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Let it Fail? Reflections on the SVB Collapse and the US and Canadian Approaches to Bank Crises

Where Canada has implicitly prioritized avoiding systemic risk in handling troubled financial institutions and has a remarkable history of stability, the United States has implicitly prioritized market discipline to counter moral hazard and has an unparalleled history of financial crises as a consequence.

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Let it Fail? Reflections on the SVB Collapse and the US and Canadian Approaches to Bank Crises

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- Despite having highly similar economies, in banking the experience of the crisis-prone United States contrasts starkly with Canada's stability.
- For each major US crisis, different reasons have been put forward to explain Canada's comparative stability in the face of broadly similar shocks, an issue that arose again in the context of the failure of Silicon Valley Bank and its aftermath.
- This *Commentary* examines whether there is a unifying explanation for these contrasting outcomes and what this implies for Canada's future financial sector stability. It identifies the changes introduced in the 1890 and 1900 *Bank Act* revisions that led Canada to manage banking sector problems in a cooperative arrangement between the banks and the authorities. The aim was to address the externalities generated by bank failures while controlling the resultant moral hazard through social networks rather than market discipline.
- Importantly, the system ensured enough competition to be efficient. Drawing on this comparative analysis, the *Commentary* considers the lessons to be drawn for future financial regulation.

Introduction

Silicon Valley Bank (SVB), an iconic institution serving the US technology sector and the United States' sixteenth-largest bank by assets, collapsed in a crisis that unfolded with shocking speed between March 8 and 10, 2023 (Chappatta 2023). The collapse sent shock waves through the US and global financial systems.

The context was anything but benign: on March 7, the day before the SVB crisis flared, Jerome Powell, the chair of the US Federal Reserve, in testimony before the Senate Banking Committee, commented that interest-rate increases could be larger and more rapid than previously anticipated. Specifically, Powell stated that "the ultimate level of interest rates is likely to be higher than previously anticipated" and that, if necessary, the Fed "would be prepared to increase the pace of rate hikes" (Schneider and Dunsmuir 2023).

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With the US yield curve inverted since mid-2022,[1] investors' appetite for risk was on the wane as the threat of recession rose. Powell's comments invited a further repricing of risk. It was SVB's fate to be the canary in this particular coal mine. It was exposed to the downturn in the technology sector, and its business model was to borrow short to lend long, exposing it to interest-rate risk in the event of rising short-term rates. Exposed investors in banks subject to either or both risks faced the question: "Do I stay or do I go?" They ran.[2]

- New York-based Signature Bank, the twenty-ninth-largest bank in the United States, failed two days after SVB (Giang 2023). The Federal Deposit Insurance Corporation (FDIC) seized the bank and sold it to Flagstar Bank, N.A., a subsidiary of New York Community Bancorp, with the latter bank assuming the business of Signature Bank as of March 20, 2023 (FDIC 2023a).
- San Francisco-based First Republic Bank, the fourteenth-largest bank in the United States, received a US$30 billion bank-led liquidity injection to shore up confidence after US$70 billion in emergency loans and other liquidity from the Federal Reserve and JPMorgan Chase had failed to stabilize it (Copeland et al. 2023). Even with this support, First Republic was unable to continue, and was seized by authorities on May 1, with its assets sold off to JP Morgan, which assumed First Republic's deposit liabilities (FDIC 2023b).
- Zürich-based Credit Suisse's share price collapsed, forcing a massive emergency injection of funds by the Swiss bank supervisory authorities (Cooban 2023) and subsequently a takeover by UBS (Patrick et al. 2023).
- SVB itself was sold, following a two-week auction process, to North Carolina-based First Citizens Bank, ending its history (Choe 2023). The FDIC estimated the cost of the SVB resolution to its Deposit Insurance Fund at approximately US$20 billion (FDIC 2023c).

The run was in part due to the initial approach by the US authorities to the SVB failure, which was to establish a Deposit Insurance National Bank under FDIC control to provide insured depositors immediate access to their insured funds and to pay out a portion of the funds owed to uninsured depositors through an Advance Dividend, while holding back a portion to help cover any losses to the Deposit Insurance Fund. The prospect of losses triggered a run on uninsured deposits in other banks, including Signature and First Republic.

The authorities (including the FDIC, the Federal Reserve and the Secretary of the Treasury) reacted by invoking the systemic risk exception under the *Federal Deposit Insurance Act*, which set aside the least-cost requirement to the Deposit Insurance Fund to protect the uninsured depositors in SVB and Signature (Gruenberg 2023).

As well, President Joe Biden sought to reassure markets and depositors to prevent further bank

1 The yield curve depicts the rate of interest at different maturities of debt instruments. Normally, investors demand higher interest rates to lock in lending for longer terms. Accordingly, the normal yield curve slopes upward. However, during periods of monetary tightening, short-term rates can move higher than long-term rates, resulting in a downward sloping yield curve. Yield curve inversions have invariably preceded recessions in the US economy in the post–Bretton Woods era. The inversion after mid-2022 was by far the deepest in this era. On the relationship between yield curve inversions (measured as the 10-year bond rate minus the 3-month Treasury bill rate) and recessions, see Federal Reserve Bank of St. Louis (n.d.).

2 It is important to emphasize that maturity transformation is a staple part of banking practice; hence the banking system worldwide faced the risks from further interest-rate hikes in the context of an already steeply inverted yield curve. On this see, for example, Tindera and Armstrong (2023). Moreover, while banks worldwide obviously did not face the same sector-specific credit risks that SVB did, recessions generate credit risk throughout the system. There is a saying in financial markets that, when liquidity dries up (as was threatened by Powell's March 7 statement to Congress), markets find out who was "swimming naked." Not to put too much of a fine point on this, investors did not want to find out. TMI – and too late.

runs, saying "Your deposits will be there when you need them" (Sweet et al. 2023). And analysts emphasized that SVB and First Republic had been outliers in terms of business strategies – in particular, in terms of having asset-liability mismatches – that exposed them unduly to the risks posed by rising interest rates (see, for example, Defend, Mortier, and Germano 2023; Russell and Zhang 2023).

