The Globalization of Capital Markets, Financial Crises, and Capital Controls: A Historical Perspective

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Abstract

This paper reviews globalization and financial crisis over the past 120 years. By examining the evidence on the incidence and depth of financial crises (currency crises, banking crises and twin crises) across four regimes from 1880 to the present, the study demonstrates that crises in emerging markets are more frequent today than during the golden age of financial liberalization before 1914. The higher frequency, however, is counterbalanced by a significant decrease in recovery time and output losses due to institutional innovations in information technology, increased direct foreign investment, greater numbers of lenders and borrowers, and a wider range of securities traded and sectors financed. Moreover, the study shows that access to international capital was crucial to the successful development of countries, while crises were rarely a serious detriment to development.

The paper concludes that the benefits of financial market integration are long run in nature while the costs of financial crises are short-run phenomena. The role for policy is to provide an environment for markets to work efficiently and to allow private capital flows to seek their best use in an unfettered manner.

ملخص

تستعرض الورقة التوجه نحو العولمة وعلاقتها بالأزمات المالية خلال المائة وعشرون سنة الماضية. وبفحص الوقائع الخاصة بحدوث الأزمات المالية وعمقها (أزمات النقد، والأزمات المصرفية وكلاهما معاً) عبر أربعة أنظمة مختلفة منذ عام ١٨٨٠ وحتى الآن، أوضحت الدراسة أن الأزمات فى الأسواق الناشئة تتكرر فى الوقت الراهن بشكل أكبر مما كان عليه الحال إبان العصر الذهبى للتحرر المالى قبل عام ١٩١٤. ويقابل الزيادة فى تكرار الأزمات إنخفاض ملحوظ فى زمن تخطى الأزمات وكذلك إنخفاض فقدان الناتج وهو ما يعكس التقدم المؤسسى الذى طرأ على تكنولوجيا المعلومات وكبر حجم الاستثمار الأجنبى المباشر، وزيادة عدد المقرضين والمقترضين، وزيادة حجم وتنوع الأوراق المالية المتبادلة فى الأسواق المالية وكذا زيادة عدد القطاعات التى يتم تمويلها. وفضلاً عن هذا، أوضحت الدراسة أن الحصول على روؤس أموال أجنبية لعب دوراً حيوياً فى نجاح التنمية فى هذه الدول، بينما لم تكن الأزمات معوقاً للتنمية الا نادراً.

وقد خلصت الورقة الى أن المكاسب التى يمكن أن تتحقق من تكامل أو إندماج الأسواق المالية هى ذات طبيعة طويلة الأجل بينما تعد تكلفة الأزمات المالية ظاهرة قصيرة الأجل. وهنا تلعب السياسات دوراً فى تهيئة المناخ المناسب لعمل الأسواق بكفاءة وبما يسمح لتدفقات روؤس الأموال الخاصة من أن تنشد أفضل إستخدام ممكن بطريقة غير مقيدة.

I. Introduction

The past three decades have witnessed a global resurgence of private capital flows following four decades of suppression. The dimensions of international financial market integration exceeded those of an earlier golden age of open capital markets from 1880 – 1914. However, free capital mobility in both eras has been associated with financial crises in emerging markets as foreign capital was on occasion quickly repatriated.

Until very recently, the consensus view among economists on the international integration of financial markets was very positive. The benefits of open capital markets that have been stressed include: optimal international resource allocation; intertemporal optimization; international portfolio diversification and discipline on policy makers.[1] However, the recent spate of crises in Latin America and Asia has led some to argue that the costs of complete liberalization of financial markets for emerging countries may outweigh the benefits.[2]

Taking a historical perspective of the past 120 years, this paper focuses on the globalization of financial markets and on the financial crises that have been part of the process. We also consider the case for and against restricting the opening up of international capital markets for emerging markets. A key lesson that emerges from the historical record is that the opening up to foreign capital has given emerging countries the opportunity to develop but has also exposed their institutions and policies to international scrutiny. This exposure to foreign finance promotes a strong fillip to the development of sound institutions and policies, but parts of the learning process are financial crises.

In Section 2, I summarize the empirical evidence on the international integration of financial markets from 1880 to the present primarily based on my research with Barry Eichengreen and that of Maurice Obstfeld and Alan Taylor. This research shows that globalization has followed a U-shaped pattern for both stocks and net flows of foreign investment relative to GDP over the period 1880 to 1998. The ratios of both the stocks and net flows of foreign investment relative to GDP in the period before World War I was comparable to or even higher than today, collapsing to almost negligible magnitudes in the inter-war and post World War II periods, until a recovery from the early 1970s to the high levels observed today.

[1] See Obstfeld (1999).
[2] Rodrik (1998), Cooper (1998, 1999).

In Section 3, I consider the issue whether indeed the globalization of financial markets is much more pervasive today than pre-1914 – that although net flows relative to GDP may be less today than pre-1914, the markets are broader and deeper. The greater extent of globalized capital markets today largely reflects institutional innovations overcoming the barriers of asymmetric information.

The flip side of open capital markets for emerging economies is the problem of financial crises – the pattern of lending booms and busts, massive capital inflows and equally massive reversals. This was a problem in the earlier golden age of liberal capital markets and is once again today. In Section 4, I examine the evidence on the incidence and depth of financial crises (currency crises, banking crises and twin crises) across four regimes from 1880 to the present. Although the incidence of crises in emerging markets is higher today than in the previous golden age of financial liberalization before 1914, recovery time is shorter and output losses are less. In the case of twin crises, however, today's emerging market experience rivals that of the pre-1914 earlier age of globalization. Comparable evidence for the intervening regimes reminds us that the Great Depression era was *sui generis* on all counts, whereas Bretton Woods was an oasis of tranquility.

An offshoot of the recent crisis problem is a backlash in favor of shutting off or slowing down the process of capital market liberalization. This is discussed in Section 5. Many have argued for the re-imposition of capital controls (some on inflows, others on outflows) while others favor the sequencing of liberalization for those countries, which are still not completely open. The evidence, both contemporary and historical on the effects of capital market liberalization/controls on growth and welfare is mixed. However, the experience of the U.S. and the emerging market countries of the past suggests that access to international capital was crucial to their long-term success and that the crisis problem was rarely a serious detriment to development.

The paper concludes with some policy lessons from the historical record. The benefits of financial market integration are long run while the costs of financial crises are short-run phenomena. The role for policy is to provide an environment for markets to work efficiently and to allow private capital flows to seek their best use in an unfettered manner. Such an environment can mitigate the incidence of crises but not prevent them entirely. In that eventuality there is a role for the emergency provision of liquidity.

II. The Dimensions of Capital Market Integration

Considerable research in recent years has expanded our understanding of the financial market integration that has occurred from the nineteenth century to the present. In the following, I briefly review some of the findings.

Stocks

Obstfeld and Taylor (1998) have recently compiled the existing data on the stocks of foreign assets relative to world GDP as well as foreign liabilities relative to GDP at benchmark years over the period 1825 to the present. The sample of countries covered before 1914 are many of today's advanced countries and a number of other countries. The picture portrayed by this data, although it is fragmentary for the early years, is of a U-shaped pattern. At its pre-1914 peak, the share of foreign assets to world GDP was approximately 20 percent. It declined from that level to a low point of 5 percent in 1945 and did not resume the pre-1914 level until 1985. Since then it has risen to 57 percent. A similar picture emerges from the ratio of liabilities to world GDP.[3]

The British held the lion's share of overseas investments in 1914, 50 percent, followed by France at 22 percent, Germany at 17 percent, the Netherlands at 3 percent and the U.S. at 6.5 percent. This compares with the U.S. holding of global foreign assets in 1995 at 24 percent. These funds in turn represented up to one half of the capital stock of one of the major debtors (Argentina) and close to one fifth for Australia and Canada.

Finally, the gross asset and liability positions were very close to net positions before 1914, in contrast to today where, for example, the U.S. is both a major creditor and debtor. This reflects the prevalence of uni-directional long-term investment from the core countries of Europe to the countries of new settlement.

Net Capital Flows

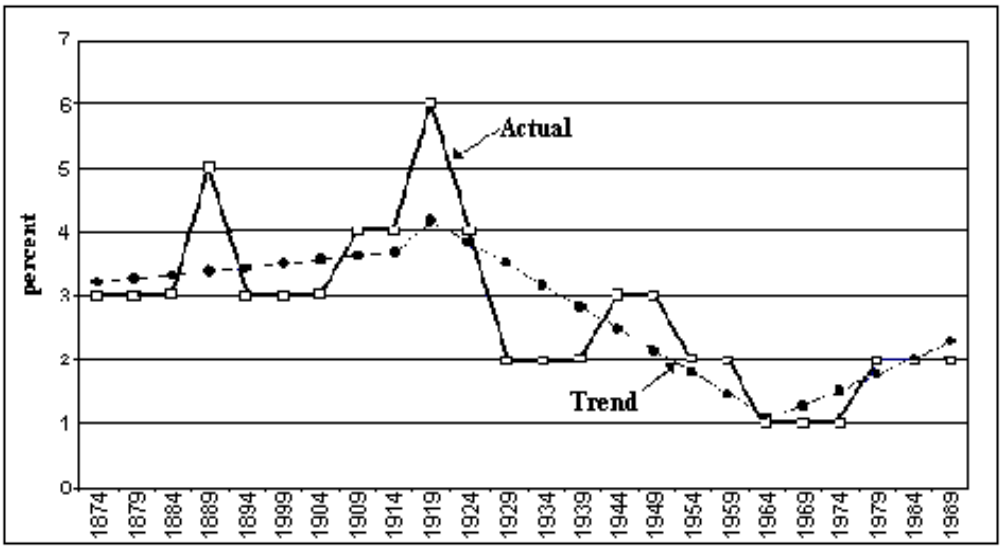
The 50 years before World War I saw massive flows of capital from the core countries of western Europe to the overseas regions of recent settlement (mainly the rapidly-developing Americas and Australasia).[4] At its peak, the outflow from Britain reached 9

[3] Obstfeld and Taylor present two versions; the ratio of assets (liabilities) to world GDP and the ratios to single GDP. The latter reflects an adjustment for the smaller sample of countries (7) with foreign investment data rather than GDP data. The adjusted ratio, which is an upper bound estimate, is greater than 50 percent in the years just before 1914; falls to a low of 12 percent in 1945 and then rises to 54 percent in 1995.

[4] Extensive international financial market integration began well before 1880. Neal (1990) documents the integration that occurred in northwest Europe after 1700. Capital flows from Britain to the United States, Latin America and the British colonies accelerated in the years after the Napoleonic wars (Zevin 1992).

percent of GNP and was almost as high in France, Germany, and the Netherlands (Bairoch and Kozul-Wright 1996).[5] Private capital moved essentially without restriction. Much of it flowed into bonds financing railroads and other infrastructure investments and into long-term government debt.[6] Figure 1 shows five-year moving averages of the mean absolute value of the ratio of the current account balance to GDP for 12 countries.[7] Figure 2 shows current account balances for one large capital exporter, the United Kingdom, one large capital importer, Canada, and the largest emerging market, the United States.[8] A striking feature of this data is the size and persistence of current account deficits in the pre-1914 period, especially in Australia, Canada, Argentina, and the Nordic countries and of the current account surpluses of the UK and France.[9]

Figure 1. External Capital Flows, Selected Countries (In % of GDP, 5 year moving averages)



Source: See Data Appendix in Bordo, Eichengreen and Kim (1998)

[5] This compares with the peaks in Japan and Germany's current account surpluses in the mid- and late 1980s of 4-5 percent of GDP.

