CHAPTER 1

Institutional invention and innovation: foreign capital transfers and the evolution of the domestic capital markets in four frontier countries: Argentina, Australia, Canada, and the United States, 1865–1914

1-1. Introduction

1-1a. History and current events

No one believes that history repeats itself exactly, but many economic historians must have nodded knowingly when they opened their morning newspapers on February 27, 1995. On that day newspapers throughout the world reported that the House of Baring – one of the world's oldest private banks – had gone into bankruptcy. Over one hundred years earlier, in 1890, Barings had also teetered on the verge of bankruptcy.[1] The cases are remarkably similar. Not only did the two crises involve the same institution, but in both cases Barings was involved in financial operations in the less-developed world. In 1890 it was Latin America, particularly Argentina and Uruguay. One hundred and five years later the newspapers reported that Barings was a "strong niche player in the emerging markets of Asia, Latin America, Africa and Eastern Europe." Moreover, despite the passage of time and the growth in the size of the British economy, the magnitudes of the potential losses, then and now, are not dissimilar. In 1890, £17.25 million was sufficient to cover Barings potential liabilities; in today's dollars that figure amounts to just over $850 million. In 1995, if the press is to be believed, the funds required to save "the world's oldest private bank" fell in the $950 million to $1.27 billion range.[2]

[1] In 1890 the Bank of England was also one of the world's oldest private banks. It was nationalized at the end of World War II.

[2] The *Wall Street Journal* of February 27, 1995, reported initial losses of $950 million. It also reported that private banks had pledged $477 million, leaving between $473 million and $794 million for the Bank of England to cover.

What was different was the reaction of the managers of the Bank of England to the potential crisis. In 1890 the Bank had only recently assumed the mantle of a true lender of last resort; its Governor, William Lidderdale, reacted quickly to "invoke the aid and support of the financial community."[3] Support was immediately forthcoming: £6 million was pledged on the first day, and the total eventually reached £17.25 million. The action of the Bank of England, operating in concert with the London and provincial joint-stock banks, was entirely successful: "Before the difficulties of Barings were known to the general public, the severest potential dangers had been averted, and the resulting disturbance was confined strictly to London, while the eminent position of the famous firm was shortly restored."[4]

In 1995 the story begins in the same way. On the night of Thursday February 23, word leaked out that the House of Baring was in trouble. Eddie George, the Governor of the Bank of England, immediately flew back to London from a skiing vacation in Switzerland. An attempt, similar to the one executed a century before, was made to organize a bank-backed bailout. The endeavor met with initial success: Fourteen international banks pledged $477 million. Despite this response, on Sunday February 26, "the Bank of England threw in the towel . . . after crisis talks to finance a rescue plan failed over uncertainty about the extent of the losses."[5]

What explains the difference between the behavior of the Governors of the Bank of England in 1890 and 1995? In 1890 the Bank had just begun to act as a true central bank. Its management felt that, to achieve a commercial environment free of bank suspensions and failures, it was necessary that the Bank establish a reputation as a *reliable* lender of last resort. The action was successful, and for almost four decades there were no bank failures in the United Kingdom.

In 1995 circumstances were different. The Bank was *the* recognized lender of last resort – its reputation did not have to be reaffirmed – but a new problem had emerged. Although there had always been some speculative activity in the financial markets, the Governors of the Bank

[3] Speech of the Governor, William Lidderdale, at the Bank of England meeting, March 11, 1891. "The subsequent liquidation of Baring Brothers – including the personal fortunes of the Baring family – covered the firm's liabilities and freed the outsiders from having to pay. Barings was quickly reconstituted as a limited liability company." Richard S. Grossman, *The Journal of Commerce*, March 27, 1995.

[4] W.F. Crick and J.E. Wadsworth, *A Hundred Years of Joint Stock Banking*, 4th ed. (London: Hodder & Stoughton, 1964), p. 314.