While markets generally discounted the risk of further knock-on events, nonetheless several mid-sized US banks that were judged not to be "too big to fail" – in particular, Los Angeles–based PacWest and Phoenix-based Western Alliance (Hirsch 2023a). Pacific Western was merged out of existence in July 2023 as it could not recover (Nishant and Saini 2023). The share price of Western Alliance did rebound but remains as of this writing well below its pre-SVB moment valuations, which suggests that markets have yet to issue an "all clear" signal.

In tallying up the damage, the assets of the three failed US banks totalled US$548 billion (FDIC 2023d), which is larger in absolute terms than the US$526 billion (inflation adjusted) held by the 25 US banks that collapsed in 2008 at the height of the subprime crisis (Russell and Zhang 2023) and of the same order of magnitude (2.4 percent versus 3.4 percent in the subprime crisis) when the two figures are compared as a share of total banking assets.[3] If the merger of Pacific Western in July 2023 is included as effectively a failure, then the estimated US$26.73 billion worth of assets at the time of the merger could be included in the total, bringing the 2023 event to US$575 billion, or 2.5 percent of total US banking system assets.[4] The SVB moment was by no means a small event in the history of US financial sector crises.

The Immediate Impact on Canada

The immediate ramifications on Canada, however, were minor. Canada's banking regulator, the Office of the Superintendent of Financial Institutions (OSFI), took control of SVB's Canadian branch, which had started operations in Canada only in 2019 (OSFI 2023b; Punchard 2023) and resumed a practice adopted during the COVID-19 pandemic of a daily check on bank liquidity levels.

As SVB's Canadian branch was only authorized to lend and not take deposits in Canada, there were no ramifications in terms of depositor risk. Some Canadian technology companies that had established relationships with Silicon Valley did have deposit accounts in SVB, which then became part of the US resolution of the failure.

Canadian analysts hastened to emphasize the limited risk of instability to the Canadian banking sector (see Johnson 2023). Commentaries noted the small direct exposure of Canadian banks to the technology sector and that the main exposure of Canadian banks to US developments was indirect through their US bank subsidiaries.[5] Markets

3 Total commercial bank assets in the United States were US$11.15 trillion in March 2008 (about US$15.6 trillion in 2023 dollars) when Bear Stearns failed. They were about US$22.9 trillion in March 2023 when SVB failed (Federal Reserve Bank of St. Louis n.d.).

4 On the merger, see PacWest (2023); on the troubled condition of Pacific Western at the time of merger, see Nishant and Saini (2023).

5 The major Canadian banks' exposure to US operations is as follows:
- TD: 35% of TD's earnings come from US retail banking (TD 2022), including from TD Bank, America's Most Convenient Bank, which is the tenth largest US bank, and through its holdings in the Charles Schwab Corporation. See: https://www.td.com/about-tdbfg/corporate-information/corporate-profile/profile.jsp.
- RBC: 25% of RBC's global revenue comes from the United States. RBC claims to be the leading Canadian investment bank in the United States and the 6th largest wealth manager in the United States (RBC 2023). It also holds LA-based City National, the 35th largest bank in the United States, which focuses on Hollywood.
- CIBC: 11.3% of its global revenue comes from its US operations (CIBC 2022).

validated that assessment: while Canadian bank stocks fell on the SVB news and subsequent events, the initial decline was less that in US bank stocks and also less than EU bank stocks (Figure 1).

And not for the first time, the "Canadian model" for banking was touted: "Not only should the failure of Silicon Valley Bank not have significant negative implications for our banks, but this crisis should actually be viewed as further vindication of the Canadian banking model" (Scotiabank analyst Meny Grauman, quoted in Bickis 2023).

SVB – Lessons Learned?

The SVB collapse has been compared to the Bear Stearns moment as the subprime crisis started to unfold (Pollard et al. 2023). This raises the question of whether the system remains exposed to a Lehman moment parallel. Markets generally appear to have drawn a line under the SVB moment but there are reasons to consider the lessons from this incident.

First, while the US policy response to SVB nipped the incipient crisis in the bud, the US banking system remains fragile on a structural basis. As Jiang et al. (2023) note, "prior to the recent asset declines all US banks had positive bank capitalization. However, after the recent decrease in value of bank assets, 2,315 banks accounting for [US]$11 trillion of aggregate assets have negative capitalization relative to the face value of all their non-equity liabilities." The Federal Reserve Board's October 2023 Financial Stability Report confirms that "high interest rates continued to depress the fair value of longer-maturity, fixed-rate assets that, for some banks, were sizable." As well, it notes that "a subset of banks continued to face funding pressures, reflecting concerns over uninsured deposits and other factors" (FRB 2023).

Second, the shadow banking sector, which engages in credit intermediation outside the framework of rules developed to govern banks in this activity, has grown its direct lending very substantially.[6] In the latter regard, as Hirsch (2023b) comments, "Direct lending [by the shadow banks] at this scale has never been tested: Nearly all its decade-long growth has happened amid cheap money and outside the pressures of a recession. The industry's opacity means it's nearly impossible to know what fault lines exist before they break."

Third, while the tech sector exposure has been flagged as a reason to treat SVB as an isolated case, the larger risk for the financial system is rapid technological change driving pervasive structural change in the economy. For example, commercial real estate debt is a source of risk as increased work-from-home drives both reduced demand for office space and the products of the services sector that evolved to serve office workers. Also, it is unknowable what stresses the widespread adoption of artificial intelligence systems will unleash – but stresses there will be.