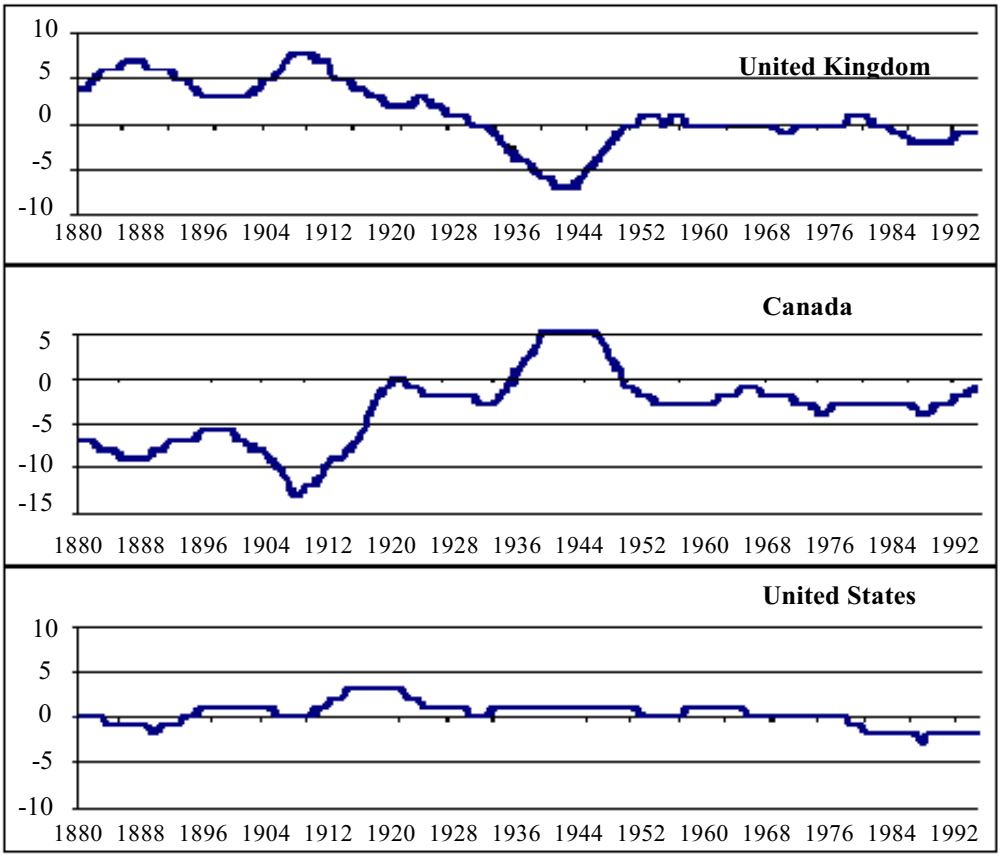
[6] Although there was also significant direct foreign investment.

[7] The countries in this sample that are labeled Group 1 are Argentina, Australia, Canada, Denmark, Finland, France, Germany, Italy, Japan, Norway, Sweden, United Kingdom, United States. However, Finland was not included in Figure 1. All of these countries except Argentina graduated from emerging country status to advanced country status. For explanations for Argentina's retardance see e.g. Taylor (1997). Argentina was kept in the sample past World War II even though it clearly belongs with the Group 2 countries discussed below because of its major importance as a capital recipient before 1914.

[8] Recently the standard series on current account balances have been revised by Jones and Obstfeld (1998) to account for nonmonetary gold flows under the pre-1914 and the inter-war gold standards. The problem with the standard sources, as Jones and Obstfeld explain, is that their designers did not distinguish monetary gold exports, which are capital account credits, from non-monetary gold exports, which are properly included in the current account. Jones and Obstfeld adjust for these discrepancies, and this is the data we present in Figures 1 and 2. See Bordo, Eichengreen and Kim (1998) Appendix Figure 1 for the individual country data.

[9] The United States exhibited current account deficits comparable to these countries earlier in the nineteenth century. Evidence for persistence is based on the Phillips-Perron Z Statistic. See Bordo, Eichengreen and Kim (1998).

Figure 2. Ratio of the Current Accounts to GDP, Selectd Major Countries



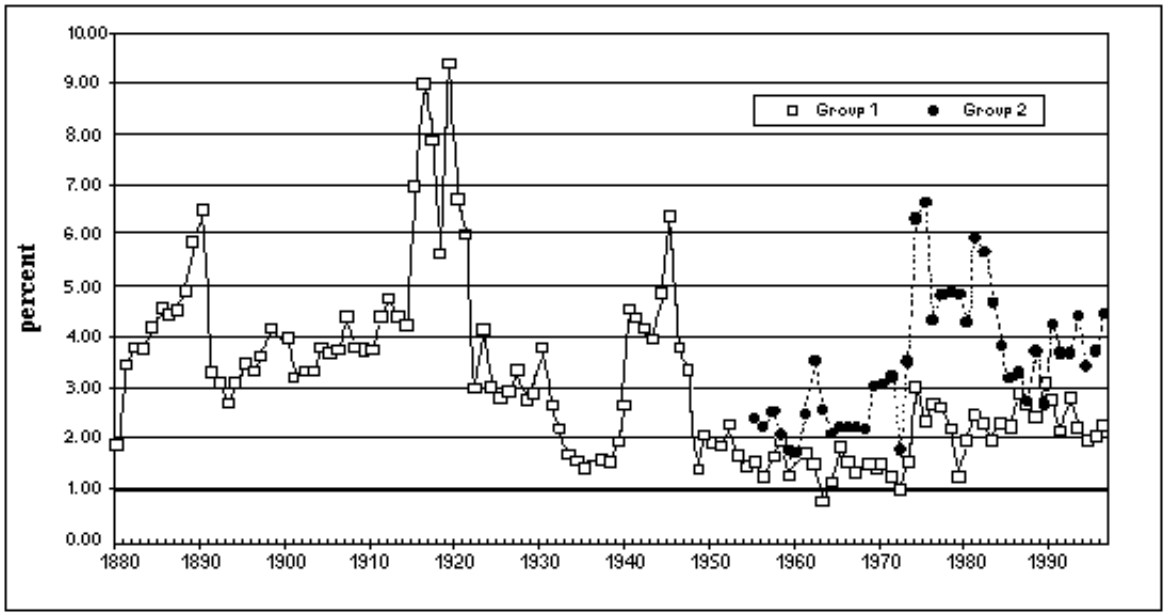
Source: Se Data Appendix in Bordo, Eichengreen and Kim (1998).

For comparison, Figure 3 shows the mean absolute value of the ratio of current account to GDP for 23 of today's emerging markets (countries whose GDP exceeded 30 billion dollars and were classified as indebted countries by the World Bank) using data from the International Monetary Fund's *International Financial Statistics* for the period 1949 to 1996.[10] These countries have been running current account imbalances under the recent managed float averaging 4.1 percent of their GDPs, which is similar to the average for the prewar sample of 3.9 percent which includes both capital importers and exporters.[11]

[10] The individual country data for this sample labeled Group 2 are in Bordo, Eichengreen and Kim (1998) Appendix Figure 1. The countries are: Algeria, Brazil, Chile, China, Colombia, Egypt, Hungary, India, Israel, Korea, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Romania, South Africa, Thailand, Turkey, and Venezuela.

[11] For a sample of just capital importers, the ratio was 4.4 percent. (See Tables 1 and 2 in Bordo, Eichengreen and Kim (1998) which show the mean and the standard deviation of the data for each country across 4 exchange rate regimes from 1880 to the present.)

Figure 3. Ratio of Current Accounts to GDP(Mean of Absolute Values)



Source: See Data Appendix in Bordo, Eichengreen and Kim (1998)

Capital flows for the 13 pre-war countries are also considerably less variable (the standard deviation in 1880-1913 was 2.7 percent versus 4.1 percent under the managed floating regime). In the inter-war period, Group 1 countries' current account ratios were about as variable (standard deviation of 3.8 percent) as for the Group 2 countries under the float (standard deviation of 4.1 percent).[12]

Other Evidence for the U-Shaped Pattern

Obstfeld and Taylor (1998) and others present a panoply of supporting evidence for the U-shaped pattern. An extension of the Feldstein – Harioka (1980) approach shows that the coefficients from the savings investment regressions for the countries from 1850 to 1992 traces out an inverted U-shaped pattern. A second piece of evidence is covered interest parity. Obstfeld and Taylor's (1998) findings for the U.S. and the U.K. 1870 – 1990, based on 60-day bank bills, indicate a negligible differential in the years before 1914 as well as in the most recent decade. A third piece of evidence is that on real interest parity, Bordo, Eichengreen, and Kim's (1998) evidence on the divergences for both short-term and long-term securities of ex-post real yields, shows clear evidence of capital market integration before World War I and in the most recent decade, bracketing a period of massive disintegration.

[12] See Bordo, Eichengreen and Kim (1998) Tables 1 and 2.

Other Dimensions of Financial Market Integration

Gross Versus Net Flows

While integration measured in terms of net capital flows as a percentage of GDP is quite similar in the post-1975 and pre-1914 periods, gross flows are greater today. Bank for International Settlements data on turnover in the foreign exchange market suggest that gross flows are in the range of $1.25 trillion a day, or more than $250 trillion a year.[13]

Short-Term Versus Long-Term Capital Flows

It is not possible to compile the data to give us a clear picture of the long-run pattern of the breakdown between short-term and long-term capital flows. According to Bloomfield (1963) and Wilkins (1998) based on very limited data of commercial bank foreign obligations as well as official reserve movements, short-term capital flows, while crucial to the adjustment mechanism of the classical gold standard, were small relative to the long-term capital movements. In the inter-war, limited data in United Nations (1949) and Nurkses (1944) narrative suggests that short-term capital movements during the turbulent years of the 1930s swamped long-term movements. In the postwar Bretton Woods period in the presence of capital controls, private short-term capital flows were limited. Of greater importance were changes in official reserves to accommodate balance of payments dis-equilibrium. Since 1971 short-term capital movements, especially bank loans, have increased in size and importance (Kregel, 1994). However, because many short-term bank credits are routinely rolled over, it is difficult to make the distinction between short-term and long-term.