[5] *Wall Street Journal*, February 27, 1995.

feared that a new and rapidly escalating speculative craze in derivatives would lead to worldwide financial instability. The cases of the International Bank of Credit and Commerce, Orange County, California, Proctor and Gamble, and Metallgesellschaft A.G. were all well known on Threadneedle Street. The Governors may have decided to discourage these lines of activity, rather than simply attempting to counter their effects.[6] If a message were to be sent to the financial community, Barings was the ideal candidate for the role of messenger. Unlike some other institutions, Barings was not too big to fail. In the words of one major U.S. banking executive, "If I were a central banker that's what I'd do. The central bankers need to put more discipline into the banking system. They are taking an opportunity here."[7] History does not repeat itself exactly, but a knowledge of history can illuminate the problems of the modern world.

1-1b. The formation of capital markets

As the recent experience of the Eastern Bloc countries has underscored, a modern market structure, unlike Athena, does not automatically spring full blown from the head of Zeus. Instead, it is almost always the result of an evolutionary process that often involves the invention and innovation of new institutional technologies. Capital markets are no exceptions. Furthermore, the process of invention and innovation in the financial sector may take longer and prove more difficult than in other, less complicated *product and factor markets*.

The principal problems that must be overcome in the creation of effective capital markets were ably enumerated by Frederick Lavington in 1921. Lavington did not use modern finance terms such as "reputational signals" and "asymmetric information," but he had a firm grip on the relevant ideas:

> It can hardly be doubted that the dominating characteristic of the market for negotiable securities – that which covers most of their incidents – lies in the fact that the value of the security, the commodity in which they deal, depends upon a set of present and future circumstances so complex that an adequate description can be made only in the light of expert knowledge. If, as in the wholesale market for sugar and coffee, buyers and sellers were usually equally expert, the pecu-

[6] "Noting that the bailout with financing from other institutions was nearly worked out, some bankers suggested that the Bank of England might have let Barings go under as a warning to other financial institutions around the world about the risk of derivatives and poor risk management." *Wall Street Journal*, February 27, 1995.

[7] *Wall Street Journal*, February 27, 1995.

> liarity would perhaps have no special significance; but in fact this is not so, for those whose business it is to buy and sell securities are often in contact with an unskilled and speculating public. Sellers have a more intimate knowledge of the commodity with which they deal than buyers, and this superior bargaining knowledge gives wide scope for deception. In the market for new securities this enables the company promoter to sell worthless securities to the public; in that for old securities, the Stock Exchange, it enables the speculator with inside knowledge to draw abnormal profits by dealing with investors less well informed than himself. When the new issue consists of the stocks and bonds of a reputable State or well secured bonds of a sound American railway, public knowledge of the reputation of the borrower, or of the prospects of the undertaking, may be sufficient to yield a fair estimate of their true value; bargaining knowledge is fairly equal, and the marketing agency cannot obtain excessive profits at the expense of the public. It happens too that the natural safeguard accompanying the sale of these securities is supplemented by a further safeguard arising from the circumstances that their sale is frequently effected by first-class firms whose reputations and profit are dependent on fair dealing. In the multitude of securities of more dubious value where the safeguard of public knowledge does not exist, protection of such middlemen is in general also lacking, so that the principal limitation to deceptions lies in the advisory organization of the market – the investment broker and financial press – and the legal enactments devised to secure the publication of essential particulars necessary to form a sound judgment of the securities in question.[8]

Although capital markets developed over hundreds of years, the period between the end of the American Civil War and the outbreak of World War I was particularly important to the evolution of international finance. Those decades saw a tendency toward convergence of interest rates based on the spread of the international gold standard and the evolution of the international capital market to a near-modern level. The institutional structures of domestic capital markets, however, ranged from primitive to modern.

The economic environment (governmental, private, or some mix of the two) and the particular set of financial institutions that evolved in each country were certainly influenced by economic and political considerations. Those considerations ranged from the policies of governments (both past and present) to the experiences of local businessmen to the preferences of consumers. Environments and institutions were, however, also influenced by the availability of foreign finance. To the extent that

[8] Frederick Lavington, *The English Capital Market* (London: Methuen, 1921), pp. 191–2 [Hereafter cited as Lavington, *The English Capital Market*].

there are differences in relative prices, or if the preferences and incomes of foreign suppliers are not identical to those of domestic savers, substantial gains can be realized from international capital movements. The extent of the capital flow and its effects will be influenced by the character of the economic environment and of the set of existing institutions, but the flows themselves will affect both the environment and the timing, the trajectory, and the final structure of the emerging capital market institutions.