These structural issues loom large, since further monetary tightening has not been taken off the table as of this writing. Following the Federal Open Market Committee (FOMC) meeting of early November 2023, Fed chair Jerome Powell stated: "We haven't made any decisions about future meetings…It's fair to say that the question we're

6 Shadow banks are non-bank financial intermediaries that provide services similar to traditional commercial banks but outside normal banking regulation and supervision. Both Bear Stearns and Lehman Brothers operated in the shadow banking system (Gelzinis 2019). The shadow banking system raises continuously rolled-over short-term debt (money market funds, commercial paper, asset-backed commercial paper, and so on (FSB 2011) to fund portfolios of financial assets, thus engaging in maturity/liquidity transformation and leverage, just as banks do by taking deposits to fund various types of loans. The short-term debt issued by shadow banks thus functions as privately issued (near) money. See Ricks (2016) for a discussion of the role of shadow banks in the subprime crisis and their growth in the aftermath due to financial innovation and increased increased "regulatory arbitrage" as the formal banking system was subjected to intensified regulation (on the latter, see e.g., FSB 2011 and McCulley 2009).

Figure 1: Equity Prices of Canadian Banks Compared to US and European Banks, post-SVB Failure

Source: Bank of Canada (2023), Chart 3. See notes to Chart 3 for definitions of the bank groups. Last observation is 16 May 2023.

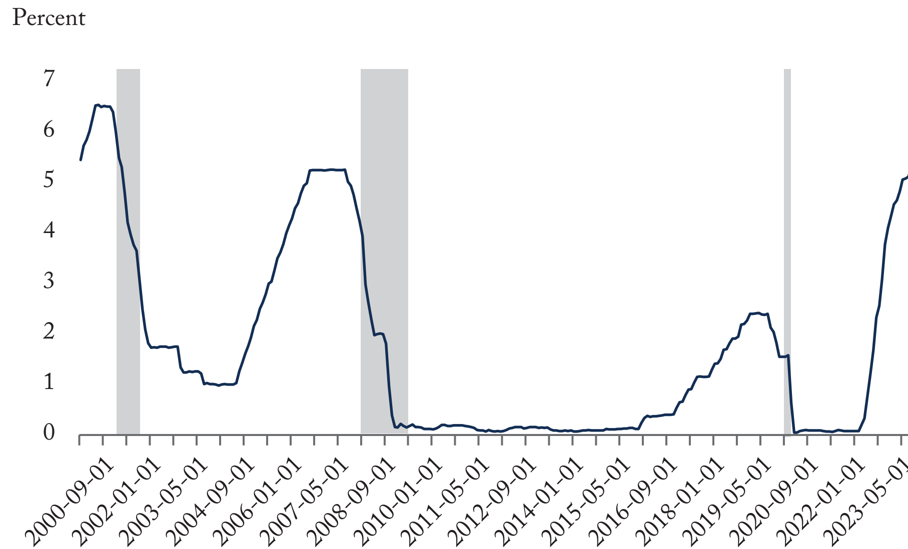
asking is: Should we hike more?" (cited in Foster 2023). Perhaps even more important, the Fed has indicated that rates will remain high for longer. As can be seen from Figure 2, the subprime crisis did not break out immediately following the monetary tightening of 2006, but rather after an extended period of high interest rates, a situation that now looms for the US economy (note: the grey bars denote recessions).

Accordingly, even though the US money centre banks, which have been the focus of supervisory attention since the subprime crisis, are reportedly well capitalized, it is an open question of whether US authorities are in a position to revert to business as usual on bank closures without tipping the system into yet another crisis.

This is significant because while the SVB crisis has led to consideration of regulatory reforms in the United States,[7] it does not appear to have led to a fundamental reappraisal by US authorities of their overall approach to banking supervision. In particular, although the relatively limited fallout from SVB to date reflects the invocation of the systemic-risk exception, the United States is looking for ways "to improve the likelihood of an orderly resolution of large regional banks under

7 These could take many forms – reversal of the relaxation of Dodd-Frank regulations imposed in response to the subprime crisis under the Economic Growth, Regulatory Relief, and *Consumer Protection Act* signed into law by President Donald Trump on 24 May 2018; improved supervision (including increased head count at the regulatory agencies); increased capital requirements for banks; changes in practice for marking to market to provide flexibility in weathering the present episode, expansion of deposit insurance coverage, and others (Barr 2023; Jiang et al., 2023; Rappeport 2023; and Smialek 2023).

Figure 2: Federal Funds Rate, 2000–2020



Source: Federal Reserve Bank of St. Louis, https://fred.stlouisfed.org/series/FEDFUNDS#

the *FDI Act*, *without the expectation of invoking the systemic risk exception*" (Gruenberg 2023, emphasis added).

In this *Commentary*, I consider what light can be shed on the policy course being taken in the United States from the historical evolution of the Canadian and US financial sectors in terms of financial stability. Where Canada has implicitly prioritized avoiding systemic risk in handling troubled financial institutions and has a remarkable history of stability, the United States has implicitly prioritized moral hazard and has an unparalleled history of financial crises.

The *Commentary* is organized as follows. The next section provides an overview of this history, documenting the differences in societal costs of the two approaches; the **online Appendix** reviews this history in greater detail. The following section discusses the many contending explanations for the divergence in historical outcomes. It identifies the tipping point in history where Canadian and US experience diverged given the choice made in Canada early in its history to prioritize prevention of the negative externalities associated with bank failures, while the United States tolerated failures to provide a market discipline on moral hazard. The next-to-last section discusses the implications of these choices for financial sector efficiency and stability and the extent to which there is a trade-off between the two objectives based on tolerance for risk taking. The final section concludes with a discussion of the lessons Canadian policymakers should draw from the SVB failure – and what lessons US policymakers might draw from the Canadian experience.

The Great Divergence

Canada and the United States are highly similar economies, as would be expected given the many common historical influences on economic policy and regulation, similar levels of income and

urbanization, the shared geography (each Canadian region is part of a larger North American region with its US neighbour) and the high degree of economic interaction, amplified by more or less free trade since the 1989 Canada-US Free Trade Agreement. Importantly for the present discussion, the agreement removed US banks from the cap on foreign bank assets in Canada, opening up competitive pressure in Canada's financial markets. *The Bank Act* reforms that authorized foreign branch banking in Canada further opened up the system to competition on the asset side, although not so much on the funding side.[8] For example, SVB was present in Canada as a lending branch.