The Composition of Foreign Investment

Although data on the composition of pre-1914 portfolio investment are incomplete, probably the best (though still limited) estimates are those for Great Britain, the leading creditor of the period. (British investors held about 50 percent of the stock of long-term foreign investments outstanding in 1913 according to conventional estimates. In terms of composition, there is no reason to think that Britain is grossly unrepresentative.) These suggest that circa 1913, fully 30 percent of British overseas investments in quoted securities was in the issues of governments

[13] See BIS (1997).

and municipalities, 40 percent in railways, 10 percent in resource-extracting industries (mainly mining), and 5 percent in public utilities.[14]

Data for portfolio capital flows to emerging markets in the 1990s paint a different picture. Bordo, Eichengreen and Irwin (2000) tabulated these by recipient sector for both bank lending and bonds from Capital Data's Bankware, respectively. These data suggest the growing importance of lending to the financial-services sector (banks etc.), to enterprises producing commercial services, and to manufacturing.

Debt Versus Equity

The relative importance of debt and equity has changed, reflecting the recent expansion of "emerging" stock markets. The most recent issue of the World's Bank's *Global Development Finances* estimates that stocks and bonds are now of roughly equal importance. Prior to 1913, the vast majority of portfolio capital flows took the form of bonds, not equity.

Portfolio Versus Direct Investment

The balance between portfolio and direct foreign investment has changed. Whereas today direct investment is as important as portfolio investment, this was not the case before 1914. According to O'Rourke and Williamson (1999), 79 percent of British investment to Latin America was in this form, and 85 percent to Australia and North America. In contrast, since World War II direct investment has consistently exceeded portfolio investment. While securities markets have grown explosively in recent years, around half of all capital flowing to emerging markets is still in the form of direct investment.

The Nature of Direct Foreign Investment

The nature of direct foreign investment has changed. Before 1914, according to Wilkins (1998), DFI was undertaken mainly by freestanding companies — i.e., companies incorporated in the U.K., France, Belgium, and a few other Western European countries for

[14] These estimates, from Royal Institute for International Affairs (1937), are based on the earlier work of Herbert Feis. Davis and Gallman (1999), focusing on the "19th century emerging markets," find that nine of every ten pounds of British investment in Argentina, Australia, Canada and U.S. between 1865 and 1890 went into railroads and government bonds. According to their estimates, the fraction ranges from 86 per cent in Australia to 92 per cent in Canada (Davis and Gallman, 1999, p.7). Davis and Huttenback (1986) provide comparisons with domestic investment in quoted securities. Their Chart 2.8 confirms the picture of a pattern of overseas portfolio investment concentrated in agricultural and extractive activities (especially in the Empire), in transportation, and in public utilities. Domestic portfolio investment, in contrast, was disproportionately concentrated in manufacturing and in the commercial and financial sectors.

the purpose of investing and doing business in an emerging market.[15] These enterprises proliferated in mining, agriculture and transportation, as in the cases of, inter alia, Rio Tinto and the Suez Canal Company. Today, in contrast, DFI is done through multinational enterprises, whose operations involve the extension across borders not just of financial capital but of the firms' pre-existing managerial and productive capabilities.[16]

III. Explanations for the Historical Pattern of Financial Market Integration

Three salient features of the record need explanation: the high level and persistence of capital flows before 1914; the U-shaped pattern from 1914 to the present; and whether indeed we are back to the future.

The High Level and Persistence of Capital Flows Before 1914

A number of factors could explain the larger size and greater persistence of current account imbalances in the pre-1913 period.[17] One is the greater credibility of policymaker's commitment to stable monetary and fiscal policies as manifested in adherence to the gold standard. The gold standard provided a signal that the borrowers followed the same rules as lenders in the metropolitan centers and hence were unlikely to default on their debts. Bordo and Rockoff (1996) evaluate this hypothesis for nine recipients of British capital in the period 1870-1914 and find strong evidence that good gold standard adherents paid lower interest rates on sovereign debt than those with spottier records. Flandreau, Le Cacheux and Zeumer (1998) find similar results for a different panel of European peripheral countries, as do Sussman and Yateh (1998) for Japan. Insofar as the gold standard proxied for fiscal rectitude and for adherence to similar norms among the capital recipients as well as the senders, the failure of the international monetary system to support equally persistent deficits after World War I may reflect a shift to less credible policies.

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[15] According to Wilkins, classic multinational enterprises in which firms maintained operations in many countries became an increasingly important conduit for foreign direct investment over the period being discussed here.

[16] It is not possible to put together a complete record of the global composition of foreign investment between portfolio and foreign direct investment for the world for our century of experience. Twomey (1998) and Kregel (1994), however, have assembled some of the data. Twomey presents a breakdown into portfolio and direct investment for the world from 1900 to 1938 which shows a significant increase in the share of foreign direct investment (FDI) in the total from 1914 to 1938 from 31% to 48%. For developing countries FDI represented two-thirds of foreign investment until World War II. Since then FDI to LDCS has declined significantly relative to the industrialized nations. According to Kregel, FDI increased relative to portfolio investment during the post-WWII Bretton Woods period but since the 1980s there has been a resurgence of portfolio investment.

[17] Also see O'Rourke and Williamson (1999). They emphasize three factors as key determinants of the high degree of financial integration before 1914; technology; financial institutions, especially the gold standard and favorable political factors.

A related and possibly important determinant of the extent and persistence of British capital exports was the fact that most British investment went to former colonies where the British heritage was strong. These countries (e.g., the U.S., Canada and Australia) shared a common language, culture, legal system, and accounting system. British capital also went to countries like Argentina and Uruguay where Britain had long had a strong commercial presence and considerable political influence, or to colonies under direct British control. The French also directed their lending to countries where they had a strong political influence and close cultural ties, e.g. Italy, Spain, and Russia (see Fishlow (1985) and Flandreau (1998)). By comparison, today's capital recipients tend to be very different in the above respects from the capital exporters. It follows that the latter may be less willing to maintain foreign investment in the face of adverse shocks.

Another explanation may lie in the nature of the investment itself. Much of the capital flowing to the New World went to finance railroads and other infrastructure. This investment required a long-term commitment because of its very nature: because the returns accrued only when the project was completed, rendering it costly to terminate early. Although there is considerable infrastructure investment in today's emerging countries, it does not dominate to the same extent.

Moreover, insofar as prewar investment, and British investment in particular, was investment in traded-goods-related sectors, as emphasized by Fishlow (1985), it went into export-related infrastructure and natural-resource related projects that in the normal course of events generated a stream of foreign exchange revenues sufficient to pay the money back. Thus, it did not give rise to balance-of-payments problems. In addition, the fact that pre-World War I lending took place in an environment of relatively free multilateral trade allowed countries that engaged in significant amounts of external borrowing to expand their exports as needed to amortize those debts.

A final explanation may lie in the flexibility of 19th century economies. Insofar as their markets were less structured and institutionalized and adjustment was less constrained by policy and powerful interest groups, a shift in capital flows which implied the need to reallocate resources between sectors producing traded and non-traded goods could be accommodated easily. Bayoumi and Eichengreen (1996) and Calomiris and Hubbard (1996) provide econometric evidence consistent with this interpretation.

The U-Shaped Pattern of Financial Market Integration

The U-shaped pattern of global financial market integration documented in Section 2 has been well explained by Obstfeld and Taylor (1998) in terms of the policy trilemma between open capital markets, pegged exchange rates and independent monetary policy. Only two of the three elements hold at the same time.

The golden age of financial market integration and capital mobility described above was also the era of the classical gold standard. In that regime, member countries (most of the world) were locked together by making their currencies convertible into gold. Credible gold standard adherence, in the sense of subsuming domestic monetary and fiscal policy to the dictates of gold convertibility, was enforced for the emerging countries by the desire to have access at favorable terms to the capital markets of the core countries of Western Europe (Bordo and Kydland 1996). Credible adherence to gold also meant that short-term capital movements would be stabilizing. The classical gold standard era was not only characterized by free capital mobility but also mobility of labor and goods.

The golden age ended with World War I. The belligerents imposed capital and exchange controls in order to pursue expansionary financial policies and still maintain their parities. The war also changed the political economy of many countries in favor of democracy and the interests of labor – factors which would make it difficult to always subsume domestic policy goals to the dictates of external balance (Eichengreen 1992).

After a period of extreme monetary instability in Europe, the gold standard was restored as a gold exchange standard with full capital mobility. But flaws in its architecture (too low a price for gold, mal-distribution of gold) and the fact that key members (the U.S. and France) followed policies inconsistent with long-run external balance meant that the trilemma was stretched. Nevertheless capital flows did resume in the 1920s with the U.S. succeeding the U.K. as principal lender.

The Great Depression, caused by inappropriate U.S. policies in the deflationary environment of the restored gold standard, spread between countries joined by the links of gold. Adherence to gold also prevented policy makers from following expansionary policies in the world of open capital markets. As a consequence, some countries left the gold standard and allowed their currencies to float, while others imposed capital controls but kept their parities.

By the end of the 1930s, capital controls and exchange controls were nearly universal and this development was reinforced during World War II. After the war, the Bretton Woods system of 1944 was based on pegged exchange rates with an indirect link to

gold, activist stabilization policies and continued capital controls.

It was only by the late 1960s that private capital flows resumed as a consequence of the restoration of current account convertibility. This development revived the trilemma and, in the face of massive speculative attacks, led to its resolution by the abandonment of the par value system in 1973. Since then, capital controls have been eliminated in the advanced countries and reduced considerably in the emerging nations. Floating exchange rates are compatible with monetary independence and an open capital account.

Back To the Future Or Beyond?

The evidence presented in Section 2 suggests that in some respects, international financial markets may have been at least as much or more integrated before 1914 than today and that we are in a "back to the future" scenario.[18] On the other hand in many other respects international financial markets are clearly more integrated now than before 1914. These include the greater depth of the markets seen in the number and variety of lenders and borrowers and in the much wider range of securities traded and sectors financed. The vast majority of bonds sold before 1914 were railroad bonds and governments. Today industry, finance and the service sector in emerging markets are all-important candidates for foreign portfolio investments. A second important development is the shift from debt to equity. Finally, foreign direct investment has expanded considerably from the freestanding companies of the earlier era.

These differences in the scope of market integration were consequences of information asymmetries, contracting problems, and macroeconomic risks that limited the extent of capital and commodity flows prior to 1914 and that continue to limit them, albeit to a lesser extent, today.[19] By information problems is meant the difficulty of determining product, project, and borrower quality. By contracting problems is meant difficulties of detecting fraud and of attaching collateral. By macroeconomic risks is meant mainly exchange risk.

[18] This view has been expressed by several prominent economists. Zevin (1992, p. 43), for example, believes that "while financial markets have certainly tended toward greater openness since the end of the Second World War, they have reached a degree of integration that is neither dramatic nor unprecedented in the larger historical context of several centuries." Sachs and Warner (1995, p. 5) argue that "the reemergence of a global, capitalist market economy since 1950, and especially since the mid-1980s, in an important sense reestablishes the global market economy that had existed one hundred years earlier." Rodrik (1998, p. 2) concludes that "in many ways, today's world falls far short of the level of economic integration reached at the height of the gold standard."

