Banking Sector Viability and the Public Purse: Is There a Link between Public Sector Balances and Banking Sector Economic Performance?

By

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Formation) and Employment in Manufacturing versus Finance, Insurance, Real Estate and Business Services as % of Total Economy, Selected Countries 1970-2008

(Source: Costantini 2013)

	Manufacturing		F.I.R.E.B.S.	
	Investment	Employment	Investment	Employment
CANADA				
1970	15.08	22.89	29.51	7.31
2008	5.53	11.37	39.95	17.94
FRANCE				
1970	16.56	24.23	46.73	7.62
2008	8.48	12.58	53.93	19.10
GERMANY				
1970	23.72	35.76	30.59	6.10
2008	13.73	19.02	48.60	17.04
USA				
1971	14.09	29.91	31.06	9.25
2008	9.74	9.82	35.22	20.93

Banks demand austerity and "sound finance"

- Nowadays, banks are cheer leaders in support of fiscal austerity. For example, in support of the significant austerity measure of the last two federal budgets in Canada, we have:
- Mary Webb, Scotiabank Economics: *"Markets may find the lack of immediate reduction in the deficit disappointing. However, Canada's net debt to GDP is stabilizing and the measures underway should at least trim the federal deficit to less than 1% of GDP within two years, a milestone that not many developed nations can claim."* (Fiscal Pulse – March 21, 2013, p. 1)

http://www.gbm.scotiabank.com/English/bns_econ/fedbudget.pdf

- Craig Alexander, TD Economics chief economist:

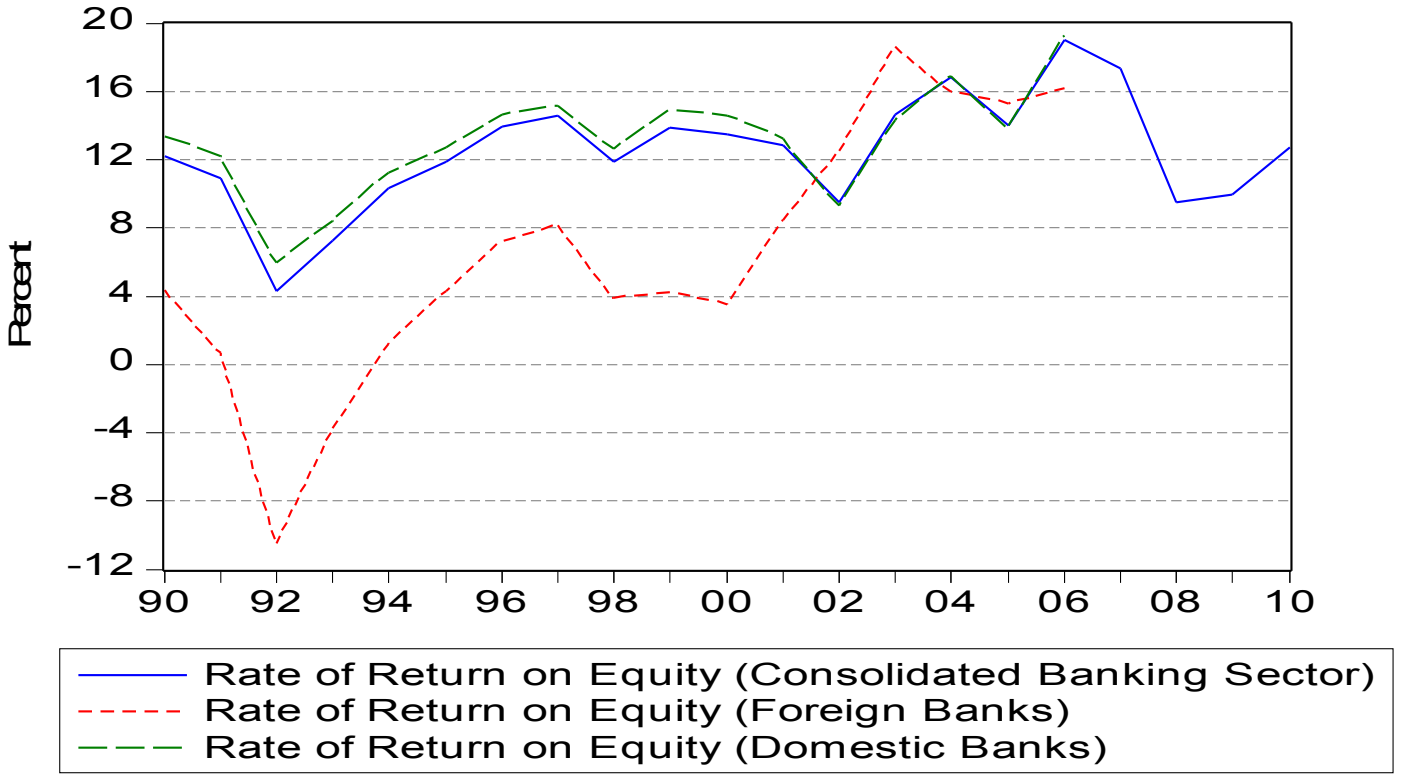
"(Budget 2012) was quite a prudent budget … the government provided support to the economy when it needed it. They boosted spending. They increased stimulus and now that we're on the other side of the valley, it is time to rebalance." (CTV News Channel – March 29, 2012)

http://www.chrisalexander.ca/2012/canadas-leading-economists-on-economic-action-plan-201