Deep integration creates incentives for regulatory convergence, which in the North American context essentially means that Canadian standards and regulations tend to follow the rules adopted by the United States, even if they differ in their minutiae (Hart and Dymond 2007).[9]

In the financial sector, however, and particularly in banking, the US model has not been the primary influence on Canada: where the United States has been crisis prone, Canada has a long history of stability. In fact, the two countries arguably occupy the polar extremes of the most and least crisis-prone financial sectors of the major economies.[10]

The Anomalous History of US Financial Crises

The United States is a far outlier in terms of frequency of bank failures and financial crises. In its early history, the United States had recurring financial crises/panics/incipient panics on a decadal-plus basis, resulting in 3,401 banks suspending payments between 1865 and 1914 alone (Davis and Gallman 2001). The Federal Reserve Board was established in 1913 in response to the 1907 panic.

The interwar period featured additional waves of bank failures, including over 9,000 failures during the 1930–33 period alone (Calomiris and Mason 2003). During the Bretton Woods era, the United States had a brief respite from financial crises, but these returned with a vengeance in the 1980s. A partial tabulation of the post-1980 crises and the bailout costs they entailed (prior to the SVB event) is provided in Table 1.

The Sharp Contrast between Canada's History and US Experience

The contrast between the US experience and that of Canada could not be greater, despite the fact that Canada experienced the same major shocks as did the United States. Since 1900, Canada has had only

8 Some foreign bank branches in Canada are permitted to offer full banking services, but most are not allowed to accept deposits of less than $150,000, and some that are designated as lending branches can only accept deposits or otherwise borrow from financial institutions (see OSFI 2023a).

9 This natural tendency is strengthened by the advocacy of Canadian continentalists who argue that Canada should go so far as to eliminate unilaterally the many small differences that persist between the two systems by adopting US standards and regulations to facilitate still deeper economic integration (see, for example, the External Advisory Committee on Smart Regulation 2004). Hart (2006) articulated the case for this as follows: "The regulatory "output" in both countries may be roughly identical, but the United States disposes of much larger regulatory resources than does Canada; as a result, its regulatory "input" is roughly 10 times that of Canada. Common sense suggests that Canada can both reduce its costs and gain superior results by aligning itself more deliberately with the United States and benefiting from the much larger US regulatory effort in selected areas, from drug approvals to environmental standards." Given political sensitivities, however, the case for Canadian convergence toward US standards is more often couched in terms of promoting cooperation/consultation between the national regulatory authorities to avoid/reduce unnecessary differences.

10 There are other countries that could claim to have highly stable financial systems; the United States is unique in its history of instability.

Table 1: US Banking Crises and Bailout Costs, Post-1980

Financial Sector	Period	Number of Institutions	Total Assets *US$ billions*	Bailout Costs *US$ billions*
Mutual savings banks[1]	1980s	75	85	6.6
Commercial banks[2]	1980–94	1,600		36.3
Savings and loans[3]	1980–94	1,043	519	123.8
Black Monday market crash	1987			
LTCM[4]	1998			
This century[5]	Since 2001	563	1,046	
Of which subprime crisis	2007–10	414	677	

Sources:

1. FDIC (1997, Appendix table 6-A.1.
2. FDIC (1997, chapter 1).
3. Curry and Shibut (2000). A study by the Bank for International Settlements puts the number of failed institutions at 1,320 and the bailout cost at US$151 billion (BIS 2004, 56).
4. The collapse of Long Term Capital Management (LCTM) in 1998 during the Asian/Emerging Market crisis of 1997–98 required a rescue orchestrated by the Federal Reserve and carried out by private institutions with outstanding claims on LTCM; it was understood that a bankruptcy would have forced an unwinding of as much as US$100 billion, resulting in cascading losses through the international financial system.
5. FDIC (2023).

one significant bank failure (Home Bank in 1923).[11] During the Great Depression, one commercial bank was merged out of existence to avoid a failure, but the shrinkage in banking capacity required in view of the decline in economic activity was accomplished by a reduction in bank branches. There were no failures. In the post-war period, there were several notable mergers that might have been driven by weaknesses that could have led to failure (examples include the merger of the Toronto Bank and Dominion Bank to form the Toronto-Dominion Bank; and the merger of the Imperial Bank and the Canadian Bank of Commerce to form the Canadian Imperial Bank of Commerce) but again, there were no failures.

Canada, however, had its version of the savings and loan crisis in the early 1980s. In the United States, this crisis was centred in the oil patch, with

11 This claim concerning the Home Bank failure as a landmark event rests on several pieces of evidence: (a) it imposed large losses on depositors; (b) it led to a Royal Commission of inquiry into its causes; (c) it led to a major reform in the governance system – namely, the establishment of the Office of the Inspector General of Banks; and (d) it remains cited as a prominent failure (see, e.g., Turley-Ewart 2004).

Texas the epicentre. In Canada, it was centred in Alberta. Canada closed two small banks (Canadian Commercial and Northland) and merged another troubled bank (Bank of British Columbia) out of existence, with financial support from the public purse. No depositor lost a cent and there was no crisis – although, as the Estey Commission underscored, it was the collapse of the Canadian Commercial Bank that undermined the Northland Bank's "survival tactics" in raising capital (Estey 1986, 6). The cost to the Canadian government amounted to $1.39 billion, of which $875 million was payouts to uninsured depositors, $316 million was losses incurred by the Canada Deposit Insurance Corporation (CDIC), and $200 million injected by the federal government to facilitate the takeover of the Bank of British Columbia by Hongkong Bank of Canada (Chant et al. 2003). It is worth noting that this was the only instance in the history of Canada's deposit insurance program where the banking system proper required assistance.