Although scholars still debate the extent of foreign involvement, in the eighteenth century Britain certainly drew some of the capital required to finance its industrial revolution from the Continent, particularly from Holland.[9] By the middle decades of the next century, the investments in commercialization and industrialization had paid off. Britain had become the most highly developed economy in the world, and British domestic savings had begun to flow abroad in increasing volume. Over the years 1870–1914 about one-third of all British savings was directed overseas, and Britain dominated international finance. Thus, the preferences of British savers and the relative prices prevailing in the British capital markets had major consequences for developing economies.

About one-half of British overseas finance found its way to four developing countries: Argentina, Australia, Canada, and the United States. Although they were at different stages of development in the late nineteenth century, all four were frontier countries whose economic future, in large part, depended on their ability to bring new lands and resources within the scope of the market. To accomplish that end it was necessary to invest in transport, mining, land development, agriculture, agricultural and mineral processing, and a myriad of services and products that were designed to support frontier development.

In all four countries, much of the required investment was destined for activities located well away from the existing centers of domestic economic activity: Buenos Aires in Argentina, Melbourne and Sydney in Australia, Toronto and Montreal in Canada, and the New England, Middle Atlantic, South Atlantic, and East North Central regions in the United States. In each case, although government and railroads absorbed

[9] See, for example, Elise S. Brezis, "Foreign Capital Flows in the Century of Britain's Industrial Revolution: New Estimates, Controlled Conjunctures," *The Economic History Review*, Vol. 48, No. 1 (February 1995), pp. 46–67. J.F. Wright, "The Contribution of Overseas Savings to the Funded National Debt of Great Britain, 1750–1815," *The Economic History Review*, Vol. 50, No. 4 (November 1997), pp. 657–71.

the largest volumes of capital, a significant proportion of the demand for finance originated in new industries. The variety of the industries that were supported by British finance suggests something of the development of the international capital market. For example, in the United States the new demands ranged from mining the porphyry copper ores in the West to milling winter wheat in the upper Midwest to producing open hearth steel in Pittsburgh. In Canada they included the finance required to innovate new processes designed to turn the forests into newsprint as well as the resources needed to build manufacturing plants to operate behind the newly erected tariff barriers. In Argentina there were opportunities to exploit the new refrigeration technology that made it possible to export chilled and frozen beef. In Australia entrepreneurs even discovered that the weather and temperature were ideal for producing wine.

During the half century leading up to World War I, all four of the countries appear to have been successful in exploiting their frontier positions, if success is measured by the usual economic indicators. In each country real gross output rose, and although a part of that increase was absorbed by increases in population – a requirement for growth in any frontier economy – real output per capita rose as well (see Table 1:1-1). For Argentina, Canada, and the United States, despite rates of population growth that ranged from 1.7 to 3.7 percent a year, the increase in real income per capita averaged about 2 percent. Those figures stand in marked contrast to the 1.4 percent that Angus Maddison found for the average of fourteen industrialized countries over the same period of time.[10] Even Australia, a country with very high income at the beginning of the period, probably enjoyed an increase of real per capita GDP in excess of 0.5 percent a year.[11]

Such rates of increase of output per capita, when coupled with rates of population growth of 3.4 percent for Argentina, 2.5 percent for Australia, 2.1 percent for the United States, and 1.8 percent for Canada, suggest that there must have been a very rapid increase in the rate of new capital formation. If, for example, the capital/output ratio was stable

[10] Angus Maddison, *Phases of Capitalist Development* (Oxford: Oxford University Press, 1982), pp. 44–5 [Hereafter cited as Maddison, *Capitalist Development*].

[11] Throughout this book Australia is often called a country, despite the fact that the six colonies did not join to become the Commonwealth until 1901. Similarly, although the six colonies did not become states until after Federation, they will often be referred to as states. Through most of the period, although all had responsible government for at least some part of the time, the six states – Victoria, New South Wales, South Australia, Queensland, Western Australia, and Tasmania – operated largely independently.