[19] See Bordo, Eichengreen and Irwin (2000).

Information Problems

Any discussion of information flows must start with the communications technology of the day. The transatlantic cable was laid in the 1860s, coming into operation in 1866. Prior to its opening, it could take as long as three weeks for information to travel from New York to London.[20] With the inauguration of the cable, this delay dropped to one day. By 1914 the time for cable transmission was down to less than a minute. Garbade and Silber (1978)

compare the London and New York prices of US bonds four months before and four months after the cable and find a significant decline in the mean absolute difference. There is every reason to think that the cable had a comparable impact on other markets.[21]

The radiotelephone was the next breakthrough. Like the telegraph, it first linked the national financial centers (London or New York) to the hinterlands and regional exchanges before linking up those centers internationally (linking Europe with North America by 1900). It should be apparent why this information and communications technology translated into a smaller volume of short-term capital flows. Today, currency traders respond almost instantaneously to minute-to-minute changes in currency values. Prior to 1870, when it might take weeks for this information to cross the Atlantic, and even after the advent of the cable and the radiotelephone, news arrived at longer intervals.

Long-term lending to manufacturing, commercial and financial concerns was deterred not so much by the limitations of the communications technology as by the difficulty of assembling and evaluating the information to be communicated. Lenders were reluctant to lend because of the difficulty of distinguishing good and bad credit risks. This information asymmetry created adverse selection (where the average credit quality of the pool of borrowers declines with increases in the interest rate) and therefore credit rationing. Overseas investors were further deterred by the difficulty of monitoring and controlling management's actions ex post – i.e., detecting malfeasance and rent dissipation and preventing owner-managers whose downside risk was truncated by limited liability from devoting borrowed funds to riskier projects.

Several already-noted characteristics of late-19th century international capital markets are explicable in terms of obstacles to information flows. For example,

[20] Garbade and Silber (1978), p.826.
[21] The cable reached Buenos Aires in 1878 and Tokyo in 1900.

asymmetric information can explain the disproportionate share of railway bonds in foreign investment portfolios. The manufacturing, financial and commercial sectors of the U.S. economy were growing every bit as fast as transportation, but foreign investment in these sectors was less; information asymmetries explain this fact. It was relatively easy to monitor the actions of a railway company's management: investors could verify how much track had been laid, where it had been laid, and how much traffic it carried more easily than they could verify and evaluate the investment decisions of managers of concerns in these other sectors.

Obstacles to the flow of information can also explain the disproportionate importance of debt as opposed to equity in foreign investment portfolios (Baskin 1988), since debt reduces the risk to investors when imperfect information creates agency problems. The pattern persists today (see e.g. Eichengreen and Mody, 1998), but a century ago it was if anything more pronounced.[22]

Information asymmetries can explain the disproportionate importance of family groups (the foreign branches of the Rothschild and Morgan families, for example) and of the merchant and investment banks that grew out of them, which underwrote foreign bond issues and served as conduits for foreign investment, acting as delegated monitors and emitting signals of borrower credit worthiness. They can explain the well-known Kuznets cycle pattern in which immigration and financial capital tended to flow in the same direction (what Hatton and Williamson (1992) refer to as the tendency for capital to chase after labor), as the migrants provided the European sending countries with valuable information about local conditions. They can explain the sovereign credit rating departments established by intermediaries like Credit Lyonnais (Flandreau 1998). They can explain the development of investment trusts (the 19th century analog of modern mutual funds), to whom investors delegated information-gathering and analysis functions. They can explain the explosive growth of insurance companies, investments in which were attractive to households partly because they could offer an attractive rate of return as a result of their comparative advantage in gathering information from far-flung regions (Snowden 1995). They can explain the popularity of specialized publications like *The Investors Monthly Manual, Burdett's Stock Exchange Official*

[22] The 1997 issue of the World Banks *Global Development Finance* suggests that stocks and bonds are now of roughly equal importance in international portfolio capital flows to emerging markets, after a long period in which debt instruments (bonds and bank loans) dominated purchases of equities.

Intelligence, Poor's Manual of Railroads, and *Herapath's Railway Journal.* They can explain the practice by established railroads of guaranteeing the bonds of feeder lines.

Finally, information asymmetries can explain the surprisingly limited importance of FDI prior to 1914 and the importance of the freestanding company as the vehicle for foreign direct investment. A considerable majority of foreign investment prior to 1914 took the form of portfolio investment, whereas direct investment and portfolio investment are of roughly equal importance today.[23] And whereas 19th century FDI was undertaken mainly by free-standing companies (companies incorporated in Britain, France, Belgium and other Western European countries for the sole purpose of investing and doing business in an emerging market), it takes place today through the agency of multinational enterprises that establish foreign branches and foreign subsidiaries.[24] Free standing companies, in the words of Wilkins (1998, p.13), "were structured to solve the problem posed earlier; business abroad was risky; it was hard to obtain adequate and reliable information about firms in distant lands; returns were unpredictable; but there were clearly opportunities abroad; a company organized within the source-of-capital country, with a responsible board of directors, under source-of-capital country law, to mobilize capital (and other assets) and to conduct the business in foreign countries could take advantage of the opportunities, while reducing the transaction costs by providing a familiar conduit."

Contracting Problems

Information problems may have been the key explanation for the relatively limited scope of late-19th century capital flows. But they were not the entire story. Beyond the immediate problem of geographical ignorance, distance made for problems of control. It was hard to monitor actions taken by management thousands of miles away when round-trip communication could take a month.

Foreign investors were also deterred by the uncertain legal security of their claims. For example, because the United States was a federation, corporations were chartered by the states, not the federal government, and governed by the laws of the state in question. States prohibited foreigners from serving as directors of the corporations chartered there. In response, some British investors hired American citizens to

[23] Bloomfield (1968), pp.3-4

[24] See Wilkins (1998). Free standing companies became increasingly important as British investors gradually diversified beyond investments in railroads and government bonds into farming, ranching, mining and brewing and they sought to surmount the agency problems associated with the attempt to control far-distant American management.

represent them on the board, but this extra layer between ownership and control had the predictable effect of adding principal-agent slack.

Foreign investors also had reason to fear that they would not be treated fairly under American bankruptcy law. They worried that companies might be wound up and their assets sold off to other claimants to the detriment of foreign investors.

Thus, America's experience before 1914 points out the importance of transparent and equitable bankruptcy laws for emerging markets seeking to attract foreign investment. This of course was the attraction of investing in the colonies, where bankruptcy law was familiar and creditor rights were relatively secure. Direct investment through freestanding companies was another solution. Wilkins emphasizes not only the difficulty of obtaining adequate and reliable information but also the advantages of establishing the country doing business abroad under source-of-capital country law to minimize contracting problems. British shareholders could be confident of their rights because the freestanding company was subject to British law.

The Absence of Adequate Accounting Standards

While difficulties of contract enforcement may have been a significant deterrent to foreign investment, asymmetric information was the overwhelming important obstacle to international capital flows.[25] These information problems were compounded by the inadequacy of prevailing auditing and accounting standards. In particular, British investors were deterred from investing in the United States by the underdevelopment of American accounting practices.

In the U.S. case, both market discipline and regulatory intervention were needed for the adoption of generally accepted accounting principles. Market discipline was applied by British investors, who insisted on the transfer to the United States of accounting practices accepted in Britain. Their preferred agent for the transfer was the British chartered accountancy firm. Another source of market discipline was the New York Stock Exchange, which from the turn of the century required the publication of standardized balance sheets by all entities whose securities were accepted for listing.

But market discipline was not enough. In addition there was the need for regulatory intervention, starting with the Interstate Commerce Commission, which required the railroads it regulated to provide information using standardized accounting practices

[25] As also emphasized by Davis and Gallman (1999).

from the 1880s, and culminating in the regulations imposed by the Securities and Exchange Commission in 1933. The United States' own experience suggests that the development of a uniform, transparent accounting standard is no mean task. It suggests that market discipline and government intervention is both needed to yield the desired result. International investors can be an important source of that market discipline, and international accounting firms can be efficient agents of technology transfer. But until that transfer is effected, the integration of the domestic financial markets with their foreign counterparts will necessarily remain incomplete.

Macroeconomic Risks

A number of observers emphasize exchange risk, unstable and uncertain monetary and fiscal policies, and political risk as factors limiting pre-1913 international investment flows. Madden (1985, p.255) emphasizes the importance of a stable standard of value, stating that "it is of course common knowledge" that British investors viewed securities issued by countries not on the gold standard as riskier than those of countries that were. Many foreign securities issued in London were denominated in sterling and specified that principal and interest were payable in sterling (or in foreign currency convertible into sterling at a fixed rate of exchange), but in this case exchange rate fluctuations created credit risk instead of currency risk. (Currency depreciation might push the borrower into bankruptcy by raising the value of his debt service payments relative to his income stream.[26]) In the case of government bonds, the fear was that governments off gold would succumb to the temptation to live beyond their means. For example, Barings (the famous London merchant bank) had unusual difficulty in placing U.S. government bonds in the second half of the 1860s, since investors feared that profligacy of the government operating under a fiat money regime would precipitate a financial crisis and force it to repudiate the debt. The Bland Bill of 1877, which raised the specter of large-scale silver coinage, similarly caused British investors to liquidate their U.S. government securities in favor of colonial bonds with interest and principal guaranteed in sterling. Again in the early 1890s, the possibility of free silver coinage led foreign investors to liquidate their holdings of U.S. securities and to a rise in the premia on U.S. bonds and foreign exchange. Bordo and Rockoff (1996) (1998) find that the effect was general: loans to countries with a fluctuating standard of

[26] This phenomenon will be familiar to observers of the Asian crisis. There, banks which were prohibited from maintaining open foreign positions and which therefore offset their foreign-currency liabilities by making foreign-currency loans to domestic corporations simply substituted credit risk for currency risk.

value commanded significantly higher interest rates in both the 1870-1914 gold standard and 1925-1931 gold exchange standard periods.

IV. Financial Crises Then and Now

The recent experiences of international crises in emerging markets in Latin America and Asia leads to the impression that financial crises are a phenomenon of the current age of globalizing capital markets. In fact this is not the case, the world has seen waves of crisis since the advent of capitalism and the earlier era of globalization before 1914 witnessed similar patterns of capital inflows, lending booms, followed by capital outflows and lending busts.

Historical Narrative

The classic case with resonance for today is Latin America's experience with lending booms and busts prior to 1914 (Marichal 1989). The first wave of British capital flows to the new states of the region to finance infrastructure and gold and silver mines ended with the crisis of 1825. British investors had purchased Latin American stocks and bonds, some of which were in nonexistent companies and even countries, with gay abandon (Neal 1997). The boom ended with a stock market crash and a banking panic. The new countries defaulted on their debts and lost access to international capital markets for decades, until they renegotiated terms and began paying into arrears (Cole, Dow and English 1995.)

The second wave of foreign lending to Latin America in the 1850s and 1860s was used to finance railroadization and ended in the 1873 financial crisis. Faced with deteriorating terms of trade and a dearth of external finance, countries defaulted on their debts.