Canada also had an echo in its non-bank deposit-taking sector of the extended period of banking sector troubles in the United States from the early 1980s through the mid-1990s. Canada lost 38 trust and loan or mortgage companies insured by the CDIC during this period, including six in 1983. The last deposit-taking institution to fail in Canada was Security Home Mortgage Corporation, in 1996 (although there have been some close calls since). The total amount in deposit repayments or rehabilitation laid down by the CDIC amounted to $10.2 billion, with total losses of about $1.7 billion.[12] No depositor, insured or uninsured, lost money, and these failures did not trigger a crisis – although Chant et al. (2003) list trust and loan failures as constituting a "borderline crisis." In addition, it is worth noting that the Alberta credit union system required a recapitalization.

Canada emerged from the Great Financial Crisis of 2007–08 without the failure of a financial institution. To be sure, the Canadian banking system required liquidity support (including from the Federal Reserve) during the crisis due to the closing of global funding markets, but Canadian banks did not need any capital injections from public authorities.

That record has been maintained since, including through the SVB crisis, notwithstanding some close calls along the way.

Duelling Explanations

Canada and the United States provide a "natural experiment" for studying the impact of alternative financial sector regulatory and supervisory polices (see Bordo, Rockoff, and Redish 1994). Canadian officials have promoted the "Canadian model" – for example, through Canada's Global Risk Institute in Financial Services) – researchers have tried to tease out just what about that model accounted for its apparent relative success and some countries (such as Ireland) have set out to imitate it. Nonetheless, the reason for the difference in outcomes is tantalizingly difficult to pin down.

Different Crises, Different Explanations

A first major challenge in identifying the source of Canada's relative stability is that, for each US crisis, differing aspects of the "Canadian model" have been singled out as the key explanatory factor.

For example, it is generally argued that, in the Great Depression, Canada's regionally diversified national banking system enabled it to avoid the waves of bank failures experienced in the US unit-bank-dominated system. As many analysts have pointed out, however, regional diversification breaks down as a risk-management measure when all

12 Estimate compiled by the author from CDIC annual reports.

regions of a country are subject to a common shock, as was the case in the Great Depression. Moreover, by the time of the subprime crisis, US banks had become regionally diversified, and the largest bank to fail in US history to that point – Washington Mutual – had as impressive a branch network as any of the major Canadian national banks.

When the United States had its savings and loan crisis, Canada largely avoided the problems because of a timely liberalization of interest rates in the late 1960s, prior to the inflationary surge of the 1970s, thus avoiding the disintermediation suffered by the US savings and loans institutions that was a major contributing factor to the crisis in the United States.[13] The interest-rate deregulation was not adopted in anticipation of this particular problem, but rather responded to a Canada-specific problem of competitive balance between banks and non-banks that arose from regulatory restrictions on Canadian banks' lending rates, so this looks more like serendipity than a feature of a Canadian "model."

When the United States again lurched into crisis as a result of the subprime mortgage debacle, Canada's system emerged largely unscathed despite many similar contextual developments. Some of the differences noted to explain the difference in outcomes in this latter incident include:

- statistically significant differences in particular balance-sheet ratios – for example, capital and liquidity ratios or the share of liabilities generated by retail versus wholesale deposits, as Rostnovski and Huang (2009) emphasize;
- the concentrated Canadian banking system (Bordo, Redish, and Rockoff 2011);
- differences relevant to the mortgage market, including the lesser run-up in housing prices in Canada, the fact that mortgage interest is not tax deductible in Canada, which works to constrain speculation, and the fact that Canadian mortgage loans are not non-recourse loans as is the case in many US states, (features emphasized by Dodge 2011);
- the consolidation of supervision of Canada's federally supervised financial institutions under the Office of the Superintendent of Financial Institutions, which contrasted with the fragmented US regulatory framework;[14] and
- Canada's innate conservatism in running the financial sector and stronger prudential requirements – for example, capital requirements over and above the Basel Accord requirements and limits on the role of innovative forms of capital in Tier 1 capital, points emphasized by Jackson (2013) in a Congressional Research Service report.

For example, in their exegesis of the subprime crisis, Bordo, Redish, and Rockoff (2011) attribute Canada's escape from crisis to the fact that the concentrated Canadian banking system had absorbed the key sources of systemic risk that exploded in this crisis – namely, the mortgage market and investment banking – and was tightly

13 Institutional differences between the United States and Canada, of course, might have played a role in raising the costs of the S&L crisis to the United States. But banks obviously take into account institutional differences in formulating their lending practices *ex ante*. The systemic factor in the S&L crisis was rising interest rates in a context of Regulation Q restrictions on interest rates. There was no way around those for the US institutions.

14 Formal reviews of the functioning of Canada's prudential regulatory and supervisory system also emphasize the effectiveness of interagency cooperation in Canada between OSFI, the Bank of Canada, the CDIC and the federal Department of Finance through formally established bodies such as the Senior Advisory Committee, which considers systemic issues, including crisis preparedness, and the Financial Institution Supervisory Committee, which addresses institution-specific problems, including early intervention into troubled financial institutions. More generally, Canada gets good marks for the collegial culture of information exchange and cooperation among the agencies with a formal role in financial system governance. See IMF (2019) for a detailed discussion of these issues and the division of responsibilities among Canada's federal agencies for dealing with systemic-risk issues, including the overarching responsibility of the minister of finance for financial system stability, and the Bank of Canada's responsibilities as lender of last resort and manager of the payments system.

regulated by one overarching regulator. By contrast, in the United States, a weaker fragmented banking sector had resulted in the evolution of a strong financial market that featured a large shadow banking system, multiple competing regulatory authorities, and a "labyrinthine set of regulations for financial institutions." In the US system, the shadow banks were largely outside the regulatory umbrella and the risks that they took were therefore not well understood or monitored. While Canada had its version of the shadow banking crisis in the form of the meltdown of the non-bank asset-backed commercial paper (ABCP) market, this activity was relatively small in Canada compared to the United States (see, for example, Chant et al. 2003).