Table 1:1-1. *Rates of growth 1870–1914 (percent per year)*

	Real Gross Output		Population		Real Output per capita	
	(1)	(2)	(1)	(2)	(1)	(2)
Argentina[a]	5.75%	n.d.	3.41%	3.81%	2.27%	3.40%
Australia	3.19	3.24%	2.48	2.55	0.69	0.48
Canada	3.71	4.64	1.78	1.67	1.90	2.59
United States[b]	3.70	4.61	2.09	2.17	1.58	1.90

Notes: (1) Rates are calculated between actual beginning and end points.
(2) Rates are calculated from beginning and end points estimated from a linear regression.

[a] Argentina 1875–1914.

[b] United States 1909–1914 by extrapolation.

Sources: Argentina: Roberto Cortes Conde, "Estimaciones del PBI en la Argentina, 1875–1935," Universidad de San Andres, Ciclo de Seminarios, 1994, Departamento de Economia. Australia: Noel G. Butlin, *Australian Domestic Product, Investment, and Foreign Borrowing, 1861–1938/39* (Cambridge: Cambridge University Press, 1962), table 1, pp. 6–7, table 269, pp. 460–1. Canada: M.C. Urquhart, *Gross National Product, Canada, 1870–1926*: *The Derivation of the Estimates* (Montreal: McGill-Queens University Press, 1993), table 1.6, pp. 24–25. United States: Robert Gallman, private communication, March 25, 1994.

at 3.0 – and given heavy investment in housing, railroads, and other structures, it may have been higher – an investment rate of between 5.4 and 10.2 percent was needed just to prevent per capita income from declining.[12]

Initially, all four of the frontier countries depended on Europe – particularly on Great Britain – for some fraction of their capital requirements. For the United States, domestic savings rates were high as early as the 1870s. As a result, although in some periods and some industries the import of foreign capital was both substantial and important, the overall fraction was not great, but for the other three countries, it was very large. Gradually, in two of the remaining three cases, as in the United States, domestic savings assumed a larger share of the task of

[12] These conditions were not met in all four cases. The Argentine capital/output ratio seems to have fallen. See Chapter 6 for a description of the record and a discussion of its significance.

underwriting domestic investment. The interaction between the inflow of foreign savings and the gradual evolution of domestic financial institutions, however, played out quite differently in each of the four. As a result, the final equilibriums were very different. A comparison of the four histories provides some insights into the questions of institutional change and of financial innovation, and it offers some clues about current issues of public and private policy.

1-2. Capital accumulation and mobilization

Investment requires that someone save, and if the full benefits of savings are to be realized, that those savings be invested in activities yielding the highest returns. In settler countries such activities are often located at the frontier, and they frequently involve new firms in new industries. The savings can be either domestic or foreign, but they tend to be generated by well-settled regions and well-established industries. Thus, according to M.M. Postan, there are two distinct problems: capital accumulation and capital mobilization.[13]

The savings decision can be voluntary or involuntary – the former the product of the voluntary decisions of consumers or firms, and the latter the result of government taxes or inflation engendered either by the government or by the commercial banks. The mobilization process can be based on either direct government fiat or on private individuals interacting through a structure of financial intermediaries and formal securities markets. The composition and nature of those intermediaries depends in turn on the state of institutional technology and the nature of the public, private, or public–private decisions that led to their innovation.

If government fiat is the model of choice, economically efficient mobilization requires not only that the new institutional arrangement be put in place, but also that economic growth must carry a very large weight in the politicians' utility functions. If either the private or the public–private partnership route is chosen, the appropriate institutional structure may have to be invented, and it has to be innovated. In addition, whether the structure is the product of public, private, or public–private decisions, its operation will very likely be constrained by governmental rules and regulations. Those rules and regulations may well reflect non-economic political goals. Moreover, even if there is no legal coercion and participation is voluntary, the savers must

[13] M.M. Postan, "Some Recent Problems in the Accumulation of Capital," *Economic History Review*, Vol. 6, No. 1 (October 1935), pp. 1–12 [Hereafter cited as Postan, "Some Recent Problems"].

still be educated to use the facilities offered by the new structure. The new institutions, although in part the product of the domestic environment, are also in part the product of the type and availability of foreign finance. There are numerous examples of the impact of British finance on the structures of the domestic capital markets in the four countries, but at this point, for purposes of illustration, let us touch on only four.

