

POLICY RESEARCH WORKING PAPER

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Regulation and Bank Stability

Canada and the United States, 1870–1980

Michael Bordo

Three lessons for developing and transition economies from a historical comparison of U.S. and Canadian banking. First, restricting nationwide branch banking is a mistake. Second, the benefits of long-run stability and efficiency outweigh the cost of concentrated economic power. Third, efficiency can be promoted by permitting competition from foreign banking systems as well as domestic and foreign nonbank financial intermediaries.

The World Bank
Policy Research Department
Finance and Private Sector Development Division
and
Financial Sector Development Department
November 1995



Summary findings

Canada and the United States are probably as similar as any two countries in the world, but they have always had very different banking systems.

The United States has by and large had a unit banking system, although many states allow branch banking or limited branch banking. Until 1994, when Congress lifted prohibitions on interstate branch banking, the practice was not allowed nationwide and in many states. As a result, there were many small banks. Canada — a much smaller country (except geographically) — has always had unlimited branching and in this century a few very large nationwide banks emerged. (Both systems are different from European universal banking.)

If one system performs better than the other (in terms of stability and efficiency), Bordo contends that that is because of the regulatory system. The United States has a long history of reserve requirements, which Canada didn't mandate until the 1930s. Capital ratios have been much higher in Canada than in the United States, and Canada requires new banks to obtain a charter — a difficult task until 1967.

The United States is moving toward eliminating the barriers to interstate branching. Bordo believes that once the forces of competition are unleashed, U.S. banking will follow a route similar to that taken earlier by Canada and earlier yet by the United Kingdom. During the merger, mistakes will be made and large institutions may become insolvent. The monetary authorities must then act to protect the payment system at large, but it would be unwise to truncate the evolutionary process with new restrictions. Big failures will inspire a movement to reregulate the system, as in the airline industry. And provisions must be available to protect small depositors from loss. Problems with the current system of deposit insurance suggest that other solutions may be required.

Canada's banking system may be both more stable and more efficient than the U.S. banking system, says Bordo, but the United States has compensated by developing more open and deep capital markets.

This paper — a joint product of the Finance and Private Sector Development Division, Policy Research Department, and the Financial Sector Development Department — was presented at a Bank seminar, "Financial History: Lessons of the Past for Reformers of the Present," and is a chapter in a forthcoming volume, *Reforming Finance: Some Lessons from History*, edited by Gerard Caprio, Jr. and Dimitri Vittas. Copies of this paper are available free from the World Bank, 1818 H Street NW, Washington, DC 20433. Please contact Daniele Evans, room N9-061, telephone 202-473-8526, fax 202-522-1955, Internet address pinfo@worldbank.org. November 1995. (27 pages)

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Regulation and Bank Stability: Canada and the United States, 1870-1980

by

Michael Bordo

This paper was presented at a World Bank Seminar, "Financial History: Lessons of the Past for Reformers of the Present," and is a chapter in a forthcoming volume, Reforming Finance: Some Lessons from History, edited by Gerard Caprio, Jr. and Dimitri Vittas. The author wishes to thank the participants at that seminar and the editors for their comments.

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This paper compares the banking systems in Canada and the United States between 1870 and 1980.¹⁷ The comparison is interesting to policymakers, economic historians, and macroeconomists because it presents two countries that have much in common—comparable levels of economic development and similar cultural, political, and social traditions. But although Canada and the United States are probably as similar as any two countries in the world, one important difference persists: they have and always have had very different banking systems.

Throughout its history the United States has had, by and large, a unit banking system. True, many states allow branch banking or limited branch banking. But until 1994, when the U.S. Congress removed the prohibitions on interstate branch banking, the practice was prohibited nationwide and within many states. This prohibition led to a system characterized by a large number of small banks. In 1990 there were about 12,000 banks, perhaps the largest number of any country, and there were as many as 30,000 banks in the early part of the century.

Compare this system with that of Canada. Canada is a much smaller country—approximately one-tenth or one-eleventh the size of the United States in every dimension (except geographically). And Canada has always had unlimited branching. As a result a small number of very large nationwide banks emerged in this century. From 1920 until 1980 there were approximately eleven. But other differences persist as well. The countries' regulatory systems differ: the United States has had a long tradition of

¹⁷ This research was carried out with Angela Redish and Hugh Rockoff. See Bordo, Redish, and Rockoff (1994); Bordo, Redish, and Rockoff (1995); and Bordo, Redish, and Rockoff (1996).

reserve requirements, whereas Canada did not mandate these until the 1930s. In addition, capital requirements have been much higher in Canada than in the United States, and Canada requires new banks to obtain a charter—a difficult task until 1967.

A Formal Comparison

In this paper we review two pieces of research related to the banking systems in Canada and the United States that are of great importance for developing and transition economies. The first focuses on the years from 1920 to 1980, the period during which the two banking systems had the greatest contrast. Between 1920 and 1980 Canada had only eleven banks and the structure of the banking market changed very little. In the United States the dual banking system—of state and national banks—had been operative for about fifty years. The period under study ends in 1980, a year in which major changes in banking regulations in both countries began breaking down their regulatory differences. In the United States barriers to branching began to crumble, while in Canada barriers to competition from near banks and foreign banks were reduced.

If our comparison shows that one banking system performs better (as defined below) than the other, we argue that the cause resides with the regulatory system rather than with another part of the economic and social environment.

The second study focuses on Canada's first fifty years, from 1870 to 1920. We want to determine if our conclusions about banking in the twentieth century hold up in the nineteenth century. In this fifty-year period the Canadian banking system was evolving from a more primitive state, having a larger number of banks, while the U.S. banking system was not that different from the one prevailing in 1920. Lessons from Canada's early experience are very relevant to developing or newly emerging countries

because in the early part of the century Canada was still a developing country. In fact, both the United States and Canada trailed far behind Western Europe.²

For both periods we compare the stability and efficiency of the two systems, measuring stability by the incidence of bank failures and efficiency by the rate of return on equity. We held a prior belief that the Canadian system would prove to be more stable than the U.S. system, but less efficient. This belief was based on the fact that the Canadian banking industry has long been viewed as a highly concentrated oligopoly. Instead, we found that in the later period (1920-1980) the Canadian system was superior to that of the United States according to both criteria, whereas in the nineteenth century the U.S. system was more stable and just as efficient.

The Canadian system was superior in the twentieth century because of the stability afforded by branch banking—the ability to diversify portfolios across regions. This ability allowed Canadian banks to hold more profitable portfolios than their U.S. counterparts. But in the earlier period the Canadian system suffered major bank failures and earned no higher return to equity than the U.S. system. Why? We argue that the Canadian system was undergoing a transition in which the competitive forces of free entry and the absence of barriers to branching led to substantial losses before reaching (on the eve of World War I) a stable equilibrium.

Stability and Efficiency: 1920-1980

For 1920-1980 we compared the Canadian chartered banks and the U.S. national banks.³ The U.S. national banks were closer in size and function to Canadian banks than were U.S. nonnational banks—state banks and private banks—which tended to be smaller and have lower capital requirements.

². While both countries were intensive producers of primary commodities, Canada lagged the United States with respect to industrialization.