The ambivalence of the banking sector

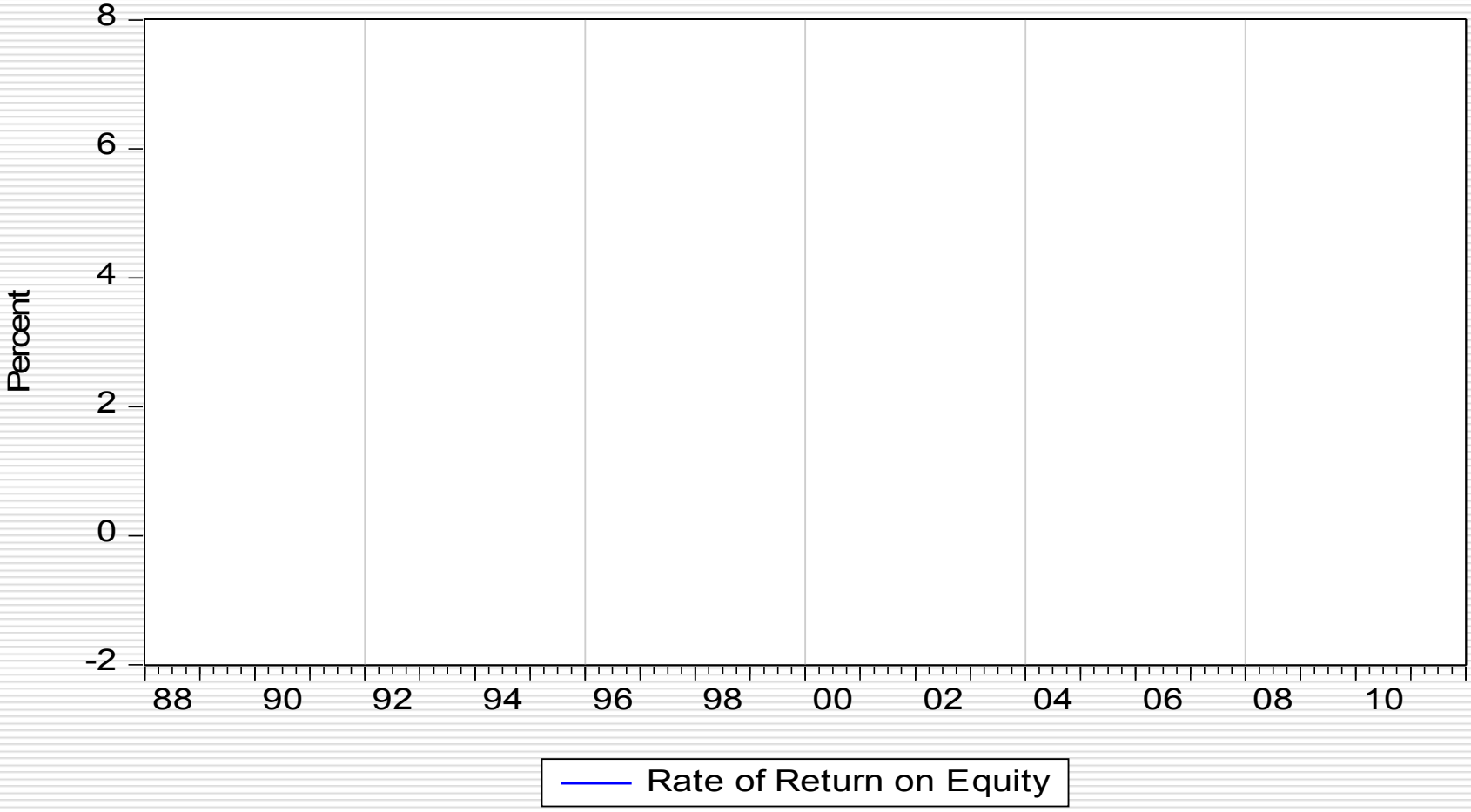
- Superficially, there appear to be "good" reasons for supporting austerity and "sound finance". After all, as we have seen in Europe (and, say, Latin America historically), many of these banks could face significant haircuts when governments default on their loans as a result of "excessive sovereign" debt.
- However, one would think that, without growth (which would ensue from a policy of austerity), banks can also suffer losses. A reminder of this danger can be when banks can take a hit from bankruptcies that are common during recessions (see, for instance, after 2007). Although the connection is not one-to-one, rates of return are certainly affected by bankruptcies, thereby entailing lower equity/net worth for the banks concerned (see Figure 1a and 1b).
- But has the financial sector become sufficiently divorced from the real economy that it is no longer dependent on productive private sector investment and output growth and relies more and more on the "paper economy"?