First, the demand of Canadian cities for capital to underwrite local infrastructure coupled with the bias of British savers in favor of investment in railroads and federal and provincial debt placed a premium on a domestic institutional structure that could channel savings into the issues of local governments. The result was the innovation, growth, and ultimate dominance of the bond house, an institution initially designed to direct domestic savings toward municipal finance, but that later became a channel to direct those savings into commercial and industrial enterprise. The bond house had no exact institutional counterpart in any of the other three countries.

Second, in the case of the United States, initially each of seven great London international banking houses recruited a junior American partner to help it funnel British savings into U.S. railroad construction.[14] At the time they were organized, those American firms, although also operating in the domestic capital market, devoted the majority of their efforts to providing local intelligence to help their London partners overcome the substantial informational asymmetries that existed and to handling a few administrative details. Gradually, capitalizing on their evolving reputations, the American firms began to operate independently. By the 1880s their attention had largely turned to the mobilization of domestic capital. The role those funds played in U.S. railroad finance had become at least as important as that of their European parents, and the role they later played in commercial and industrial finance was much greater.

Third, in Australia the local environment produced a different result. British investors had long shown a preference for Australian government issues, and when debentures were replaced by inscribed stock, a flood of

[14] There was also one major German connection. The seven London firms and their American junior partners were J.S. Morgan (Drexel Morgan), Brown Shipley (Brown Brothers), Morton, Rose (Morton Bliss), Baring Brothers (first T.W. Ward, then his two sons, and finally two firms: Baring Mougon in New York and Kidder Peabody in Boston), N.M. Rothschild (August Belmont & Company), Seligman Brothers (J&W Seligman), and Speyer Brothers (Phillip Speyer and Co.).

British capital flowed into Australia.[15] Since the colonial governments could raise funds cheaply, it was the public sector that benefited. State governments undertook the construction and operation of a myriad of economic activities – activities that ranged from railroads to agricultural finance and activities that in other countries were often carried out by private enterprise. As a result, there were few economic incentives for innovation in the private financial sector (either domestic or international). Institutional innovation is almost always slow and incremental, and in the absence of an efficient private institutional structure the range of government enterprise continued to expand. Thus, in part as a result of the preferences of British savers in the nineteenth century, as late as the 1940s the structure of Australian private domestic financial institutions remained relatively undeveloped.

Finally, in Argentina British investors mistrusted the private sector, and a very large fraction of British investment took the form of direct transfers to firms owned and managed by the British themselves. That ownership structure, coupled with the relatively low rate of Argentine domestic savings, meant that there were few profits to be earned from domestic financial innovation. By 1914 the financial infrastructure was far more primitive than the level of economic development alone would have indicated.

Although it is theoretically possible for a country to grow and develop with foreign capital alone, there is no evidence that any country has actually done so. The nations that successfully underwent commercialization or industrialization in the nineteenth and twentieth centuries have been marked by an increase in the domestic savings rate. The histories of three of the four frontier countries conform to that generalization. Although there is evidence that in some developing countries the increase in the savings rate during the late nineteenth century was based on involuntary decisions – through taxation in Russia and bank-engendered inflation in Germany, to cite two often-used examples – there is little evidence that such involuntary coercive policies played an important role in any of the frontier four.[16]

[15] Between 1874 and 1893 the four colonies of New South Wales, Victoria, South Australia, and Queensland raised (net) £136,350,000 ($664,024,500) on the British market.

[16] There may be some evidence for Argentina in the years before 1899. Carlos F. Diaz Alejandro, *Essays on the Economic History of the Argentine Republic*, Economic Growth Center, Yale University (New Haven, Conn.: Yale University Press, 1970), pp. 295–6 (especially fn. 31) [Hereafter cited as Diaz Alejandro, *Essays*].