First, consider the data on stability. Between 1920 and 1980 only one major Canadian bank failed, the Home Bank in Winnipeg. It failed in 1923, holding \$2.5 million of capital, more than 1 percent of total bank capital at the time. But this lone failure, although not small, was insignificant compared with those in the United States. The percentage of capital held by insolvent national banks was much larger in the United States, where a considerable number of banks failed in the 1920s, and one-third of all banks (not only national banks) failed during the Great Depression (figure 4.1). We argue that the difference between the performances of the two systems can be explained by the advantages of nationwide branching, a system that allows banks to diversify their portfolios across regions.

Our results on efficiency were very surprising. The popular assumption held that oligopolistic banks would charge higher interest on loans, pay lower interest on deposits, and generally be less efficient than those functioning in a more competitive system. Examining the data over the whole period (ignoring some of the differences within periods), we observe that the rate of interest paid on deposits is higher in Canada than in the United States, and the rates charged on loans are very similar (figures 4.2 and 4.3). The rates of return on securities portfolios of the two banking systems were also not very different. But this result is not surprising because the securities held by the banks in both countries are typically traded in highly competitive domestic and international markets, so arbitrage can be expected to iron away any differences. It was even difficult to detect a country risk premium. Thus the evidence produced in this comparison seemed to go against our original priors.

We then turned to the bottom line and compared the net rate of return on equity in the two countries, and found a striking result (figure 4.4). Except for in the late 1950s and 1960s, Canadian rates of return to equity were generally higher than the rates in the United States. This finding revealed a

³. See Bordo, Redish, and Rockoff (1994, 1995).

paradox. Although there is very little evidence of monopoly power in the Canadian loan and deposit markets compared with U.S. markets, Canadian banks generally earned higher net returns on equity than U.S. banks. And this difference did not appear to have anything to do with the interest rates.

To explain this result we examined the balance sheets of the two banking systems. The rate of return on equity depends on the interest rate on deposits, loans, and securities and on four balance sheet ratios: the asset-capital ratio, the loan-asset ratio, the securities-asset ratio, and the deposit-asset ratio.⁴

To see how much of the difference in the rates of return on equity could be explained by prices and how much could be explained by the balance sheet, we constructed two counterfactual measures. First, we calculated what the gap between the rates of return on equity would be if we imposed Canadian interest rates on the U.S. data and if we imposed Canadian balance sheet ratios on U.S. data. We called the first gap the price gap and the second gap the balance sheet gap. The results are striking. The balance sheet gaps greatly favor the Canadian banks (figure 4.5). That is, if the U.S. banking system had used the same balance sheet ratios as Canadian banks, it would have had a much higher rate of return on equity because Canadian banks had much higher loan-asset ratios. They also had much higher leverage ratios (asset-capital ratios) than their U.S. counterparts (table 4.1).

When we imposed the Canadian interest rates on the U.S. balance sheet, the opposite picture emerged—the price gap favored the United States. What may really be going on, then, is that the balance

⁴. The rate of return on equity is determined according to:

$$ROE = (A/K)[rl(L/A) + rs(S/A) - rd(D/A) - x],$$

where ROE is the rate of return on equity, A is total assets, K is total equity, rl is the rate of return on loans, rs is the rate of return on securities, L is total loans, S is total securities, rd is the rate paid on deposits, D is total deposits, and x is the residual costs and earnings per dollar of assets.

sheet gap outweighs the price gap and explains much of the difference between the rates of return on equity.

We offer three explanations for the persistent difference in the countries' portfolios. First, regulatory differences affected the portfolios: the United States had higher reserve requirements than Canada. This gap may be related to stability in that U.S. regulations (reserve requirements) were imposed to counter instability. The second argument, the standard argument, holds that a large nationwide branching system is able to take advantage of economies of scale and scope. Although this explanation is plausible, a wealth of evidence suggests that it may not be that important—a banking system or an individual bank need not be that big to take advantage of economies of scale.⁵

We arrive at the third explanation: the low risk of failure in Canada might have made it possible for the Canadian banks to hold smaller amounts of non-interest bearing assets and to arrive at higher asset-equity ratios. In other words, because the Canadian banking system was stable, banks did not have to maintain high liquidity ratios to convince the public that the banking system was stable. External regulations were unnecessary; the banking system became stable endogenously. We believe that this factor was the most important. By reducing the threat of failure, branch banking allowed banks to maintain low reserve ratios and to increase leverage without alarming their customers or provoking regulatory restrictions. The difference in rates of return might have been a return to the unmeasured component of the capital of Canadian banks, a return on their reputation for soundness.

Stability and Efficiency: 1870-1920

⁵. See Boyd and Graham (1992).

Having reached this conclusion for performance in the twentieth century, now let us look back to the period from 1870 to 1920.⁶ Do the same the results hold? In the earlier period both countries were still developing, and Canada's banking system was moving from a large number of banks—about fifty—toward its twentieth century equilibrium—eleven. By 1870 the U.S. banking system was already set in its twentieth century mode, a dual and unit banking system in which state and national banks were governed by state and federal regulatory agencies.

In the second study we compared the two systems based, again, on stability and efficiency. But we obtained different results. The Canadian system was neither more stable nor more efficient than its U.S. counterpart—the twentieth century results did not hold up.

First, we turn to the evidence on stability. We compared deposit losses as a fraction of all deposits from 1868 to 1920 for U.S. national banks and all Canadian banks. U.S. national banks incurred losses in virtually every year whereas Canadian banks operated through long stretches without any losses (figure 4.6). But when failures did occur in Canada, they often included much larger fractions of total deposits than were seen in the United States.

Because this result may have reflected our focus on the national banks, we compared Canadian banks with all U.S. banks (figure 4.7). The picture that emerged is somewhat different. Nonnational banks, mainly small state banks, had a considerably higher loss ratio than both the national banks and the Canadian banks, and thus on balance the Canadian banks had a lower loss ratio than U.S. banks. Breaking the data down into subperiods, we see that the Canadian banking system enjoyed greater overall stability, but between 1880 and 1900 Canada's losses were larger than those of the United States (table 4.2).

⁶. See Bordo, Redish, and Rockoff (1996).

However, a closer look at the data reveals an important difference between the two countries. Many of the big losses in the United States were concentrated around banking panics—in 1873, 1893, and 1907. During these crises the public would attempt to convert their deposits into currency, spreading a fear across the whole banking system that banks might fail and depositors would lose their money. This contagion effect led to the failure of otherwise sound banks. Each crisis was ended by a citywide or nationwide decree freeing banks from having to redeem their deposits into currency.

None of these crises occurred in Canada. Moreover, all of these episodes occurred during international business cycle contractions. Canada was not spared the contractions, but because it didn't have the banking panics, real output in Canada did not fall as much as in the United States. This fact suggests that, although the U.S. banking system was nominally more stable than the Canadian system, a true measure of instability, which accounts for the effect of banking crises on the real economy, reveals the opposite.