Figure 1a: Rate of Return on Equity of Chartered Banks in Canada: Canadian, Foreign-Owned, and Consolidated Banking Sector, 1990-2010 (Annual Data)



Source: Bank of Canada, Banking and Financial Statistics (Various issues)

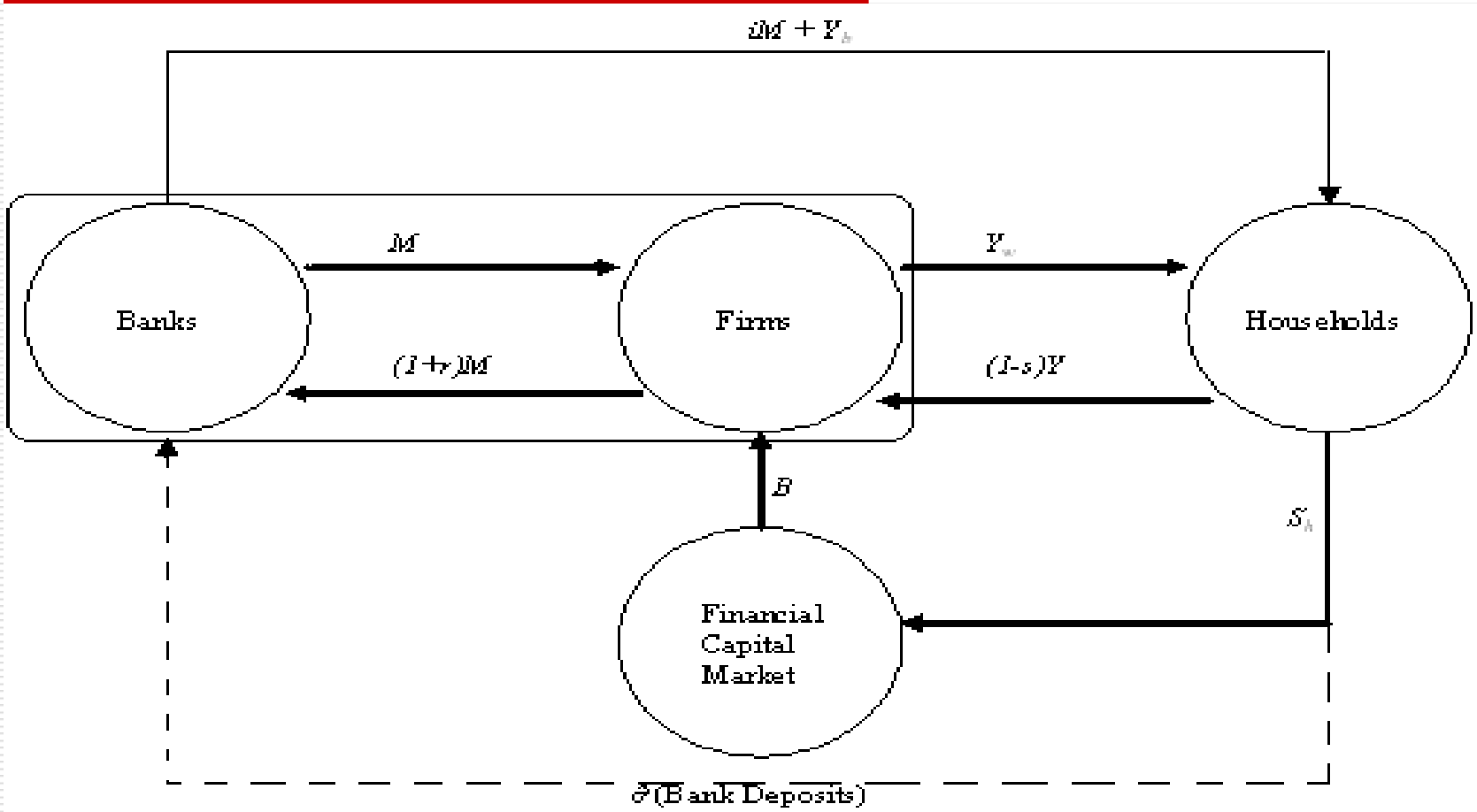
Figure 1b: Rate of Return on Equity of Canadian Banking Sector, 1988-2011 (Quarterly Data)



Could It Be that the banking sector has become "de-coupled" from the real economy? The metamorphosis of commercial banking

- Some of the literature on financialisation suggests exactly this implication (for discussion, see Seccareccia 2012-13).
- It is true that historically banks played the primary role of financing the short-term needs of business enterprises and were, therefore, dependent on real private sector growth.
- Financial markets handled the long-term financing of investment, reflecting essentially the counterpart of household saving, since business enterprises were net borrowers and households net lenders.
- Given the institutional structure that regulated and prevented speculative excesses, bank profits depended directly on growth of the productive sphere --- that is to say, bank revenues were associated with expansion of loans for production and were earned primarily from their interest income --- i.e., the interest spreads (multiplied by the overall loans outstanding less loan defaults).
- Problems of commercial bank viability (and bank failures) could potentially arise because of sharp movements in household liquidity preference (as Keynes had emphasized during the 1930s) but, given the institutional structure of the early postwar period, as long as the central bank would intervene as a lender of last resort, fluctuations in household liquidity preference would not sufficiently short-circuit the banking system.