To be sure, the Canadian financial sector reforms in the early 1990s – which replaced the "four pillars" framework based on the separation of banking, trust, investment underwriting and insurance with an integrated financial sector model under one supervisory institution – explicitly targeted many of the risks that blew up in the United States in the subprime crisis.[15] Those reforms, however, responded to the problems encountered by the Canadian financial system in the 1980s, parallel to and contemporary with those encountered by the US financial system and could not explain the prior history of stability, nor did they anticipate the issues that would subsequently drive the subprime crisis.

Moreover, the risk-management rules both Canada and the United States adopted are broadly consistent with the global standards that have emerged through decades of work through international organizations such as the Bank for International Settlements (BIS) and the International Organization of Securities Commissions (IOSCO). Regulatory convergence has also gained impetus from international competitiveness concerns.

Paralleling the official processes, individual financial institutions have developed mathematically sophisticated techniques to manage risk, mining the massive databanks that have been developed on financial markets and instruments. Although individual institutions in Canada and the United States might have superior systems, it is hard to see why Canadian banks as a whole should consistently have more effective internal controls than do US banks.

To illustrate the difficulty of untangling this particular web, both Canada and the United States adopted a major financial sector reform prior to the subprime crisis, allowing banks into investment underwriting. In Canada, this was done through the "mini big bang" of 1987. In the United States, the reform was the repeal of the *Glass-Steagall Act* in 1999, a move that has been blamed explicitly for contributing to the subprime crisis. In Canada, the mini big bang was motivated by the desire to protect the banking system from disintermediation by a nascent shadow banking system – as signalled by the institution of the "bought deal" by Gordon

15 Notably, Canada continued to have provincially regulated and supervised financial institutions (including securities dealers, mutual fund and investment advisors, credit unions and provincially incorporated trust, loan and insurance companies) that were not under the purview of OSFI, but under 13 separate supervisory authorities. Notably, the provincially supervised segment of Canada's financial sector includes Quebec's Desjardins group, which plays a very significant role in that province. However, following the 1987 mini "Big Bang" that allowed the banks into underwriting and the 1992 reforms that broke down the "four pillar" structure, the main sources of systemic risk were brought largely under the direct oversight of OSFI. That said, in its review of Canada's financial system in 2019, the International Monetary Fund observed: "Inter-agency coordination and cooperation works well at the federal level and among provincial authorities, but the federal-provincial nexus needs further improvement…The capacity to conduct Canada-wide surveillance should be strengthened, supported by continued efforts to address data gaps. A federal-provincial platform to discuss systemic risk issues and formulate policy responses should be established. System-wide contingency plans, including how to provide market-wide liquidity support, should be put in place" (IMF 2019).

Capital in the mid-1980s. Such a system would have created a dynamic problem of adverse selection as the banks' best clients moved into direct financing, given that, at the time, they had as good or better credit ratings than the banks, which were saddled with non-performing sovereign loans associated with the Latin debt crisis. In one country, deregulation is said to have led to the crisis; in the other, the same deregulation can be argued to have prevented the crisis.

The Simultaneous Failure of Multiple Lines of Defence

The second major challenge in trying to nail down specific regulatory or supervisory features as responsible for Canada's record of stability lies in the fact that, in managing their affairs, financial institutions have multiple lines of defence against failure: internal risk-monitoring management systems, internal auditors, boards of directors' audit committees, boards of directors themselves, external auditors, and the disciplines generated by scrutiny from interested shareholders, market analysts and credit-rating agencies. Supervisory oversight and regulatory rules of the road are thus only one line of defence, and not necessarily the most important.

Given the various lines of defence, following every major financial debacle, of which we now have had four and counting in the span of a quarter-century – the Asian crisis, dot-com, subprime and now SVB – recriminations are levelled at each layer: the managers (and their pay/incentive packages), the directors, the auditors, the rating agencies, the market analysts, the risk models and the technicians who build them and, of course, public sector rules and the supervisory authorities.[16]

For example, examining the subprime crisis, the Financial Crisis Inquiry Commission (FCIC 2011) seemingly apportioned equal blame to the "captains of finance and the public stewards of our financial system" who "failed to question, understand, and manage evolving risks" in the financial system, while commenting disapprovingly on households that "borrowed to the hilt." The Commission listed its major findings as follows:

- The financial crisis was avoidable: it was the result of "human action and inaction, not of Mother Nature or computer models gone haywire" (FCIC 2011, xvii).
- There were failures in financial regulation and supervision: "The sentries were not at their posts, in no small part due to the widely accepted faith in the self-correcting nature of the markets" (FCIC 2011, xviii).
- There were "dramatic failures of corporate governance and risk management at many systemically important financial institutions" (FCIC 2011, xviii).
- There was "excessive borrowing, risky investments, and lack of transparency" (FCIC 2011, xix).
- The government was "ill prepared for the crisis, and its inconsistent response [allowing some institutions to fail but bailing out others] added to the uncertainty and panic in the financial markets" (FCIC 2011, xxi).
- There was a "systemic breakdown in accountability and ethics" (FCIC 2011, xxii).

More generally, the Commission blamed the collective "we" for allowing the development of a shadow banking system that lacked all the safeguards built around the formal banking system to prevent recurrence of the crises of the 1930s; in Biblical tones, the Commission concluded, "We had reaped what we had sown" (FCIC 2011, xx).

In the case of the subprime crisis, the chain of failure was multiplied many times over because of the multiple players involved in the generation of

16 Public policy, of course, gets it from both sides – from market fundamentalists who argue that the crises are actually caused by the heavy hand of regulation (including the inducements for risk taking created by deposit insurance and the political motivations to bail out failing banks), and from those who blame the supervisory authorities for being derelict in their duties.

the derivative instruments at the heart of the crisis. As Baily, Litan, and Johnson (2009, 8) observe,

> What is especially shocking...is how institutions along each link of the securitization chain failed so grossly to perform adequate risk assessment on the mortgage-related assets they held and traded. From the mortgage originator, to the loan servicer, to the mortgage-backed security issuer, to the CDO issuer, to the CDS protection seller, to the credit rating agencies, and to the holders of all those securities, at no point did any institution stop the party or question the little-understood computer risk models, or the blatantly unsustainable deterioration of the loan terms of the underlying mortgages.