Explaining the Experiences in Canada and the United States

The different experiences of the two countries may be explained in part by the prohibition of branch banking in the United States and the resultant inability to absorb major shocks without massive bank failures. Indeed, the great strength of the Canadian banks was their ability to absorb regional shocks, such as the declines in wheat prices that hurt both western Canada and the United States in the 1880s and 1920s. They were able to absorb shocks because of their ability to offset losses in one region with gains in another and then transfer reserves from the head office in Toronto or Montreal to losing branches. Even Canadian banks that didn't have nationwide branches were still partly protected from regional shocks by the merger market for banks. If a regional shock imposed heavy short-term losses in one part

of the country, a small bank could seek a merger with a larger bank that had branches throughout the country.⁷

In the United States, by contrast, banks faced two constraints. First, unit banks were not able to diversify their portfolios across regions or more easily obtain funds from outside the region. And second, the laws that prohibited branching prevented the development of an interregional and in many cases an interstate or intrastate market for distressed banks. There was no market mechanism to deal with the problems associated with local shocks. Moreover, in the face of an external shock that affected the whole economy (such as a gold drain from the banks in New York or Montreal induced by a withdrawal of foreign capital), the Canadian system of branching, by allowing the quick pooling of bank reserves nationwide, was superior to the U.S. unit bank system, which had a regional correspondence network.⁸

Unlike the Canadian system, in the U.S. national banking system, under what was called the inverted pyramid of credit, national banks would hold a sizable fraction of their reserves in large national reserve city banks in New York City. These city banks would in turn hold their reserves in the call loan market, and the call loans were used to finance the stock market.⁹ If a major shock hit (such as a stock market crash at home or abroad), regional banks would have difficulty repatriating reserves from the central reserve city banks, which were liquidity-constrained, having invested the funds in the stock

⁷. See Carr, Mathewson, and Quigley (1994).

⁸. It would be an oversimplification to say that the banks in the United States were islands unto themselves. They had interregional correspondence networks, where they held deposits with banks in different cities, which they could obtain quickly. They could also receive loans from these other banks.

⁹. See Bordo, Rappoport, and Schwartz (1992).

market. Thus U.S. national banks would not be able to access their network as a branch of the Canadian bank would be able to access its head office.¹⁰

But not all of the financial instability in the United States can be blamed on limited branching. There was also an ongoing debate over cheap money, particularly silver. The threat that the silver forces would gain the upper hand and take the United States off the gold standard, by undermining expectations, may have contributed to the crisis of 1893.

A related problem concerned the function of lender of last resort. Canadian banks may have been more successful in avoiding crises because they had a better lender of last resort. However, neither country had a central bank. The Federal Reserve was not established until 1914, and Canada set up the Finance Act—a liberal discount facility—in 1914 and founded the Bank of Canada only in 1935. But during the period in question neither country had formal lender of last resort mechanisms. Thus this explanation does not seem plausible, although one could argue that an incipient panic was averted in 1907 after the government of Canada stepped in and provided assistance to the chartered banks.

Explaining the Different Experiences in Canada

A central question remains—what explains the relative instability in Canadian banking before 1920? Two factors were at work. First, most of the failures were a result of fraud and mismanagement. Also, because Canadian banks had more freedom to expand than U.S. banks, the failure of a Canadian bank affected a larger fraction of the total system. The second reason, related to the first, is the birth of the merger movement. The Canadian Bank Act was revised in 1900, allowing banks to acquire the assets of other banks without an act of Parliament. Merging became much easier. Consequently, many large banks

¹⁰. That these shocks—sometimes mild but occasionally quite severe—often stemmed from some foreign disturbance should serve as a reminder that the 1994-95 Mexican crisis had ample historical precedence.

acquired smaller banks and their branching networks. The number of banks declined from approximately thirty in 1900 to eleven in 1920, making the banking system very concentrated very quickly. Several measures reveal a huge increase in concentration between 1895 and 1920 (table 4.3). Also, in 1895 the share of the top ten banks in Canada was about six times as great as the share of the top ten banks in the United States. Thus although the Canadian banking system was always more concentrated than the U.S. banking system, it became even more concentrated just after the turn of the century.

In the merger process some banks made mistakes and incurred very big losses. Mistakes were easy to make: a bank would acquire another bank with a branch network in another part of the country without obtaining full information on the riskiness of its portfolio. And when mistakes were made, the failure would be substantial, representing, for example, 2 percent of total bank assets. This process of consolidation, with occasional failures, continued in Canada until 1920.

The merger movement, by reducing the system to a small number of very large banks, may explain the absence of bank failures after 1923. Contributing to stability was the Canadian banks' promotion pyramid within the large nationwide branch networks. The pyramid was very difficult to scale. Incompetent managers were weeded out before they reached senior management, where their decisions could have endangered the entire institution. The large chartered banks hired young men after graduation from high school and assigned them to minor branches in different regions of Canada. Those that did well would be given larger branches to manage, and after a number of years would be brought back to the head office in Montreal or Toronto. After years of service they would eventually be given major responsibilities. In this way the banks developed a core of managers who felt they owed all of their professional success to their bank and who responded with institutional loyalty. The chartered banks also had a very sophisticated system, replete with fail-safe devices, to audit and control their branches, making it very difficult for individuals to do much damage.

Although we did not have sufficient data to directly compare the rates of return on deposits and loans in the two countries during 1870-1920, we were able to construct a fairly crude measure of the rate of return on equity (figure 4.8). This rate was no higher in Canada than in the United States. Moreover, although the loan-asset ratio was higher in Canada than in the United States (again this reflects lower reserve requirements—in fact Canada had no reserve requirements, just a voluntary reserve ratio) and the securities-asset ratio higher in the United States (reflecting the bond security provision of the national banking system), Canada's debt-equity ratio was lower.

This evidence suggests that a lengthy and painful transition was required before the Canadian system reached a state of equilibrium (in the 1920s). At that point it was able to take advantage of its stability and create a more efficient portfolio (raise its debt-equity ratio). The United States, on the other hand, hobbled by its restrictions on branching, could not follow the same path (table 4.4).

Policy Implications

The key lesson coming from our research is that, for the Canadian banking system, the transition process from a system of many small banks to the nationwide banking system was crucial. This process was retracted, protracted, and at times losses from bank failures were very heavy. On some occasions imprudent entrepreneurs took advantage of the freedom to branch and merge and expanded their institution too rapidly. But judging from the contrast between Canadian and U.S. banking, once a stable system was reached in Canada, it would have been a mistake to try to reverse the consolidation process, as some suggested, in response to the huge failures.

The Canadian banking experience reveals that once an industrywide equilibrium is achieved, it enjoys both stability and efficiency. But a note of caution should be made. The experience of the United Kingdom suggests that the outcome could have been different. In the United Kingdom, once the merger

movement slowed (by World War I), the big five banks formed a cartel with the government's tacit assistance. According to Capie (1995) and Hannah (1995) the system became very inefficient. Protected by exchange and capital controls and legal restrictions on competition from other financial intermediaries, only a major change in legislation in 1971 (the Competition and Credit Control Act) and the removal of external exchange controls rectified the situation.

We can speculate that the Canadian banking system did not go the British route because of less-intrusive government intervention and the proximity of competition—the U.S. financial system, which was not restricted by extensive controls on capital movements. This is not to say that the comparison between the systems in the United States and Canada is interesting only because it compares branch and unit banking. Other variables were held constant. A comparison could be made between the U.S. and U.K. systems, revealing the U.K. banks to be less efficient.