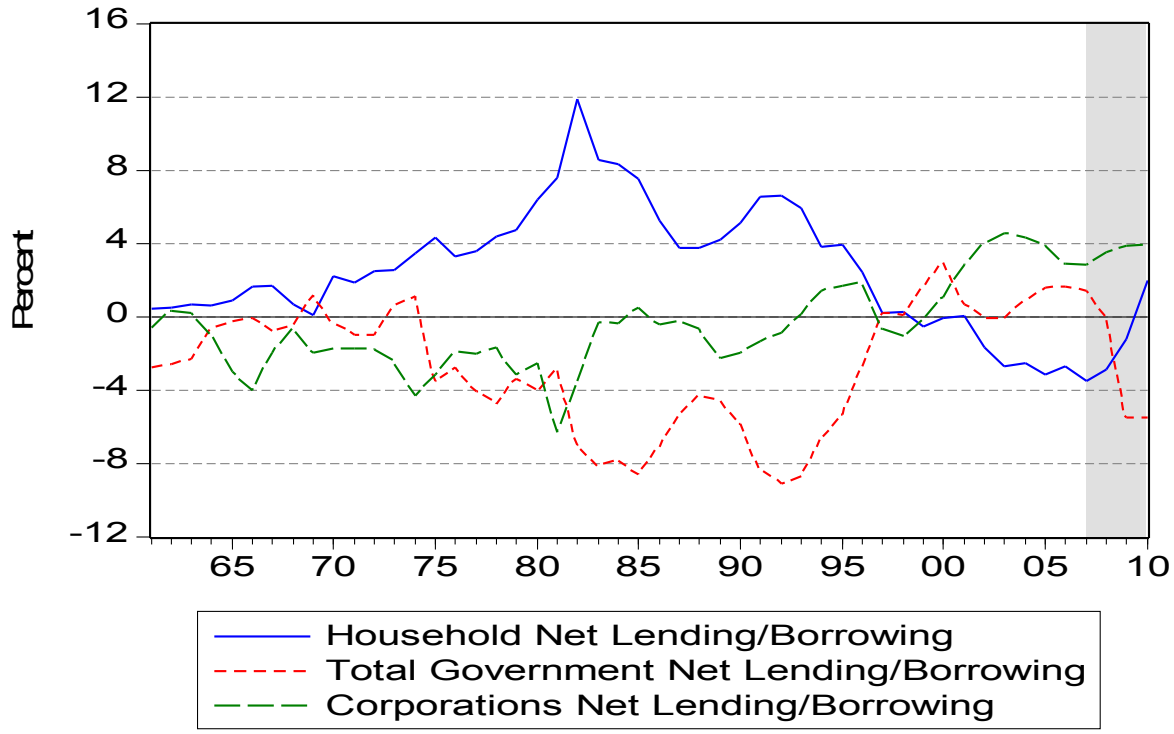
Figure 2: Traditional Role of Banks in the Pre-Financialization Era



The metamorphosis of the banking sector

- 1. This model of commercial banking has been somewhat stood on its head under what has been described by many as a process of "financialization". Instead of industry being the net borrower vis-à-vis the banking sector, growing profits and retained earnings associated with fairly flat business investment have slowly transformed (or "rentierized") the non-financial business sector itself into a net lender that seeks profitable outlets that provide high financial returns for its internal funds (see Fig. 4 below).
- On the other hand, households have become net borrowers (see M_h) and have thus become an additional source of revenue for business enterprises from the increasing net spending of the household sector.
- 2. On the supply side, deregulation, globalization, and computerization have brought about a significant structural transformation of finance, especially over the last two decades.
- Banks have become financial conglomerates engaged in lucrative investment banking by layering their assets, engaging in cross-boundary arbitrage, and loosening credit by permitting the household sector to take on an increasing debt load without a concomitant rise in real personal disposable income domestically.

Figure 3: Net Lending/Borrowing by Major Sectors as a Percentage of GDP, Canada 1961-2010



Source: Statistics Canada, CANSIM Series V646937;
http://www.statcan.gc.ca/pub/13-020-x/2010004/tab-eng.htm, Tables 4,5, and 26.

Figure 4: Strategic role of banks during the financialization era: A "de-coupling"?