The Asian crisis elicited a similar litany of recriminations of failure at every step in the line of defence: Where were the auditors? Where were the credit-rating agencies? Where were the risk models?

These recriminations are being reiterated at present in the SVB crisis (Barr 2023). For example, in the review of the SVB failure, it was noted that supervisory officials had warned SVB about the risk that higher interest rates posed to its balance sheet as far back as November 2021; SVB failed to address the concerns, however, exposing it to the deposit run that took it down (Son 2023) and exposing the supervisors for not having acted on their own warning.

That should give pause for reflection.

Bad Apples

A theme that has received prominent discussion as a causal factor in financial crises is fraud. In the case of the subprime crisis, it was noted that none of the executives of the major failures went to jail: "Too big to fail, too powerful to jail?" is a question raised by Pontell, Black, and Geis (2014) in assessing why there were no major prosecutions – although hundreds of lower-level participants in the mortgage origination process were prosecuted (Nguyen and Pontell 2010). In a retrospective, Griffin (2021) identifies from a survey of the literature what he terms "a cohesive narrative that conflicts of interest and the malfeasant features it generated played a central role in the financial crisis." Nguyen and Pontell (2010) describe the fraud as "built into" the financial system – that is, the system is structurally fraudulent in that "lax lending policies, poor underwriting standards, inadequate regulatory structure, and government oversight…entails significant amounts of fraud at various institutional levels."

From the perspective of the present author, there are three major problems with assigning fraud a key role in the subprime or other financial crisis. First, fraud is a routine part of economic activity and is subject to routine monitoring and prosecution. For example, the US Mortgage Bankers Association estimated that, in 2006, mortgage fraud cost the industry between US$946 million and US$4.2 billion (cited in Nguyen and Pontell 2010). For its part, the FDIC issues a regular "Mortgage Loan Fraud Industry Assessment Based on Suspicious Activity Report Analysis." The January 2017 report highlighted that the frequency of suspected frauds had risen substantially in the previous year (FDIC 2007).

The real issue, however, is not individual misrepresentations on mortgage applications by applicants who intend to repay, but "fraud for profit" – the latter is systematic (FBI 2007). That leads to the second point, which is that an allegation of fraud as a critical factor means "fraud for profit," which then indicts the entire system – the "built-in" argument noted above. Fraud then becomes all-encompassing, and its role in "causing" the subprime crisis and, by extension, the longer history of US banking sector crises becomes inherently an "American-exceptionalism" argument – which is uncomfortable to rely on.

Finally, this fails to explain the failure of the entire system of controls all at once but only episodically. In short, fraud will always be found,

will always be a contributing factor to the scale of the losses, but fails as a critical explanatory factor and, *a fortiori*, as a predictive factor.

Bad Models

Where the "fraud" explanation implicitly argues that the system was fine but there were bad apples in the barrel, a diametrically opposite explanation is to argue that the players were fine but risk models could not keep up with financial innovation.

Securitization is hardly new: it dates back to the 1800s, and the modern era, driven by securitization of mortgages, dates back to at least the 1970s (Kaplan 2014), if not the 1920s (Goetzmann and Newman 2010). The evolution of the overall financial system in terms of the relationships among the various types of intermediaries, their relative scale and so on would, of course, modify the system's behaviour. For example, Gorton and Metrick (2010) point to the role of repurchase agreements in maturity transformation as the real culprit – although they acknowledge that all explanations remain controversial. In the big picture of long history, specific innovations become a digression in a footnote.

Canada Has the Bugs but Not the Disease

In light of the above, it is interesting, from the perspective of a comparative US-Canada analysis, to review the list of causal factors the CDIC lists in its own analysis of failures of Canadian financial institutions (CDIC 1997):

Mismanagement:

- lack of business plans and coherent strategies.
- excessive risk taking in expanding market segments.

Control system

- inadequate control systems to ensure compliance with internal policies and supervisory rules.
- inadequate credit analysis and loan review procedures.

Poor asset quality

- excessive concentration in a single sector.
- excessive loan growth in relation to management, control systems and funding sources.
- overlending (high loan-to-debt serviceability ratio).

Poor liquidity

- lack of cash to ensure the continuation of operations, caused by mismatch of loans and short-term assets and liabilities.

Capital adequacy

- inadequate capital to meet all applicable regulatory requirements and/or operating losses.

Fraud and concealment

- material fraud, which generally includes the intent to deceive and/or an attempt to conceal insider abuse in self-dealing.

Parent (or group contagion)

- difficulties caused by problems elsewhere in the group.

This list would not be out of place in any analysis of the US system. And yet, Canada's system is stable and the US system is not. The bugs that are blamed for the disease of instability are present in Canada, but the disease is not. And this too gives pause for reflection.

The Tipping Point: Where Canada and the US Diverged

If we look to history for the answer, we need to focus on developments in Canada when its experience started to diverge. This was 1900. Prior to that date, Canada's financial institutions failed as routinely as those in the United States. After that date, they did not. In 1900, Canada had a decennial revision of its *Bank Act*. For reasons that are probably completely buried in the sands of time, Canadian policymakers gave a prime role in resolving bank problems to the Canadian Bankers Association.

Here it is salient to note that the first Canadian banks were founded by Scots, and there are many parallels between Canadian banking history and Scottish banking history. Scotland had a history of banking stability that contrasted sharply with the tendency of the English banking system to lurch into crises. In their magnum opus to explain banking sector fragility as a "game of bank bargains," Calomiris and Haber (2014) go into great depth in describing England's troubled history but spend little time on Scotland, despite noting the distinctly different history. Nor do they unpack Canada's similar divergence from its southern neighbour's experience, despite Canada's shared banking tradition with Scotland.