The third wave in the 1880s involved massive flows from Britain and Europe generally to finance the interior development of Argentina and Uruguay; it ended with the crash of 1890, leading to the insolvency of Barings. Argentine state bonds went into default, a moratorium was declared, and flows to the region dried up for half a decade. In the wake of the Baring Crisis, financial distress in London and heightened awareness of the risks of foreign lending worsened the capital-market access of other "emerging markets" like Australia and New Zealand. The next wave of capital flows to emerging markets started up only after the turn of the century, once this wreckage had been cleared away.

Latin experience may be the classic, but the United States also experienced lending booms and busts.[27] The first wave of British capital in the 1820s and 1830s went to finance canals and the cotton boom. It ended in the depression of 1837-1843 with defaults by eight states, causing British investors to shun U.S. investments for the rest of the decade.

The second wave followed the U.S. Civil War and was used to finance westward expansion. The threat that the country would abandon gold for silver precipitated capital flight in the mid-1890s but, unlike the Latin case, did not lead to the suspension of convertibility or an extended reversal of capital flows.

Financial crises in this period were precipitated by events in both lending and the borrowing countries.[28] A number of crises began in Europe due to harvest failures. On several such occasions (1837, 1847, 1857) the Bank of England raised its discount rate in response to an external drain of gold reserves. This had serious consequences for capital flows to the New World. Thus, the 1837 crisis spread to North America via British intermediaries that financed the export of cotton from New Orleans to Liverpool, leading to the suspension of specie convertibility by the United States and to bank failures across the country.

Not all crises originated in the Old World. Some emanated from Latin America, where they were precipitated by supply shocks that made it impossible for commodity-exporting countries to service their debts, and by expansionary monetary and fiscal policies adopted in the effort to protect the economy from the consequences. Some were triggered by financial instability, especially in the United States, a country hobbled by a fragile unit banking system and lacking a lender of last resort. These crises in the periphery in turn infected the European core. Classic examples include the Argentine crisis of 1889-90 and the U.S. crises of 1893 and 1907.

A fourth wave of flows to emerging markets (and to the "re-emerging markets" of Europe) occurred in the 1920s after leadership in international financial affairs shifted from London to New York. (Bordo, Edelstein and Rockoff 1999). It came to a close at the end of the decade with the collapse of commodity prices and the Great Depression. Virtually all countries, with the exception of Argentina, defaulted on their debts. Private portfolio capital did not return to the region for four decades.

[27] See DeLong (1999).
[28] See Bordo and Murshid (2000) for evidence on the international transmission of financial crises and contagion effects from 1880 to the present.

These inter-war crises were greater in both severity and scope. They were tied up with the flaws of the gold-exchange standard. Compared to the pre-war gold standard, the credibility of the commitment to gold convertibility was weak, and capital flows were not as stabilizing. This fragile system came under early strain from changes in the pattern of international settlements, reflecting the persistent weakness of primary commodity prices and the impact on the current account of reparations and war-debt payments.

Hence, when the Great Depression hit, banking panics spread via the fixed exchange rates of the gold-exchange standard. Countries were only spared the ravages of depression when they cut the link with gold, devaluing their currencies and adopting reflationary policies.

The Bretton Woods System established in reaction to the problems of the inter-war period placed limits on capital mobility. In response to the inter-war experience with banking crises, governments created elaborate systems of regulation to reduce risk-taking in the domestic financial sector and constructed a financial safety net in the form of deposit insurance and lenders of last resort. The result was virtually no banking crises for the better part of four decades.

Crises under Bretton Woods were strictly currency crises, in which speculators attacked countries that attempted to defend exchange rates inconsistent with their domestic macroeconomic and financial policies. These attacks ended either in devaluation or, on occasion, in a successful rescue mounted by international authorities (the IMF and the G-10). This contrasts with the Victorian Era, when there were fewer "pure currency crises" (unaccompanied by banking crises) except at the outbreak of wars.

Incidence, Depth and Severity of Crises

How does the record of recent emerging market crises compare with that of earlier times? Bordo, Eichengreen, Klingebiel and Martinez-Peria (2000) provide an answer to this question based on annual data for real GDP for a sample of 21 countries, both emerging and advanced, from 1880 to 1972 and a larger sample of 53 countries from 1973 to 1998.

Definition of Crises

In our study, we define financial crises as episodes of financial turbulence that lead to distress – significant problems of illiquidity and insolvency – among major financial-market participants and/or to official intervention to contain those

consequences. We distinguish between currency, banking and twin crises.

We identify these episodes from a survey of the historical literature, using the following criteria to guide our survey: For an episode to qualify as a currency crisis, we must observe a forced change in parity, abandonment of a pegged exchange rate, or an international rescue. In addition, we construct the now-familiar index of exchange market pressure, calculated as a weighted average of the percentage change in the exchange rate with respect to the core country (the UK before 1914, the US thereafter), the change in the short-term interest rate differential with respect to the core country, and the difference of the percentage change in reserves of a given country and the percentage change in reserves of the core country. A crisis occurs when this index exceeds a critical threshold (say, one and a half standard deviations above its mean value).[29]

We count an episode as a currency crisis when it shows up according to either (or both) of these indicators. Since we are concerned not just with the frequency of crises but also with the output loss associated with them, successive crises that follow before recovery from a first crisis is complete are scored as one event.

For an episode to qualify as a banking crisis, we must observe bank runs, bank failures and the suspension of convertibility of deposits into currency (a banking panic), or significant banking-sector problems (including failures) that are resolved by a fiscally underwritten bank restructuring.[30]

For the period before 1914, data availability limits us to 21 countries, which we classify as advanced industrial or emerging.[31] We follow the same 21 countries through the inter-war period and Bretton Woods years, although changes in their industrial development lead us to reclassify several "emerging markets" as "industrial" in these periods.[32] To facilitate comparisons with other studies of the

[29] This builds on the exchange-market-pressure model of Girton and Roper (1977) and the methodology in Eichengreen, Rose and Wyplosz (1995, 1996). Following the latter, we chose the weights to equalize the conditional volatility of the components of the index.

[30] For the past 1973 period we use the banking crises dates from Caprio and Klingebiel (1996, 1999) and the currency crises dates from IMF (1998). The complete list of crises is in the Appendix to Bordo, Eichengreen, Klingebiel and Martinez-Peria (2000).

[31] The pre-1914 "emerging markets," whose selection is driven by data availability, are Argentina, Australia, Brazil, Canada, Chile, Denmark, Finland, Greece, Italy, Japan, Norway, Portugal, Spain, Sweden, and United States. The pre-1914 industrial economies are Belgium, France, Germany, the Netherlands, Switzerland, and Great Britain. As noted in Bordo and Eichengreen (1999), classifying the U.S. as an emerging market is controversial. We do so because the U.S. was a steady capital importer through much of the period, like the other late developers in our sample, and because it lacked a number of the institutions of an advanced-industrial economy, notably a central bank.

[32] Starting in 1919, we re-classify the following countries as industrial: Australia, Canada, Denmark, Finland, Italy, Japan, Norway, Sweden and the United States.

post-1973 period, we consider 56 advanced-industrial and emerging markets.[33]

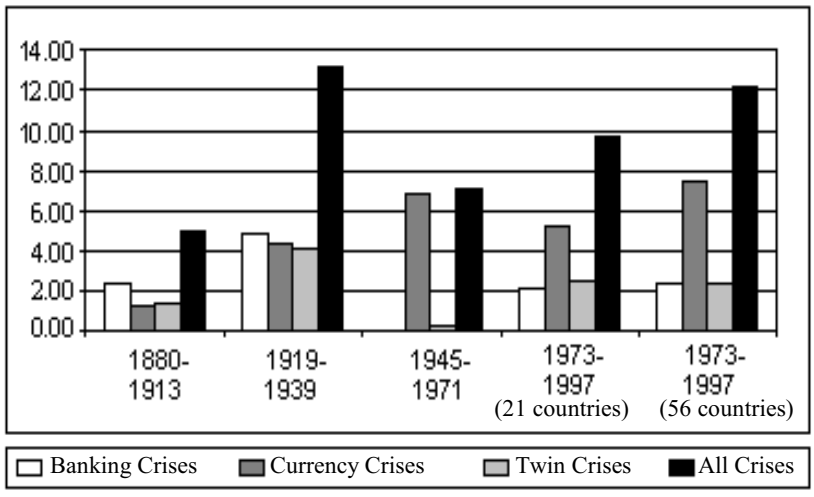
To quantify the depth and duration of crises, we focus on changes in the rate of growth of GDP around these dates. The methodology deployed is a variant of that in IMF (1998). We calculate the trend rate of growth of GDP in the five years preceding the crisis. We calculate recovery time as the number of years before the rate of GDP growth returns to trend. We calculate the associated loss of output as the sum of the differences between actual GDP growth and the five-year average preceding the crisis until growth returns to trend.

Frequency of Crises

Figure 4 summarizes the incidence of crises in the few sub-periods we focus on. We divide the number of crises by the number of country-year observations in each sub-period. As can be seen the incidence for all crises for the 56 countries 1973 – 1997 at 14.7 is three times as high as the last era of globalization before 1914. For just the sample of 21 countries, it is twice as high. It is only rivaled by the notorious inter-war period. Thus, crises appear to be growing more frequent.

The greater incidence of crises since 1973 seems largely related to the higher incidence of currency crises. The post-1973 rate is eight times as high as the pre-1914 rate and 50 percent higher than the closest rival, the Bretton Woods period.

Figure 4. Crisis Frequency



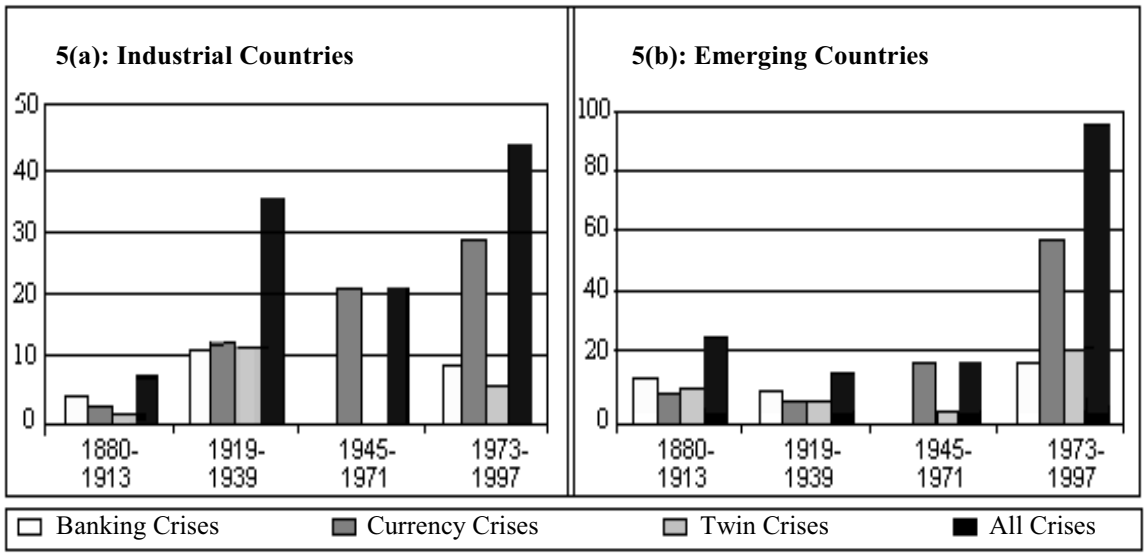
Source: Bordo, Eichengreen, Klingebiel, Martinez-Peria (2000)

[33] These are the 53 countries used in IMF (1998), plus Senegal, Ghana and Cote d'Ivoire.