These historical comparisons relate two messages for contemporary policy. The first is for the United States. Currently, the United States is moving toward eliminating the barriers to interstate branching. Once the forces of competition are unleashed, we believe that the U.S. banking system will follow a route similar to that taken in Canada during the early twentieth century and in the United Kingdom somewhat earlier. During the merger process mistakes will be made and large institutions may become insolvent. The monetary authorities must then act to protect the payment system at large. But it would be unwise to truncate the evolutionary process with new restrictions. Big failures will inspire a movement to reregulate the system, just as has been the case recently in the airline industry. Also, provisions will have to be available to protect small depositors from loss. Although the current system of deposit insurance does accomplish this, problems with the insurance system suggest that other solutions may be required.

What sort of lessons can we pass on to transition economies and developing countries? One conclusion is that restricting nationwide branch banking is a mistake: the benefits of long-run stability and efficiency outweigh the cost of concentrated economic power. Efficiency can be promoted by permitting competition from foreign banking systems as well as domestic and foreign nonbank financial intermediaries. As in Canada, it may take time to develop extensive branch networks. Some of the former Soviet republics and other transition economies have inherited a unit banking system, which was designed to finance particular functions of the economy, for particular sectors, and in certain regions. It might take time to move from these unit banks to a nationwide branch banking system. Institutions should be encouraged to develop correspondent networks and ultimately to branch their networks. Advisers should encourage these countries to move in the direction of the Canadian system, also the system of many other successful countries.

As a final note, the conclusion that the Canadian banking system was both more stable and more efficient than the U.S. system raises a much broader issue: which system is better for economic development? On the one hand the branch banking system had greater lending capacity than did the unit or restrictive banking system. But one could then argue—as Richard Sylla suggests in chapter 11—that the United States substituted for this deficiency by developing more open and deep capital markets. Capital markets in the United States are broader and deeper than those in almost any other country. So perhaps U.S. citizens received something in exchange. In addition, both the Canadian system and the U.S. system have advantages and disadvantages compared with the European universal banking system (see chapter 7 in this volume). Each banking system represents a different mix of market-based and institution-based financial systems. Which model is superior is an open question.

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Table 4.1

Key Asset Ratios, 1920-1980

Year	U.S. loans-to- assets ratio (percent)	Canadian loans-to- assets ratio (percent)	U.S. assets-to- capital ratio	Canadian assets- to-capital ratio
1920	53.1	72.7	8.7	11.6
1930	51.2	69.1	7.2	10.2
1940	27.2	41.9	10.6	13.4
1950	32.6	43.6	14.5	27.4
1960	45.7	63.6	12.6	17.0
1970	50.9	61.2	13.7	21.6
1980	54.9	72.1	18.1	33.4

Source: Bordo, Redish, and Rockoff (1994)

Table 4.2

Losses on Deposits

Years	Canada	U.S. national banks	All U.S. banks
1865-1880	.01 ^a	.06	.21
1881-1900	.16	.08	.15
1901-1920	.01	.01	.05

^a This figure is for 1867 (Confederation) to 1880. In 1866 there was a major failure: the Bank of Upper Canada. If this failure were included, the Canadian average for 1865 to 1880 would be about .07. See Breckenridge (1910, pp. 79-80) for a discussion of this failure.

Source: Canada and U.S. National Banks, see text. All U.S. banks; U.S. FDIC, Annual Report (1940, p. 69):

Table 4.3

Canadian Bank Concentration Measures, 1895-1927

Year	Percentage of total bank assets			Herfindahl index
	Top 3 banks	Top 5 banks	Top 10 banks	
1895	34.19	43.85	64.07	.0648 (15)
1900	37.81	48.46	69.08	.0754 (13)
1905	37.39	46.03	68.64	.0775 (13)
1910	38.08	48.56	69.70	.0786 (13)
1915	44.14	55.89	78.86	.0891 (11)
1920	51.95	66.11	86.51	.1128 (9)
1925	65.90	78.91	98.31	.1656 (6)
1927	68.61	81.99	99.78	.1793 (6)

Source: Beckhart (1929, pp. 330-33).

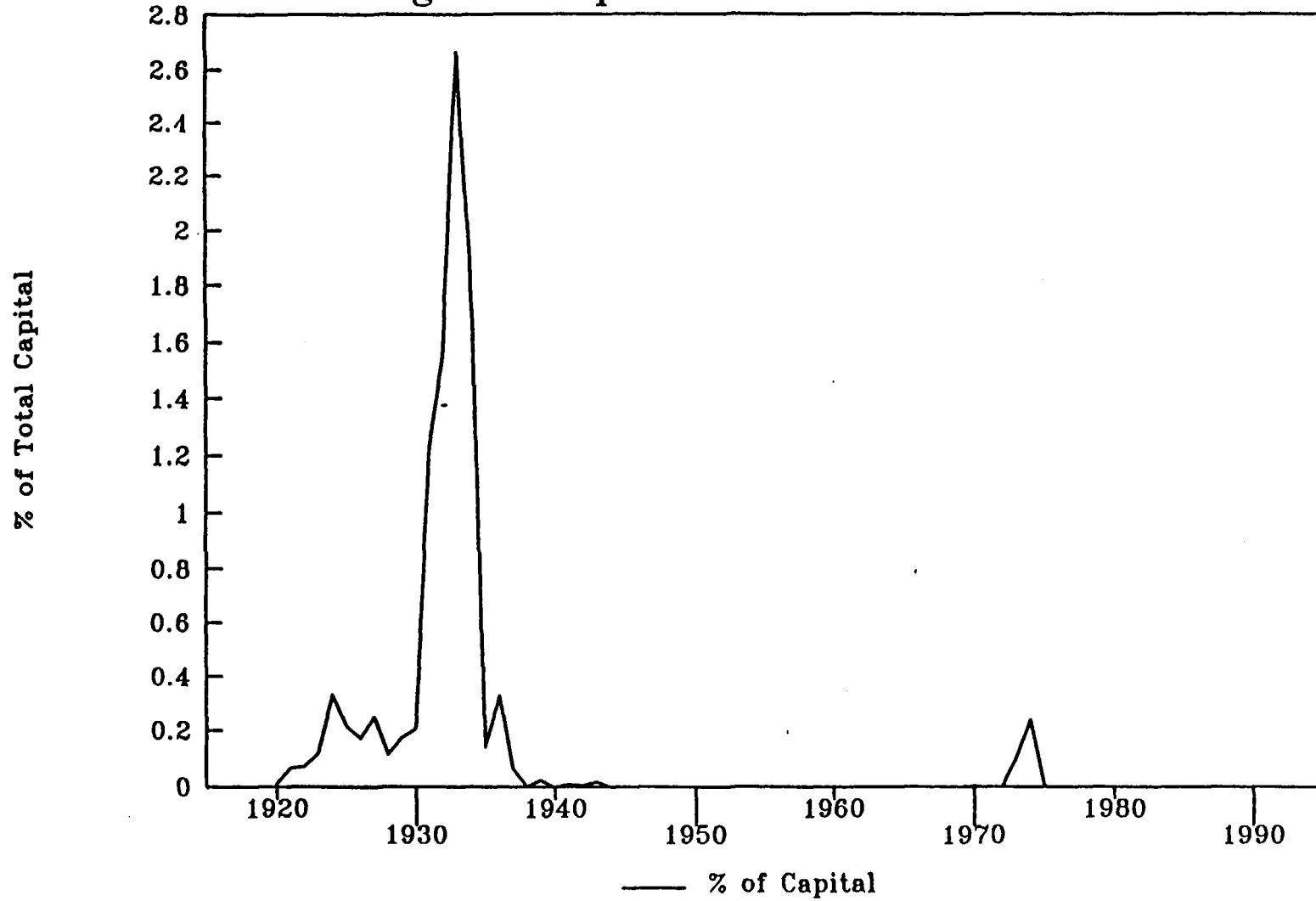
Table 4.4

Bank Balance Sheets, Canada and the United States, 1870-1919

	1870-79	1880-89	1890-99	1900-09	1910-19
<u>Canada</u>					
Loan/asset	.717	.706	.696	.722	.640
Security/asset	.013	.021	.071	.087	.110
Debt/equity	1.458	1.914	2.796	4.232	6.876
<u>United States</u>					
Loan/asset	.487	.563	.589	.546	.567
Security/asset	.253	.169	.117	.164	.168
Debt/equity	1.826	2.334	2.620	4.184	5.352