But there is a hook here on which to hang a theory. The implicit "model" that explains the sharp improvement in Canadian banking sector stability comes originally from the role of the Canadian Bankers Association. Bankers are strongly averse to instability because of the negative spillovers of such failures on their own banks and on the value of their bank charters. Any need for reinforcement of this perspective was provided by the fallout from the Home Bank failure in 1923. And thereafter, Canada handled incipient bank problems through mergers and acquisitions, not through allowing failures (see the Appendix for examples of how Canadian banks resolved incipient problems). The Canadian bankers controlled moral hazard through what we would refer to today as "social networks." The United States, by contrast, prioritized the role of market disciplines in controlling moral hazard.

This, along with the historical accident of decennial revisions that prompted regular reform between crises rather than driven by crises, allowed the Canadian system to address the externalities generated by bank failures directly rather than indirectly through market discipline, while adapting to changing societal needs and technological conditions on a timely basis. Importantly, the system ensured enough competition to be efficient, as concluded by studies explicitly focused on this point conducted over many years (see the online Appendix for an elaboration and citations).

Following the SVB failure, Canada finds itself in a familiar position of observing a simmering financial crisis in the United States driven by a factor common to both countries – in this case rising interest rates due to monetary tightening – and facing similar factors in the risk environment, including commercial real estate and the increased potential rapidity of bank runs due to the digital transformation. Again, the United States is driven to consider a range of reforms in the wake of a crisis, while Canada is not.

Discussion and Conclusions

There are several takeaway points from the consideration of the comparative history of Canadian and US financial sector stability.

First, the US response in the SVB crisis balanced concerns about stability with concerns about longer-term efficiency from a possible heightening of moral hazard risk. In this regard, the US approach to SVB was much more in line with Canadian historical practice and does not necessarily create the risk of future crisis since, as Canada has demonstrated, moral hazard risks can be addressed between crises. The most comparable episode to SVB in US financial history is the Latin debt crisis, when the US authorities, alongside their international counterparts in this instance, exercised regulatory forbearance and avoided a US banking crisis on that account. That is encouraging for the prospects of avoiding a banking crisis in the present moment given the continuing vulnerabilities in the US banking system and the unknown risks in the shadow banking system.

Second, while US authorities are subject to the political necessity to be seen to be taking action, Canadian authorities are not. Nonetheless, OSFI was quick off the mark to monitor liquidity in the Canadian banking system, given that the SVB failure was triggered by a liquidity crisis, and the Canadian Bankers Association, although no longer armed with the powers conferred on it by the 1900

Bank Act, was similarly quick to issue a statement asserting the stability of the Canadian banking system. Forewarned is forearmed.

Third, while history tells us there is no parallel between the United States and Canada in terms of banking crises, the same history shows that Canada's stability advantage was not quite as clean as it might appear. In this regard, see for example: the shrinkage of Canada's bank branches in the Great Depression, which roughly matched the number of US bank failures; the litany of trust and loan company resolutions paralleling the US S&L and banking crises of the 1980s-1990s; and the collapse of Canada's ABCP market during the subprime crisis in parallel with the collapse of similar instruments in the United States. Moreover, Canada's comparative stability also arguably owes something of a debt to serendipity – for example, the timely deregulation of interest rates for reasons unrelated to the benefit that Canada enjoyed as a result when accelerating inflation massively escalated the US savings and loan crisis. Accordingly, there is no basis for complacency. The present paper does not make the case for Canada to pat itself on the back. The SVB moment is, after all, the first such crisis in the age of social media, online banking and an unprecedented disruption that is unfolding in terms of the way we work flowing from the changes wrought by the pandemic and that are to come in the age of artificial intelligence.

Finally, while the evidence strongly argues that Canada did not buy stability through a grand trade-off with efficiency, since the US propensity for crisis has little to do with economic efficiency gains from optimizing competition in financial markets, this is not to argue that there is no trade-off at all between these objectives. Working within a regulatory/supervisory model that gives appropriate weight to the many and often destabilizing negative externalities of allowing financial institutions to fail and that acknowledges the de facto impossibility for depositors to judge the soundness of a bank from the quality of the marble in its foyers or the implications of the footnotes in its annual reports, it is possible to craft a financial sector policy that nudges the system toward greater efficiency while courting some additional margin of risk.

For example, the major Canadian banks reported Common Equity Tier 1 (CET1) ratios well above the regulatory minimum in 2022 (Rush 2023). From the perspective of the banks, this might reflect the need to maintain buffers above regulatory minima for risks not captured by the formal regulatory framework, including, for example, various uncertainties facing the economy, such as the historically high ratio of debt to income in Canada. From the perspective of the economy, however, it might reflect excessive prudence, as reflected in the fact that the margin between the prime business lending rate and the rate to small and medium-sized enterprises has tended to be the highest in the OECD (Kronick and Bafale 2022). In light of the narrative in this Commentary, one would be hard pressed to attribute the gap reported by Kronick and Bafale (2022) between the average spread for Canada (2.26 percentage points) and the United States (0.26 of a percentage point) to the treatment of moral hazard concerns in dealing with troubled institutions.

An informed reading of our own history – including reflecting on the Porter Commission's advocacy for bank entry into conventional mortgage lending despite the mismatch in terms of assets and liabilities that this entailed – suggests that Canada has the margin to push for greater efficiency in its financial institutions policy. And, as also informed by its own history, this margin might be credited to the fact that, a century ago, in response to the last major bank failure in Canada, the collapse of Home Bank in 1923, Canada took the right decision about how to deal with the negative externalities of bank failures. The rest is history.

Canada has avoided its own banking crises over the past century, but it has not escaped the macroeconomic consequences of US banking crises. Nor would Canada escape the macroeconomic consequences of any knock-on financial trigger in the wake of the SVB failure, whether in the

formal banking system or in the shadow banking system. The main takeaway lesson from Canada's experience, when compared to that of the United States, is that there is no grand trade-off between economic dynamism and efficiency and instability. Instability is a choice made by prioritizing moral-hazard concerns over the negative externalities that come from bank failures. Moral-hazard issues are addressed far more effectively through regulatory design formulated in quiet periods rather than in the heat of a crisis. Economic efficiency can be pursued by fine-tuning the scope for risk taking through competition and regulatory design.

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