The story for banking crises and twin crises is different. Here the inter-war period is the period of exceptional instability, followed closely by the recent period. In contrast, banking crises were almost nonexistent in the hey day of Bretton Woods, years of tight domestic financial regulation.

A comparison of crisis frequency between emerging and industrial countries in Figure 5 suggests that with the exception of the inter-war period, the majority of crises occurred in the emerging countries. The inter-war exception reflects the Great Depression when financial stability in the industrial center became a casualty.

Figure 5. Number of Crises: Distribution by Market



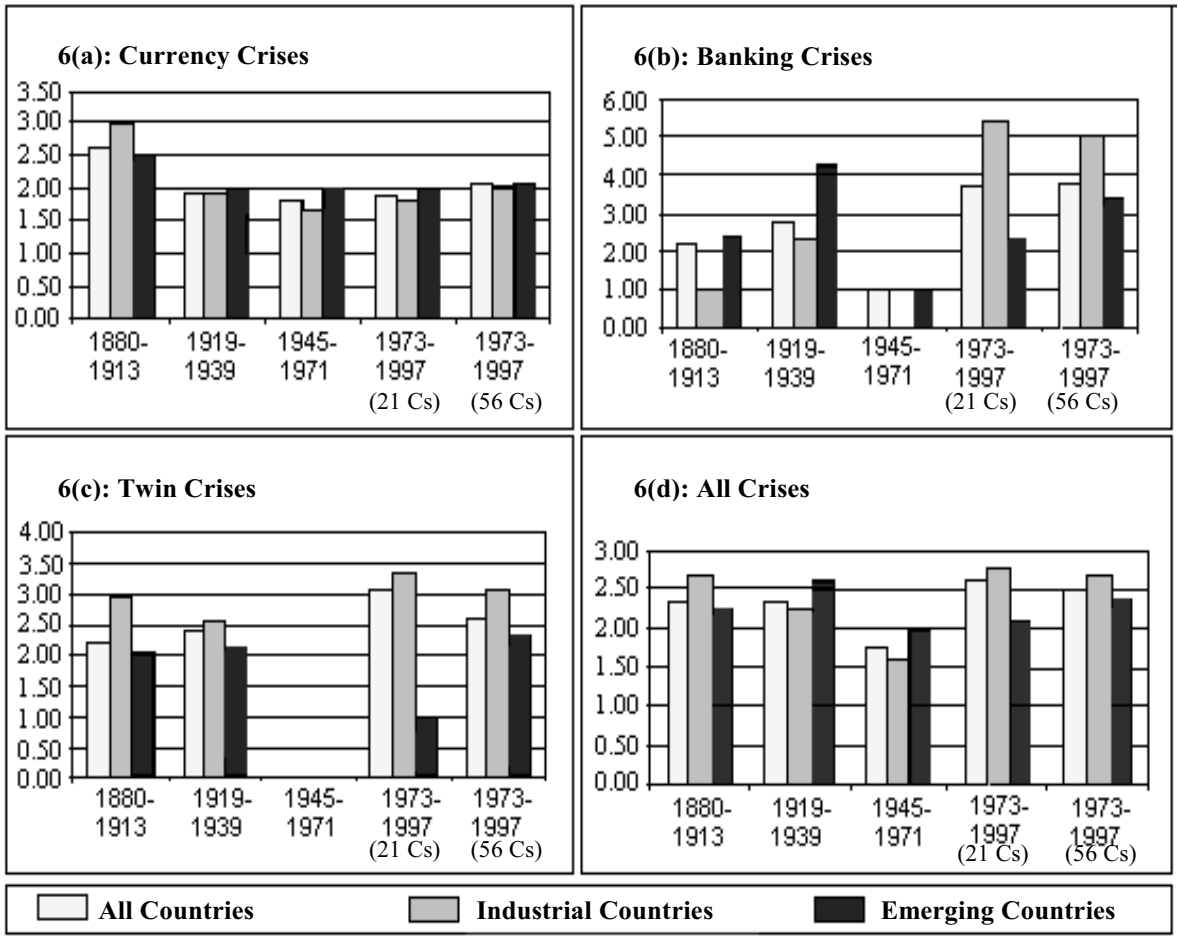
Source: Bordo, Eichengreen, Klingebiel, Martinez-Peria (2000)

Duration of Crises

We measure the duration of crises by the number of years until GDP growth returns to its pre-crisis trend, including the year when it returns to that trend (see Figure 6). For currency crises, recovery time is longer pre-1914.[34] This holds for both industrial and advanced countries. The opposite is the case for banking and twin crises, which seem to take even longer to recover than in the inter-war period.

[34] These results are in contrast to those of Goodhart and Delargy (1999) and McKinnon (2000 a and b) who suggest that recovery should have been faster under the classical gold standard regime because capital would flow quickly to countries credibly committed to maintaining convertibility of their currencies into gold.

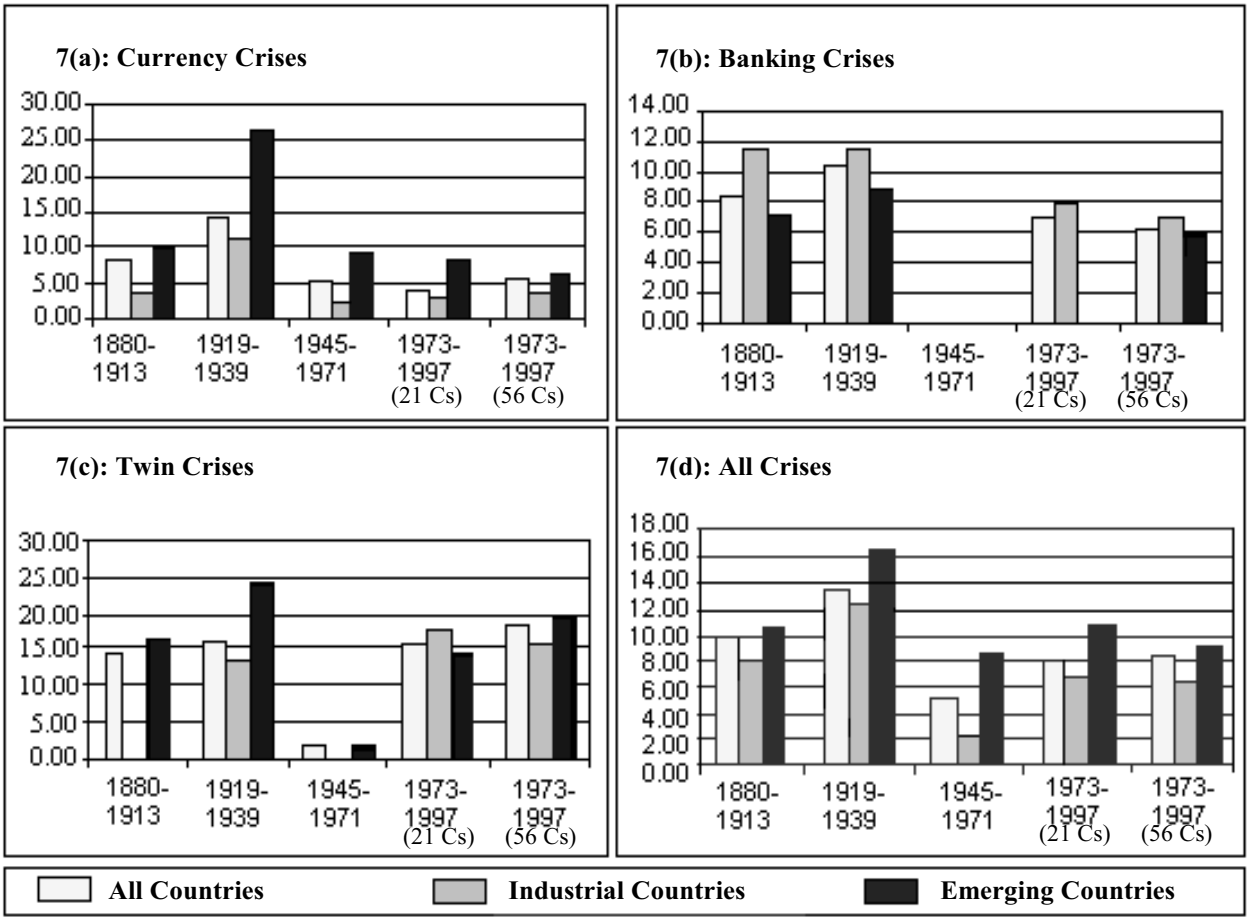
Figure 6. Average Recovery Time (in years)



Depth of Crises

Finally, we present evidence on the depth of crises. We calculate the depth of crises by cumulating over the years prior to full recovery, the difference between pre-crisis trend growth and actual growth, and express the difference as a percent. Figure 7 shows that output losses for all crises were higher before 1914 compared to today. This holds for both emerging and advanced countries. It is also the case for currency crises and banking crises. What is different about today compared to the earlier era of globalization is that the output losses from twin crises in emerging markets are considerably higher today than before World War I. As expected the inter-war period is the worst in virtually all respects. Bretton Woods was relatively mild except in the case of currency crises in the emerging countries where the losses exceeded those of today. These results are driven by crises in Brazil and Argentina.

Figure 7. Output Loss Per Crisis



Implications

Our key finding is that the crisis problem is not new. Crises under different regulatory and monetary regimes have been followed by downturns lasting on average 2 – 3 years and costing approximately 10 percent of GDP. What is new about the recent experience is the greater frequency of crises post-1973 than earlier regimes, except for the inter-war, especially the incidence of currency crises.

The greater incidence of currency crises today (especially in emerging markets) is consistent with the notion that international finance is even more globalized today than a hundred years ago. As we pointed out in Section 3 above, the bulk of portfolio investment prior to 1914 flowed to a handful of countries and colonies. Now there are scores of newly independent countries accessing international capital markets and scores more seeking to follow in their footsteps. While foreign lending still flows disproportionately to a relatively small number of national markets, there is nonetheless a larger number of economies involved in these international financial transactions to some extent – and specifically to an extent sufficient to expose them to a crisis risk.