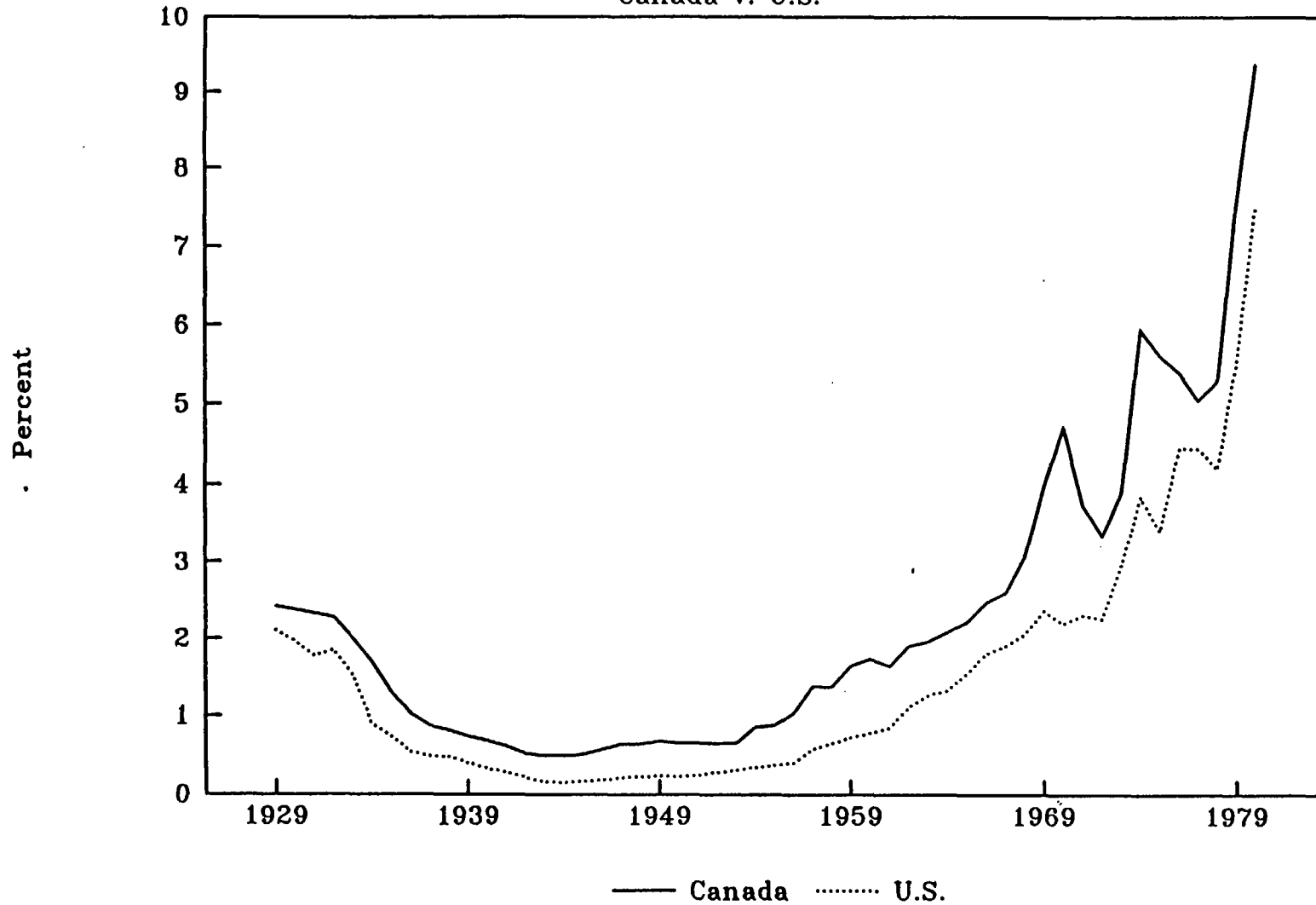
Source: U.S.: U.S. Comptroller of the Currency, Annual Report; Canada: Curtis (1931).

Percentage of Capital: Insolvent National Banks



Sources: Bordo, Redish and Rockoff (1994)

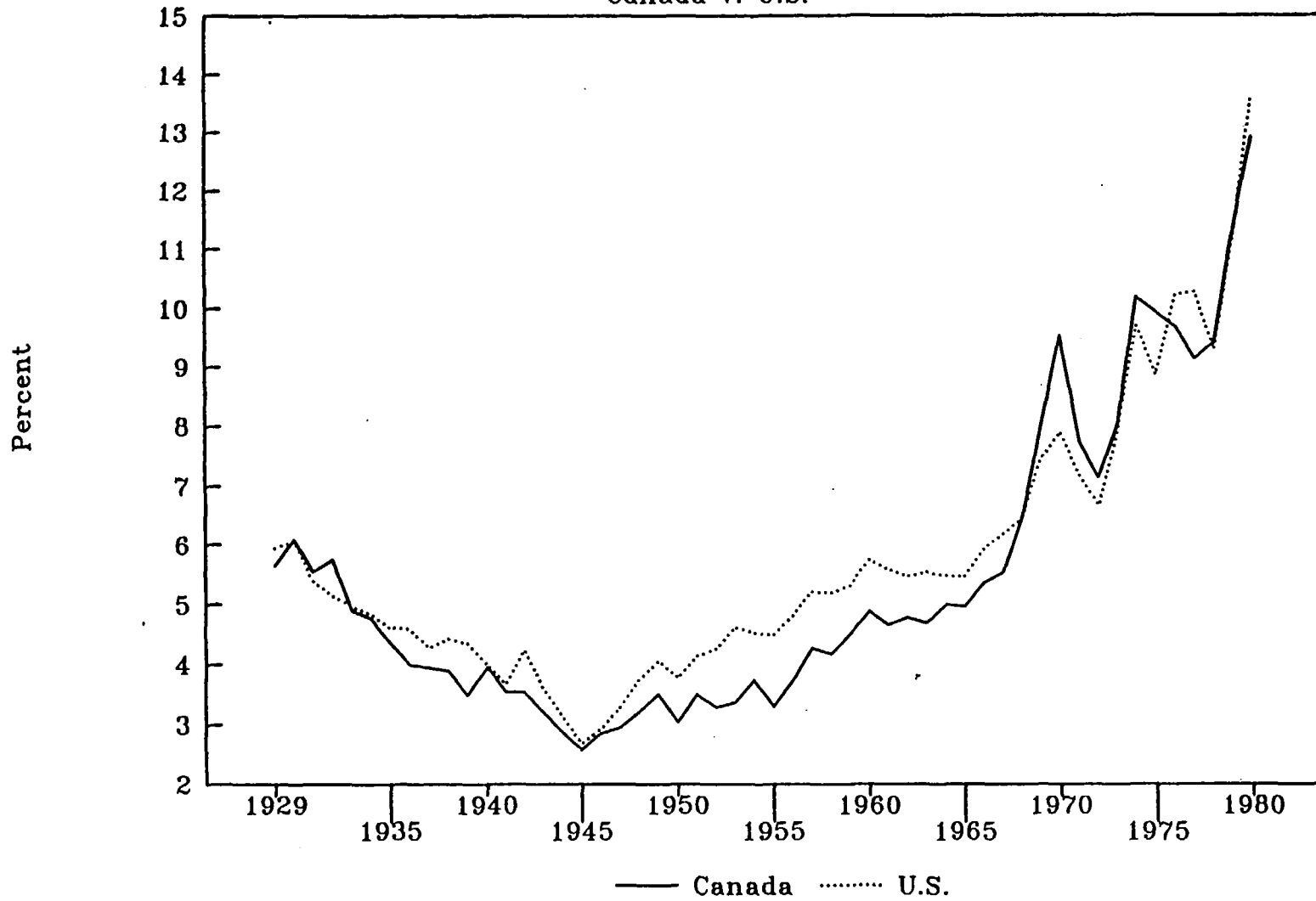
Interest Rate on Deposits Canada v. U.S.



