of universal banking in the 19th century", mimeo, European University Institute.

WHITE, E. (1986), "Before the Glass-Steagall Act: An analysis of the investment banking activities of national banks", *Explorations in Economic History*, 23, pp. 33-55.

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