The contrast between the incidence of banking and currency crises under Bretton Woods suggests a distinction between the ability of domestic regulation and controls on international capital flows to suppress crisis risk in the markets toward which they are most immediately directed. Tight domestic financial regulation suppressed banking crises almost completely from World War II through the 1960s. But capital controls, which were also widespread in this period (and in the 1930s, 1970s and 1980s), were less successful in suppressing currency crises.[35]

The fact that recovery from currency crises is, if anything, faster today than pre-1914 and output losses less, may reflect the fact that the information environment is better today than a hundred years ago. Asymmetric information remains a fact of financial life, but it is easier today than a century ago to obtain information on policy and performance in emerging markets. Investors could more easily assess whether Mexico had made the policy adjustments needed to put its crisis behind it by 1996, for instance, than they could of Argentina in 1896. Better information increases the incentive for reform insofar as reform has a greater capacity to elicit stabilizing capital inflows in the aftermath of a crisis.

The international financial institutions may play a role here by providing the liquidity needed to clean up after crises and by providing an additional signal of policy credibility. But before the champions of the IMF take heart, it is worth observing that our finding that the frequency of crises has increased is also consistent with interpretations of recent events emphasizing the moral hazard created by international bailouts.

Recovery is slower today and the output losses higher in the case of banking crises than in the earlier age of globalization. This may reflect the fact that the nature of banking crises has changed from “banking panics” to “banking crises” (Bordo and Schwartz (2000)).

Before 1914 banking crises were depositor panics, in which depositors rushed to get their money out of questionable banks. These were fast moving affairs that produced large output losses when they engulfed the payments system and the money supply. They were more prevalent at the periphery than in the core, since most members of the periphery lacked lenders of last resort to support solvent but illiquid institutions. Today,

[35] Bordo et al (2000) present some multinominal logit analysis of the causes of banking, currency and twin crises in different historical areas. The results are consistent with the present interpretation, in that there is little evidence there that capital controls significantly reduce crisis risk – sometimes they even appear to increase it (a result also emphasized by Glick and Huchison (2000)).

in contrast, the connection between crises and panics is less immediate. The government and its lender of last resort often step in before a panic can get underway, and deposit insurance weakens the incentive for bank creditors to run. But banking crises today, measured in terms of output losses, are longer lasting than before 1914, and the associated output losses are larger. This suggests that governments have gone too far in the direction of "Too Big to Fail" and other forms of regulatory forbearance.

Compared to these two periods, the Bretton Woods period and the inter-war years are both outliers, albeit in different directions. Bretton Woods had no banking crises, simply because banks were so tightly regulated. And they were tightly regulated in reaction against the disasters of the inter-war period, when a large number of exceptionally devastating banking crises were allowed to occur as a result of deeply flawed macroeconomic and regulatory policies.

Finally, that the incidence of twin crises is higher in our age than in the previous period of globalization plausibly reflects the greater openness of capital accounts and the change in the nature of banking crises, as described above. To the extent that the monetary authorities guarantee the liabilities of the banking system, they open themselves up to speculative attack if they are simultaneously attempting to limit the variability of the exchange rate. Today, just as a century ago, this is the most virulent form of crisis of all.

V. Globalization, Crises and Controls

The recent spate of financial crises has led to cries by some for capital controls and the slowing down of the integration process. Others argue that at the very least, the liberalization of countries that still have significant barriers to free capital mobility should not be encouraged until significant financial sector reforms involving greater transparency, and adequate supervision and regulation facilities are instituted (Eichengreen and Mussa 1998). It is argued by some that the benefits to economic welfare and growth of liberalization may not be worth the costs of the crises (Rodrik 1998).

The recent case for re-imposing controls to prevent crises is based on the argument that asymmetric information fosters lending booms that can suddenly collapse in the face of a sudden change in market sentiment, which may or may not reflect fundamentals (Rodrik 1998). Herding behavior creates a massive capital flow reversal. In turn, contagion effects lead to massive capital flows from neighboring countries facing similar economic problems and even from emerging countries, which do not.

The case against imposing controls in general is that it prevents the optimal allocation of resources, it prevents optimal portfolio diversification, it encourages irresponsible macro policy and it leads to corruption (Cooper 1998).

The proposals for controls range from preventive controls on outflows to alleviate balance of payments pressure before a crisis; temporary controls on outflows (curative controls) imposed during a crisis, e.g. Malaysia; and controls on capital inflows to prevent a crisis, e.g. Chile (Edwards 1999).

What is the evidence on the effectiveness of capital controls? Edwards (1999) presents a convincing case based on the Latin American experience that preventative controls on capital outflows are largely ineffective because they are easily evaded, lead to corruption and to bad policies. Curative crisis controls also were associated with unsatisfactory GDP growth following the crisis (Edwards (1999), p. 9).

The most prominent recent example of controls on capital inflows is that of Chile, which on two occasions in the past two decades has required foreigners wishing to invest in the country to hold non-interest bearing deposits at the central bank. According to Edwards (1999) the controls were successful in lengthening the maturity structure of foreign indebtedness and hence reducing vulnerability to sudden reversals, but that this was achieved at the expense of a higher cost of capital especially to small and medium sized firms. The controls also did give the monetary authorities extra independence to pursue policies that could help insulate the domestic economy from external shocks but the evidence on how protected Chile's financial markets were from contagion during the recent Asian crisis is mixed: the volatility in stock prices declined, but not the volatility of short-term interest rates.

What about the effects of the liberalization of capital controls on growth? According to Rodrick (1998) based on a panel regression for 23 countries 1993 to 1996, "capital controls are essentially uncorrelated with long-term economic performance once we control for other determinants."[36] The historical evidence is mixed. Bordo and Eichengreen (1998) based on a panel regression, found that the hypothetical removal of capital controls during the Bretton Woods period 1959-1973 would have had negligible effects on the growth rates of industrial countries but weak positive effects on the growth of emerging countries.[37]

[36] Edwards (1999) criticizes the IMF index of capital controls used in the study as too general to pick up country specific restrictions.

[37] Also see Klein and Olivei (1999) who present evidence for a panel of advanced and emerging countries for the past two decades showing that capital account liberalization raised growth rates via a financial deepening effect for the advanced countries but not for the emerging countries.

Moreover the historical pattern of growth rates, financial crisis incidence and the presence or absence of controls is also mixed. In pre-1914 regimes without any capital controls, the incidence of currency crises in both advanced and emerging countries was considerably less than under Bretton Woods, a regime with capital controls and twice the growth rate. (See Figure 5)

In summary, more research is needed to determine whether the incidence of crises affects long-term growth and whether using controls to suppress them really matters one way or the other. Indeed, the problem may not be the capital inflows to emerging countries at all but what is done with them, whether they are used to finance productive investment, conspicuous consumption, or somewhere in between. This is related in turn to the structure of the financial system including its regulation and supervision. Financial crises are more likely to happen in unsound financial environments. Whether this implies an orderly sequencing of reforms before capital markets are opened, or opening the capital markets and allowing the domestic financial system to be exposed to the light of day with a crisis as a wake-up call for reform, is another matter.

The historical record for the US and other emerging countries of the pre-1914 golden age is that despite the crises, they emerged and that foreign capital was crucial to their development. Perhaps the crises served as a signal or a wake-up call for reform for both the private sector and government. Hampering the flows of capital may have suppressed the crises but they also might have hindered the learning process that was key to their financial and economic development.

VI. Conclusion

What are the lessons from history from our survey of the record on the globalization of international financial markets and the financial crises that accompanied it?

First, financial market integration has followed a U-shaped pattern, declining in the middle years of the twentieth century from the high levels achieved before 1914 to similar or higher levels today. It took the restoration of macro stability by the advanced countries in the 1970s and 80s and specifically the resolution of the policy dilemma with the advent of floating exchange rates to allow the resurgence of capital mobility to take place. This record makes a strong case for a floating exchange rate regime for the advanced countries. This does not rule out regional exchange rate arrangements like the ERM or emerging countries adopting a currency board or dollarization to establish credibility. The historical record, however, as developed here and in Obstfeld and

Taylor (1998) makes the case for intermediate arrangements harder to defend.

Secondly, financial market integration is broader and deeper today than pre-1914. This largely reflects financial innovations to overcome barriers to asymmetric information. Also at work have been improvements in communications and government regulations to encourage transparency in financial markets.

Third, financial crises have always been part of the scene. They may be the product of asymmetric information. They most likely reflect shocks and inconsistent fundamentals. The effects of crises are and were worse in emerging countries (with the exception of the inter-war period). This is the case because they are financially underdeveloped; have thinner markets; have less diversified portfolios; have less effective supervision and regulation; have less well defined property rights and bankruptcy codes; and a greater proclivity to follow unstable macroeconomic policies. All of these features make them more prone to asymmetric information problems, lending booms and busts and banking crises.

This was the case in some emerging market countries before 1914. The U.S. is a stellar example. It was prone to periodic financial crises because of the unsound state unit banking system which prevented interregional portfolio diversification and because it did not have an effective lender of last resort, (although private arrangements such as the clearinghouses in many cities, did on occasion alleviate banking panics).

The lesson from the experience of emerging countries like the U.S., Australia, Canada and the Scandinavian countries that graduated to advanced status is to allow financial markets to develop and mature. This requires a set of rules including secure property rights, an effective lender of last resort and a sound macro policy environment. Some of these attributes can be imported by allowing financial institutions from advanced countries to operate freely in the emerging countries. Others will develop with time.

However as the record indicates, crises are still very much part of the scene. Although domestic banking crises can be handled by the domestic monetary authorities, international liquidity crises may require assistance by international authorities to countries that cannot access private capital markets.

References

Bairoch, Paul, and Richard Kozul-Wright (1996). Globalization Myths: Some Reflections on Integration, Industrialization, and Growth in the World Economy." United Nations Conference on Trade and Development. Discussion Paper No. 113 (March).

Bank for International Settlements (1997). A Central Bank Survey of Foreign Exchange Market Activity. Basle: BIS.

Baskin, Jonathan B. (1988). The Development of Corporate Financial Markets in Britain and the United States, 1600-1914: Overcoming Asymmetric Information. *Business History Review*. Vol. 62. (Summer) pp. 197-237.

Bayoumi, Tamim and Barry Eichengreen (1996). The Stability of the Gold Standard and the Evolution of the International Monetary System in Tamim Bayoumi, Barry Eichengreen, and Mark Taylor (eds.) *Modern Perspectives on the Gold Standard*, Cambridge: Cambridge University Press.

Bernanke, Ben and Harold James (1991), "The Gold Standard, Deflation, and Financial Crisis in the Great Depression: An International Comparison," in R. Glenn Hubbard (ed.), *Financial Markets and Financial Crises,* Chicago: University of Chicago Press pp. 36-68.

Bloomfield, Arthur I. (1963). *Short-Term Capital Movements Under the Pre-1914 Gold Standard*. Princeton, NJ: Princeton Studies in International Finance. No. 11.

Bloomfield, Arthur I. (1968). *Patterns of Fluctuation in International Finance Before 1914*, Princeton Studies in International Finance. No. 21.