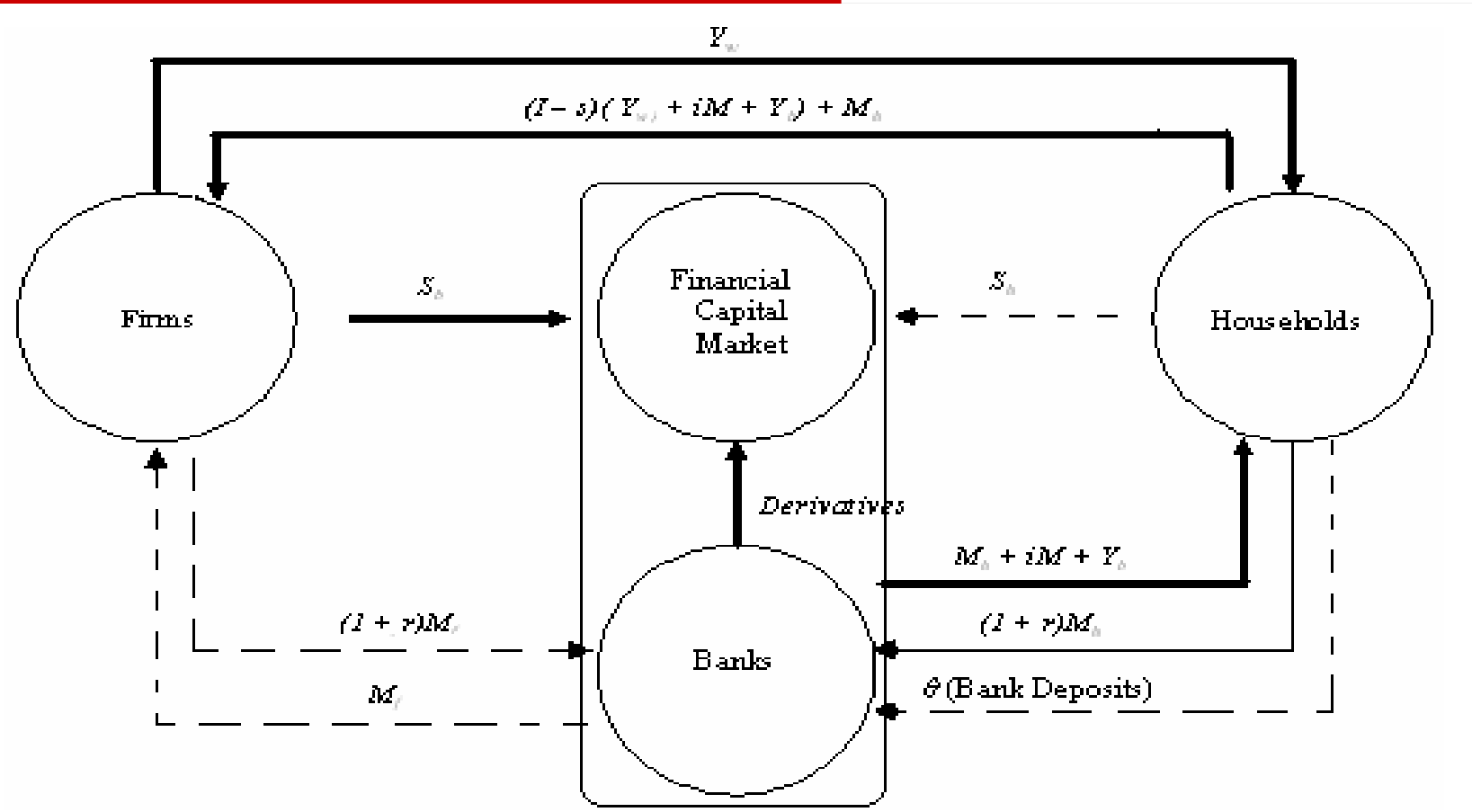


Figure 5a: Consumer Bankruptcies in Canada, 1991-2010

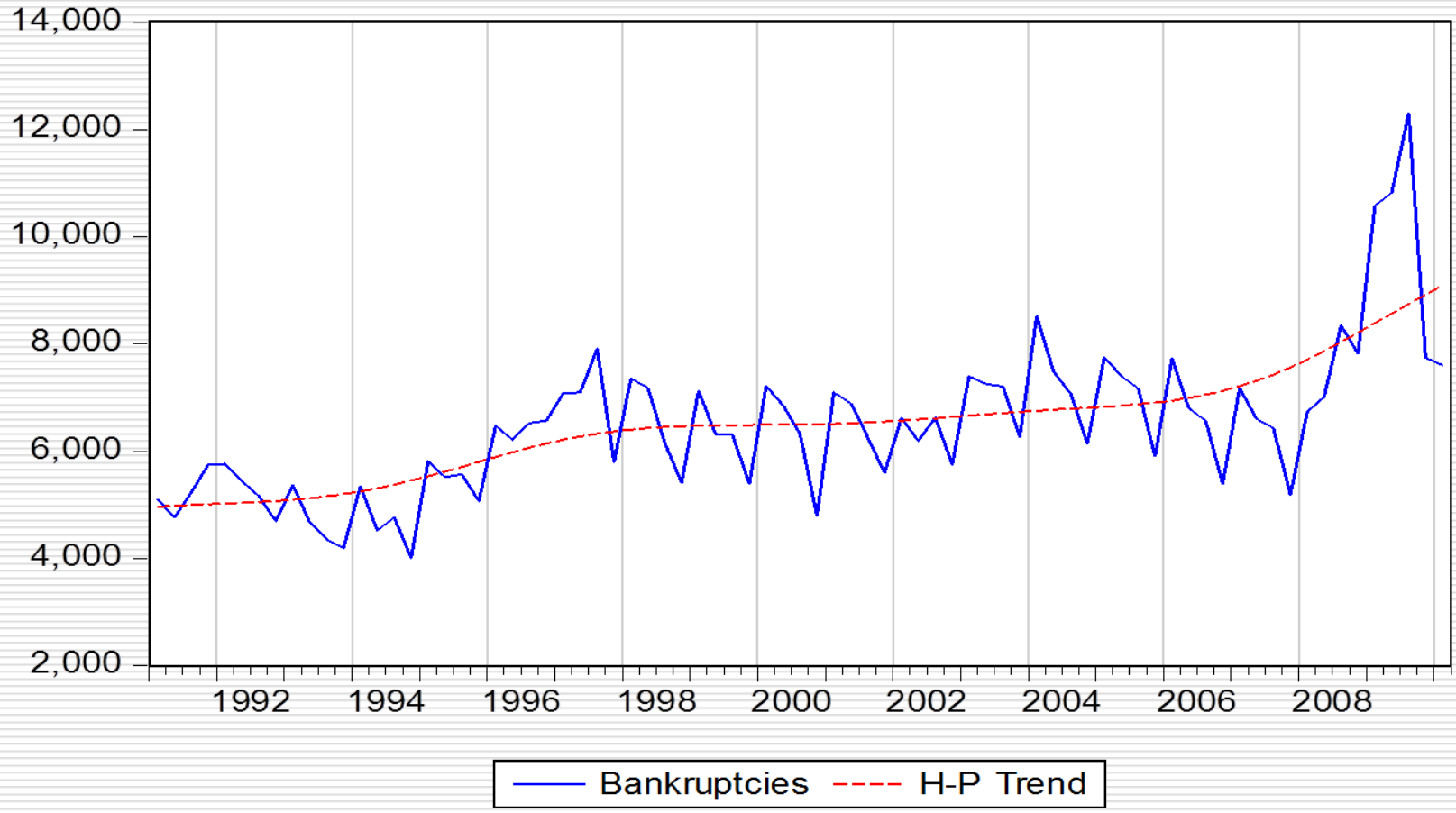