Source: Bordo, Redish and Rockoff (1994)

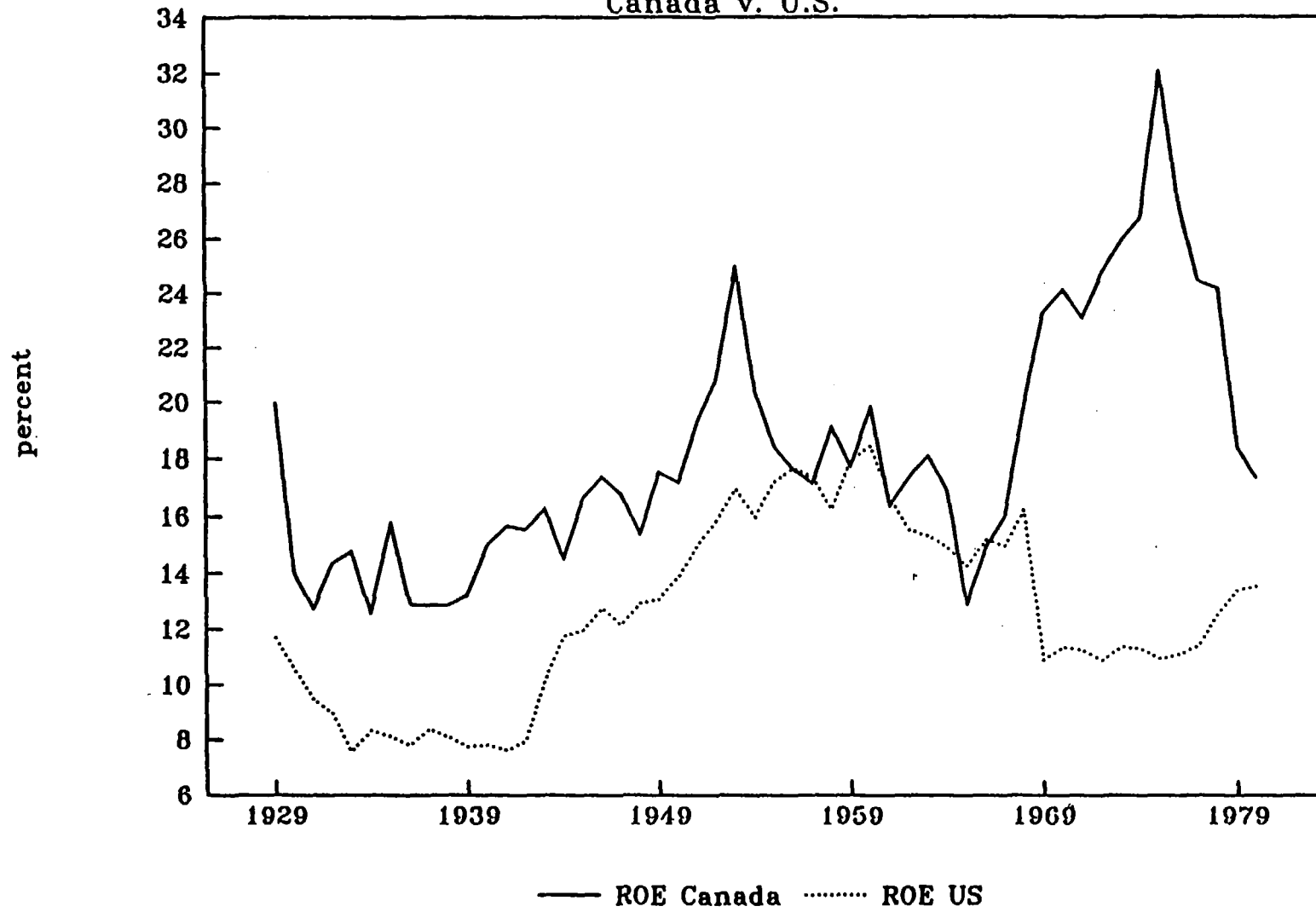
Return on Loans

Canada v. U.S.