Bordo, Michael D., Barry Eichengreen, Daniella Klingebiel and Maria Soledad Martinez-Peria. "Is the Crisis Problem Growing More Severe?" Economic Policy (forthcoming)

Bordo, Michael D. and Barry Eichengreen (1998) "Implications of the Great Depression for the Development of the International Marketing System," in Michael D. Bordo, Claudia Goldin and Eugene N. White (eds.) *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*, Chicago: University of Chicago Press, pp. 403-454.

Bordo, Michael and Barry Eichengreen (1999) "Is Our Current International Economic Environment Unusually Crisis Prone?" in *Capital Flows and the International Financial System*. Sydney: Reserve Bank of Australia, pp. 18-74.

Bordo, Michael, Barry Eichengreen and Douglas A. Irwin (1999), "Is Globalization Today Really Different Than Globalilzation a Hundred Years Ago?" in Susan M. Collins and Robert Z. Lawrence (eds.) *Brookings Trade Forum,* Washington D.C. Brookings Institution, pp. 1-50.

Bordo, Michael D., Barry Eichengreen and Jongwoo Kim (1998), "Was There Really an Earlier Era of Financial Globalization Comparable to Today?" In Bank of Korea, The Implications of the Globalization of World Financial Markets, Seoul: Bank of Korea, pp.27-83.

Bordo, Michael and Finn Kydland (1996), "The Gold Standard as a Commitment Mechanism," in Tamim Bayoumi, Barry Eichengreen and Mark Taylor (eds.), *Modern Perspectives on the Gold Standard,* Cambridge: Cambridge University Press.

Bordo, Michael D., Michael Edelstein, Hugh Rockoff (1999), "Was Adherence to the Gold Standard a 'Good Housekeeping Seal of Approval' During the Inter-War Period?" unpublished manuscript, Rutgers University (February).

Bordo, Michael D. and Anna J. Schwartz (2000) "Measuring Real Economic Effects of Bailouts: Historical Perspectives on How Countries in Financial Distress Have Failed With and Without Bailouts." Rutgers University (mimeo).

Bordo, Michael D. and Antu Murshid (2000) "The International Transmission of Financial Crises Before World War II: Was There Contagion." IMF-World Bank Conference on Contagion, February.

Bordo, Michael D., and Hugh Rockoff (1996). The Gold Standard as a Good Housekeeping Seal of Approval. *Journal of Economic History*. Vol. 56 (June) pp. 389-428.

Caprio, Gerard, Jr. and Daniela Klingebiel (1996). "Bank Insolvencies: Cross Country Experience" *Policy Research Working Paper 1620.* Washington D.C. The World Bank.

Caprio, Gerard, Jr. and Daniela Klingebiel (1999). "Episodes of Systematic and Banking Financial Crises." mimeo World Bank.

Calomiris, Charles, and Glenn R. Hubbard (1996). International Adjustment Under the Classical Gold Standard: Evidence for the U.S. and Britain, 1879-1914" in Tamim Bayoumi, Barry Eichengreen and Mark P. Taylor, eds. *Modern Perspectives on the Gold Standard*. Cambridge: Cambridge University Press.

Cole, Harold L., James Dow and William B. English (1995), "Default, Settlement, and Signaling: Lending Resumption in a Reputational Model of Sovereign Debt," *International Economic Review 36*, pp. 365-385.

Cooper, Richard N. (1998) "Should Capital-Account Convertibility be a World Objective?" in *Should the IMF Pursue Capital-Account Convertibility*? Princeton: International Finance Section Essays in International Finance No. 207, May, pp. 11-19.

Davis, Lance E. and Robert A. Huttenback (1986), *Mammon and the Pursuit of Empire*, Cambridge: Cambridge University Press.

Davis, Lance E. and Robert Gallman (1999), "Waves, Tides, and Sandcastles: The Impact of Foreign Capital Flows on Evolving Financial Markets in the New World, 1865-1914," unpublished manuscript, Caltech and University of North Carolina, Chapel Hill.

DeLargy , P.J.R. and Goodhart, Charles (1999), "Financial Crises: Plus ça change, plus c'est la meme chose," LSE Financial Markets Group Special Paper No. 108.

DeLong, J. Bradford (1999) "Financial Crises in the 1890s and the 1990s: Must History Repeat?" *Brookings Papers in Economic Activity* Volume 2, pp. 253-294.

Dooley, M., (1997). A Model of Crises in Emerging Markets. *NBER Working Paper #6300*.

Edwards, Sebastian (1999). "How Effective Are Capital Controls*?" NBER Working Paper No. 7413, November.*

Eichengreen, Barry (1992). *Golden Fetters.* Oxford University Press.

Eichengreen, Barry and Ashoka Mody (1998), "What Explains the Changing Spreads on Emerging-Market Debt: Fundamentals or Market Sentiment*?" NBER Working Paper No. 6408 (February).*

Eichengreen, Barry and Michael Massa (1998). "Capital Account Liberalization : Theoretical and Practical Aspects". *IMF Occassional Paper 172*. Washington, D.C.

Eichengreen, Barry, Andrew Rose and Charles Wyplosz (1995), "Exchange Market Mayhem: The Antecedents and Aftermath of Speculative Attacks*," Economic Policy 21,* pp. 249-312.

Eichengreen, Barry, Andrew Rose and Charles Wyplosz (1996), "Speculative Attacks on Pegged Exchange Rates: An Empirical Exploration with Special Reference to the European Monetary System" in Matthew Canzoneri, Wilfred Ethier and Vittorio Grilli eds.), The New Transatlantic Economy, New York: Cambridge University Press.

Feldstein, Martin, and Charles Horioka (1980). Domestic Saving and International Capital Flows. *Economic Journal*. Vol. 90. (June) pp. 314-29.

Fishlow, Albert (1985). Lessons From the Past: Capital Markets During the 19th Century and the Inter-war Period. *International Organization*. 39. No. 3.

Flandreau, Marc (1998). Caveat Emptor: Dealing With Sovereign Risk in the Age of Globalization, 1871-1913. Ecole des Hautes Etudes en Sciences Sociale, Paris. (mimeo) April.

Flandreau, Marc; Jacques Le Cacheux and Frederic Zumer (1998). Stability Without a Pact? Lessons From the European Gold Standard, 1880-1914." *Economic Policy* Volume 26 (April) pp. 115-162.

Garbade, Kenneth D., and William L. Silber. Technology, Communication and the Performance of Financial Markets: 1840-1975." *Journal of Finance* Vol. XXXIII No. 1 (June) pp. 819-832.

Girton, Lance and Donald Roper (1997), "A Monetary Model of Exchange Market Pressure Applied to Postwar Canadian Experience," *American Economic Review 67,* pp. 537-48.

Glick, Reuven and Michael Hutchison (2000). "Hot Money or Signaling Bad Policy? Capital Controls and the Onset of Currency Crises." mimeo UC Santa Cruz.

Hatton, Timothy J. and Jeffrey G. Williamson (1992), "International Migration and World Development: A Historical Perspective," Harvard Institute of Economic Research Discussion Paper no. 1606 (August).

International Monetary Fund. *International Financial Statistics*. Various years.

International Monetary Fund (1998). *World Economic Outlook*. Washington D.C. (May).

Jones, Matthew T., and Maurice Obstfeld (1997). Saving, Investment, and Gold: A Reassessment of Historical Current Account Data. NBER Working Paper. No. 6103. July.

Klein, Michael and Giovannino Oliveo (1999) "Capital Account Liberalization, Financial Depth and Economic Growth." NBER Working Paper No. 7384, October.

Kregel, Jan (1994), Capital Flows: Globalization in Production and Financing Development *UNCTAD Review*.

Madden, John J. (1985), *British Investment in the United States*, 1860-1880, New York: Garland Publishing.

Marichal, Carlos (1989), *A Century of Latin American Debt Crises*, Princeton: Princeton University Press.

McKinnon, Ronald (2000a),"After the Crisis, the East Asian Dollar Standard Reserved: An Interpretation of High Frequency Exchange Rate Pegging." mimeo Stanford University.

McKinnon, Ronald (2000b), "On the Periphery of the International Dollar Standard: Canada Versus Latin America Vs East Asia." mimeo Stanford University.

Neal, Larry (1990). *The Rise of Financial Capitalism: International Capital Markets in the Age of Reason*. Cambridge: Cambridge University Press.

Neal, Larry (1998) "The Bank of England's First Return to Gold and the Stock Market Crisis of 1825," *Federal Reserve Bank of St. Louis Review*. Vol. 80, No. 3 May/June.

Nurkse, Ragnar (1944). *International Currency Experience*. Geneva: League of Nations.

Rourke, Kevin H., and Jeffrey G. Williamson (1999). *Globalization and History: the Evolution of a 19th Century Atlantic Economy*. Cambridge: MIT Press.

Obstfeld, Maurice (1995). International Capital Mobility in the 1990s. in Peter B. Kenen, ed. *Understanding Interdependence: The Macroeconomics of the Open Economy*. Princeton: Princeton University Press.

Obstfeld, Maurice, and Alan Taylor (1998). The Great Depression as a Watershed: International Capital Mobility over the Long-Run. in Michael D. Bordo, Claudia Goldin and Eugene N. White, eds. *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*. Chicago: University of Chicago Press. pp. 353-402.

Rodrik, Dani (1998), "The Debate Over Globalization: How to Move Forward by Looking Backward," in *Should the IMF Pursue Capital Account Convertibility?* Princeton International Finance Section, Essays in International Finance, No. 207, May, pp. 55-65.

Royal Institute of International Affairs (1937). *The Problem of International Investment*. London: Oxford University Press.

Sachs, Jeffrey and Andrew Warner (1995), "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity 1,* pp.1-118.

Snowden, Kenneth A. (1995). "The Evolution of Interregional Mortgage Lending Channels, 1870-1940: The Life Insurance-Mortgage Company Connection." In Naomi R. Lamoreaux and Daniel M.G. Raff, eds. *Coordination and Information: Historical Perspectives on the Organization of Enterprise.* Chicago: University of Chicago Press. pp. 209-246.

Sussman, Nathan and Yishay Yateh (1998). Institutions, Economic Growth, and Country Risk: Evidence from Japanese Government Debt in the Meiji Period. Jerusalem. Hebrew University (mimeo). February.

Taylor, Alan M. (1997). Argentina and the World Capital Market: Saving, Investment, and International Capital Mobility in the Twentieth Century. NBER Working Paper No. 6302. December.

Twomey, Michael J. (1998). Patterns of Foreign Investment in the Third World in the Twentieth Century. University of Michigan, Dearborn. (mimeo) March.

United Nations (1949). *International Capital Movements During the Inter-War Period*. Lake Success, NY.

Wilkins, Mira (1998). Conduits for Long-Term Investment in the Gold Standard Era. Florida International University. (mimeo) March.

Zevin, Robert (1992). Are World Financial Markets More Open? If So, Why and With What Effects? in Tariq Banuri and Juliet B. Schor, eds. *Financial Openness and National Autonomy*. Oxford: Clarendon Press. pp. 43-83.