Figure 5b: Business Bankruptcies in Canada, 1991-2009

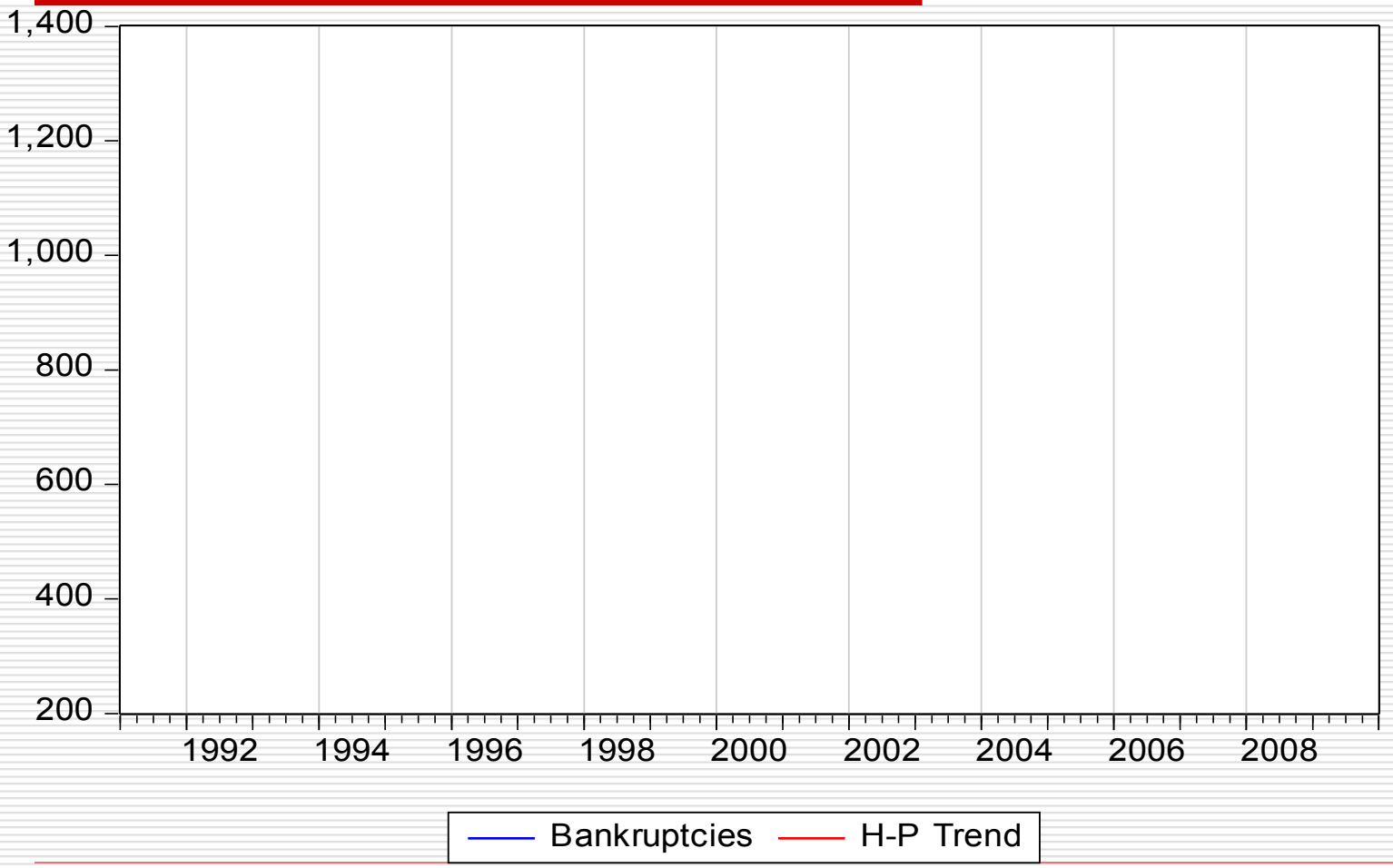


Figure 6: Traditional interest revenue as proportion of