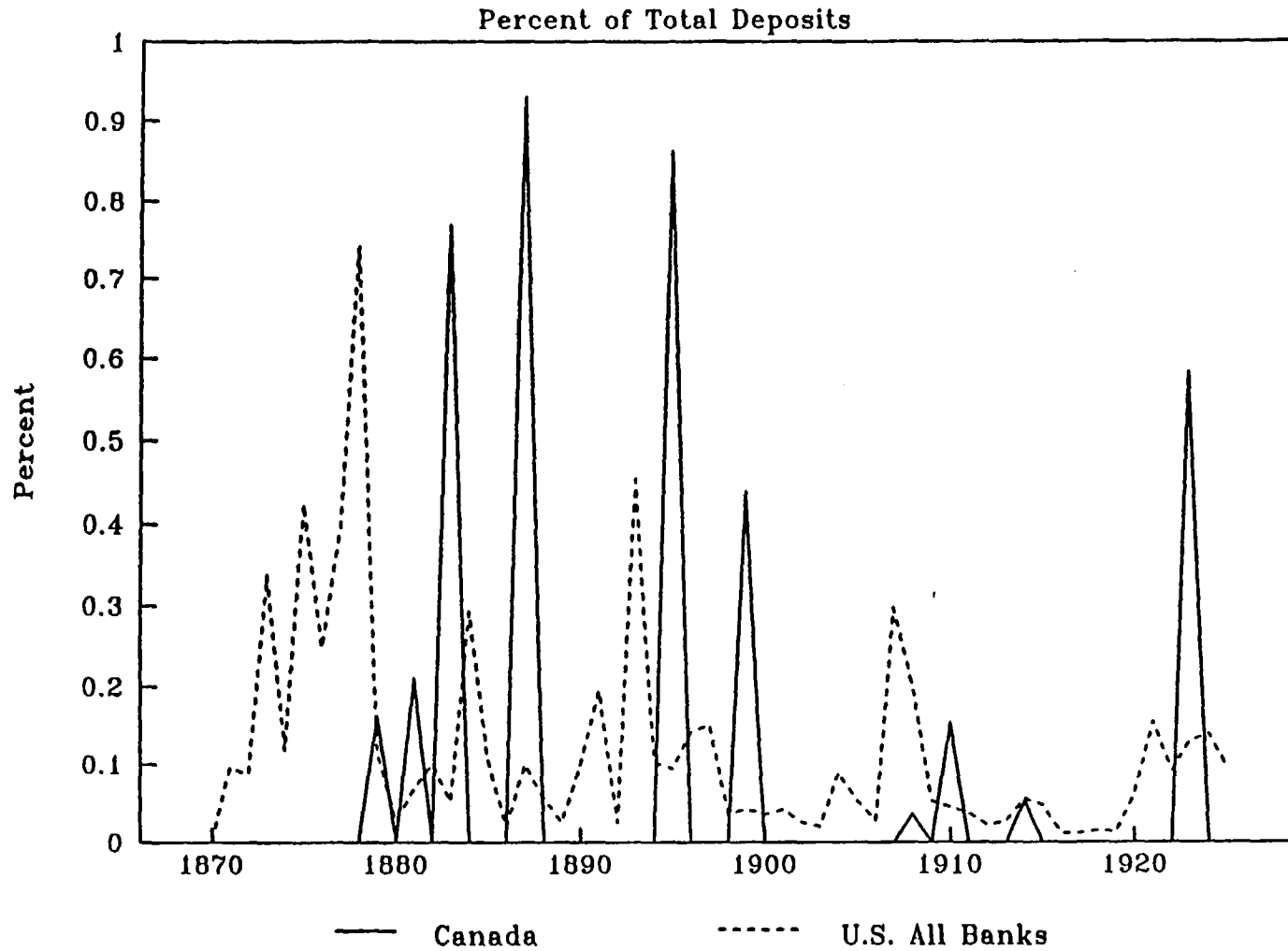
Source: Bordo, Redish and Rockoff (1994)

Return on Equity Canada v. U.S.



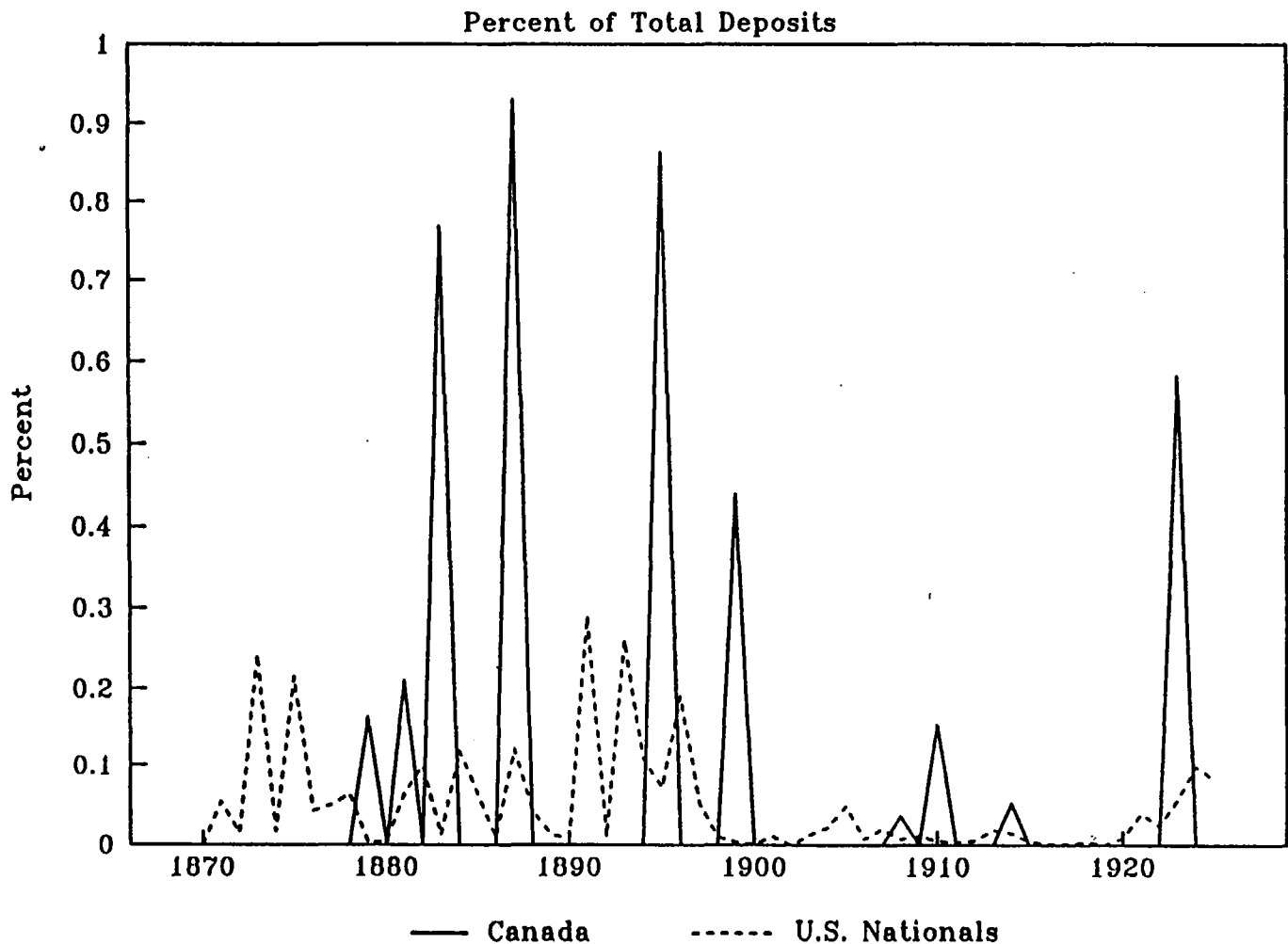
Source: Bordo, Redish and Rockoff (1994)