total operating revenues, Canadian banking sector, 1988-2011

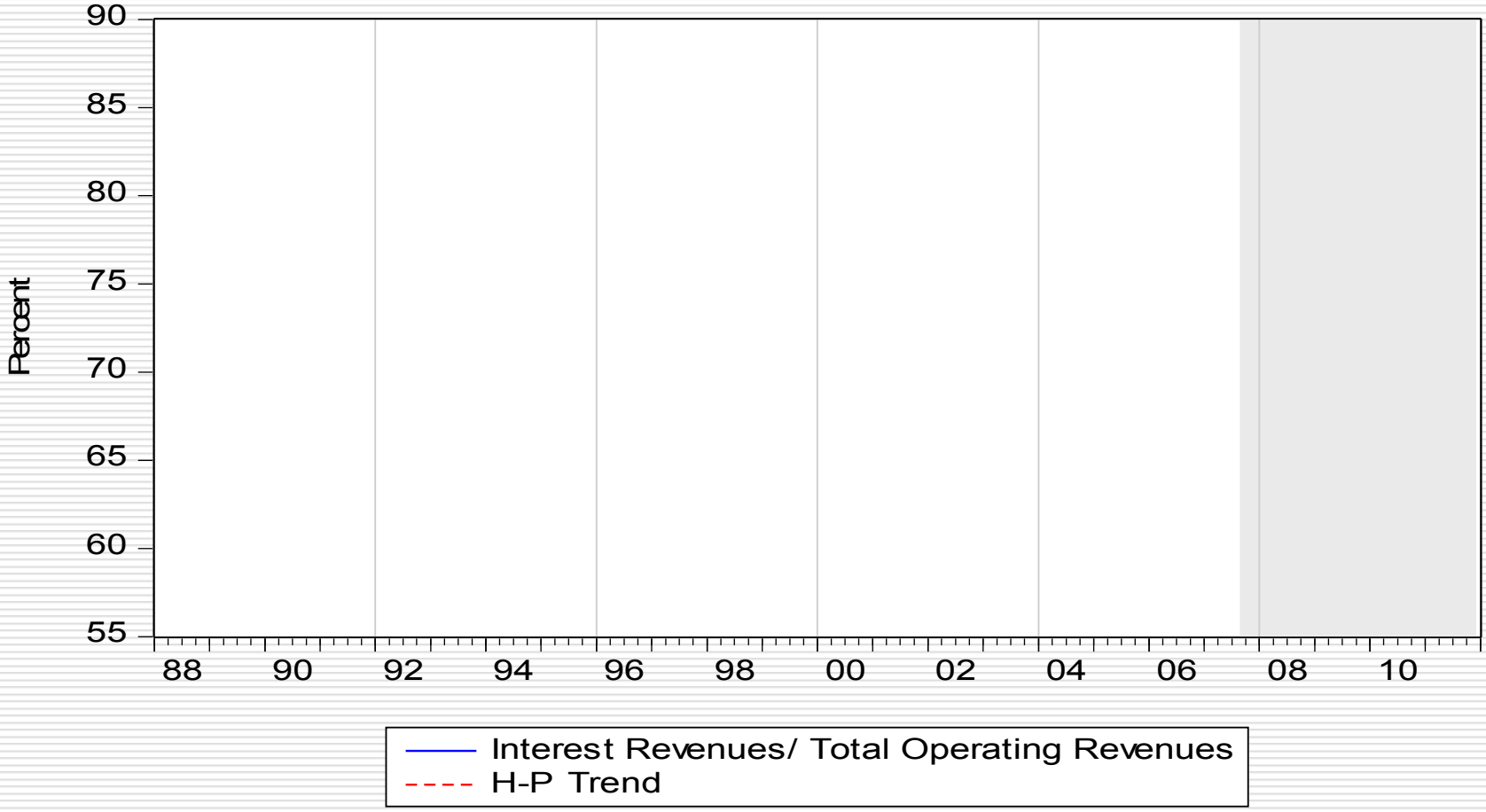
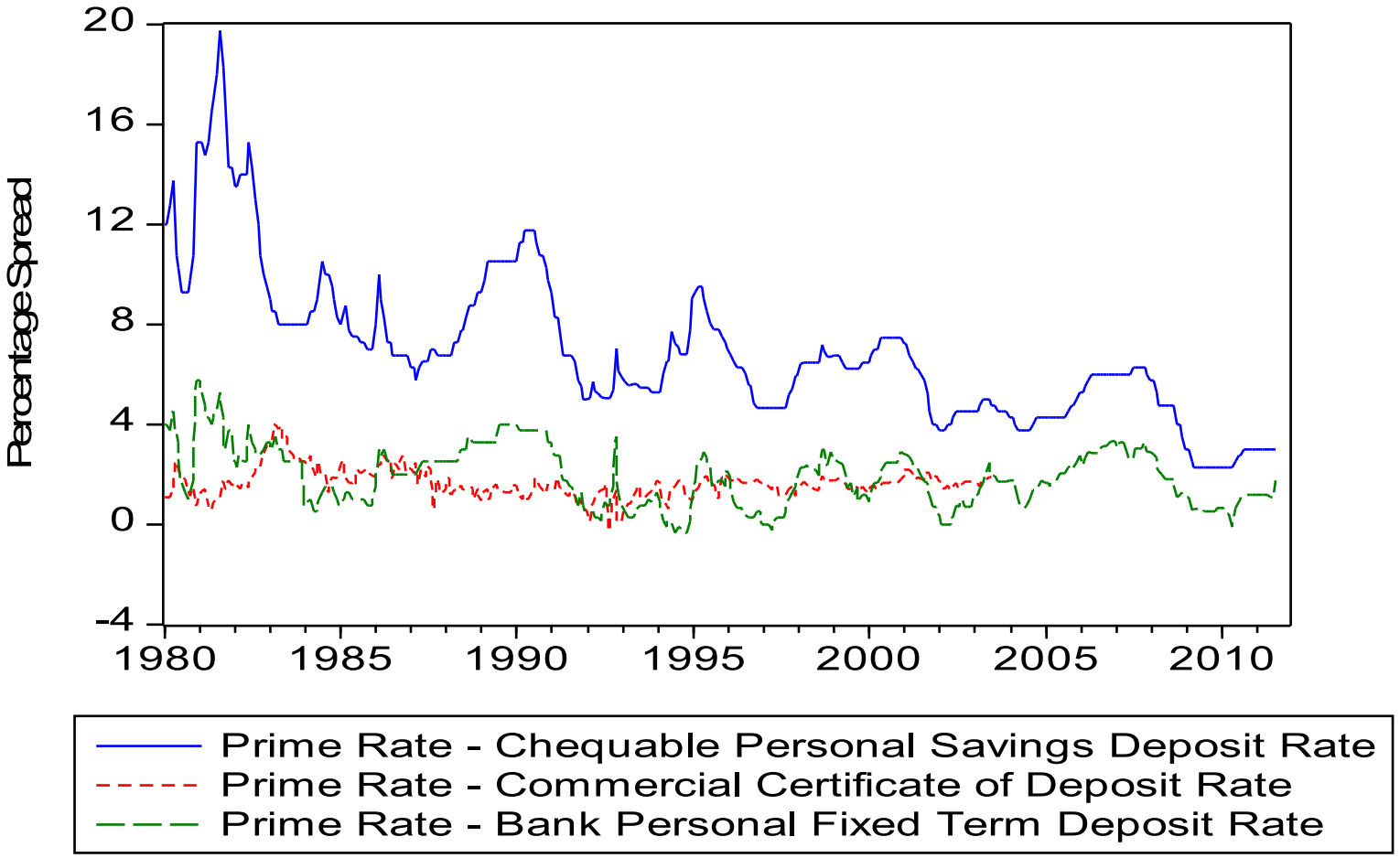