Deposit Losses, 1870-1925



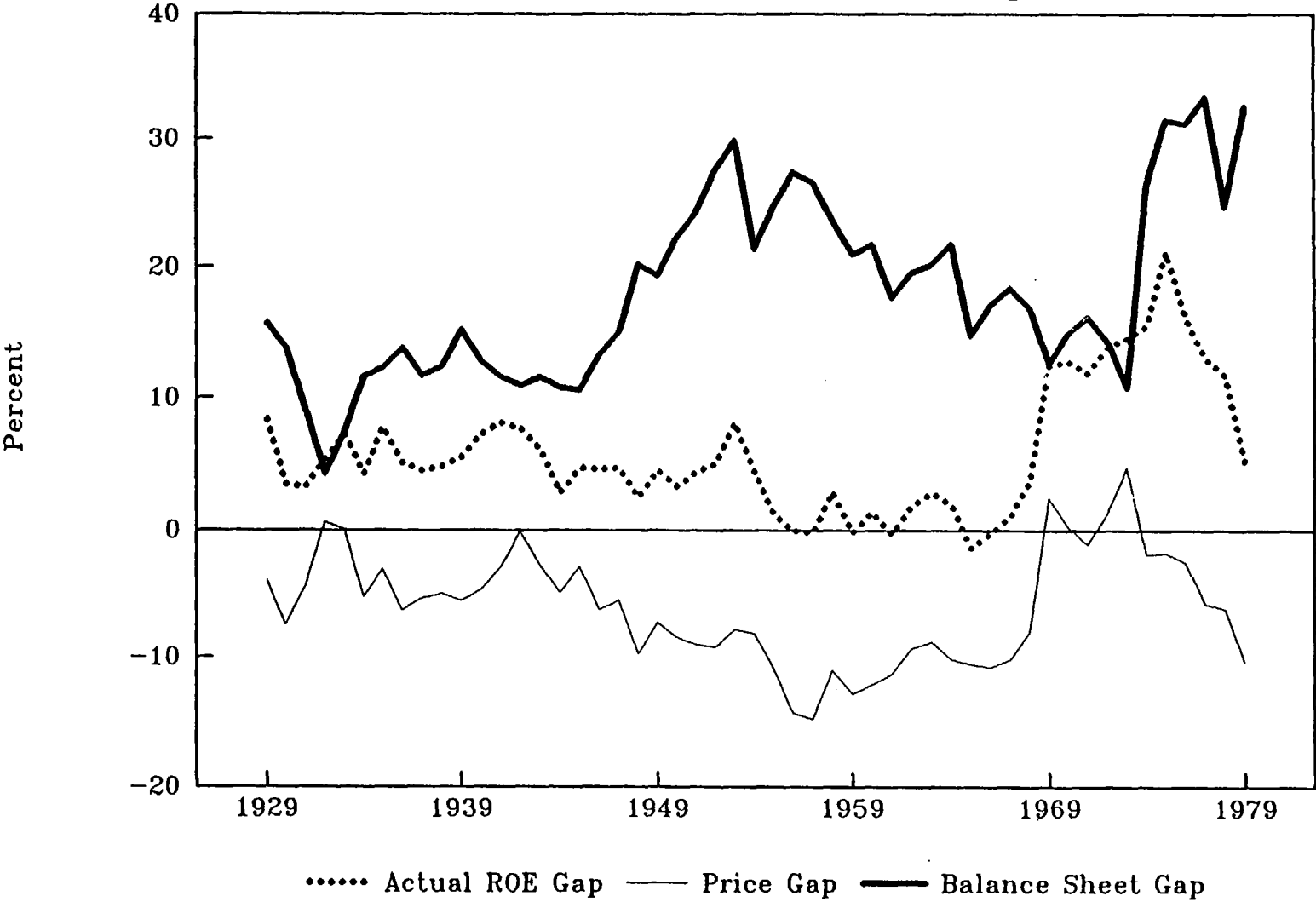
Source: Bordo, Redish and Rockoff (1996)

Deposit Losses, 1870-1925



Source: Bordo, Redish and Rockoff (1996)

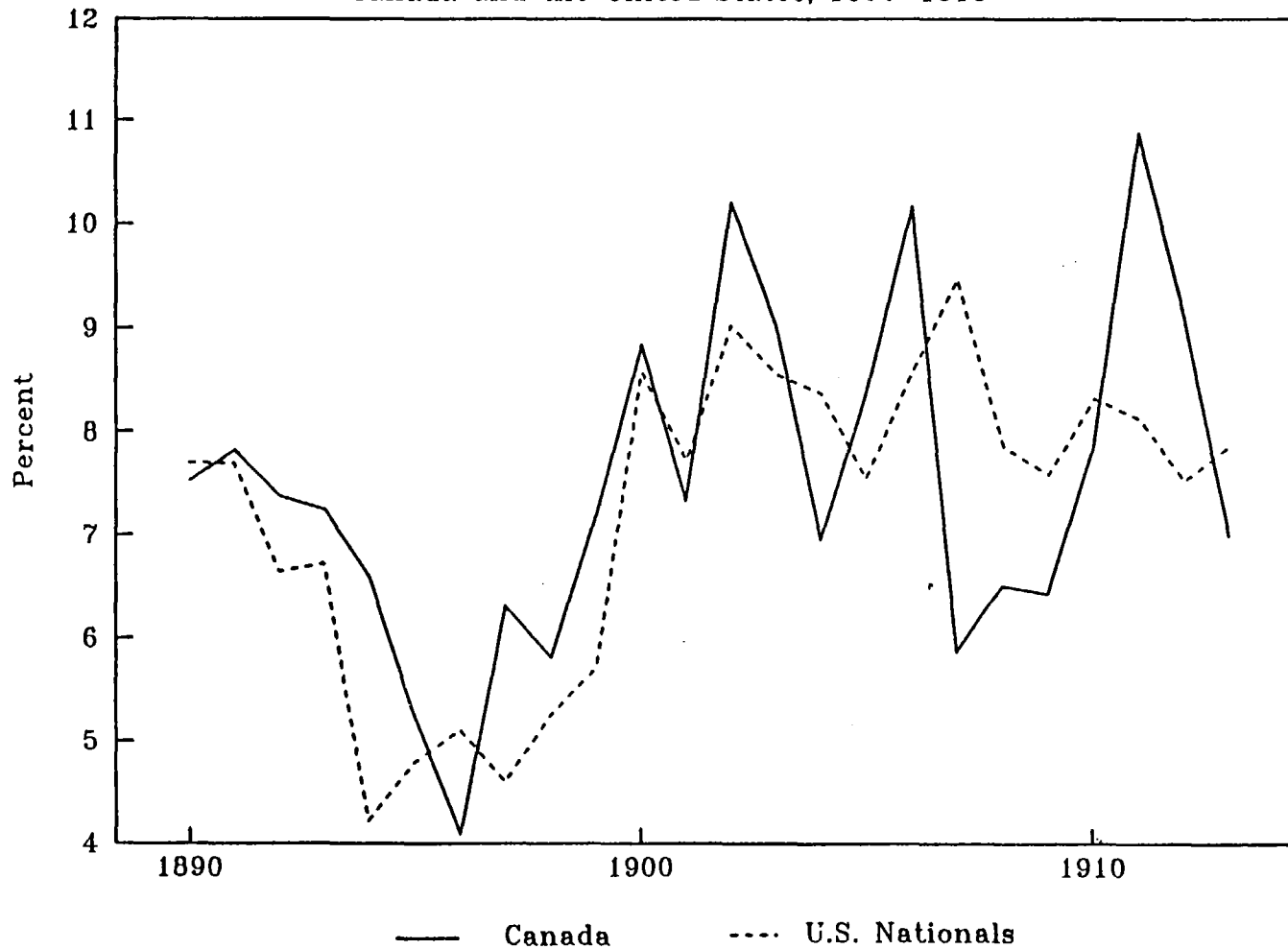
Determinants of the ROE Gap



Source: Bordo, Redish and Rockoff (1994)

Rates of Return to Equity

Canada and the United States, 1890-1913



Source: Bordo, Redish and Rockoff (1996)

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