Figure 8: Measures of Interest Spreads in the Canadian Banking Sector, Monthly Observations, 1980-2011



Source: CANSIM V122492, V122495, V122506, V122515.

Determinants of Bank Profitability

- Banks advance credit-money by making out loans, *M*, and the nominal interest on the loan is *r*. They also receive deposits, D, and pay interest, *i*, on deposits. Assuming no other cost to banking (for simplicity) and following Ryoo (2013), the flow relations for a unit-bank are:
- $\boldsymbol{\Delta M + iD + Div_B = rM + \Delta D}$
- where Div_B are the dividends distributed to shareholders. If $\Delta M = \Delta D$, then $Div_B = rM - iD$. If they earn non-interest revenues in the form of bank fees and commissions, then we must add these bank fees (*BF*) as follows:
- $\boldsymbol{\Delta M + iD + Div_B = rM + BF + \Delta D}$
- In which case, the rate of return on equity would be merely *(rM – iD +BF)/Equity* from their balance sheet. Moreover, the same would apply if we had the "Losses" incurred, etc. Since the 1990s, most of the growth in profitability has been sustained by the growing importance of *BF*.
- It may be argued that *BF* has achieved a certain autonomous growth resulting especially from commissions, etc. obtained from bank activity in the derivatives market.

Have banks "decoupled" from the real economy? Policy makers present the banking sector as the bulwark of the Canadian economy

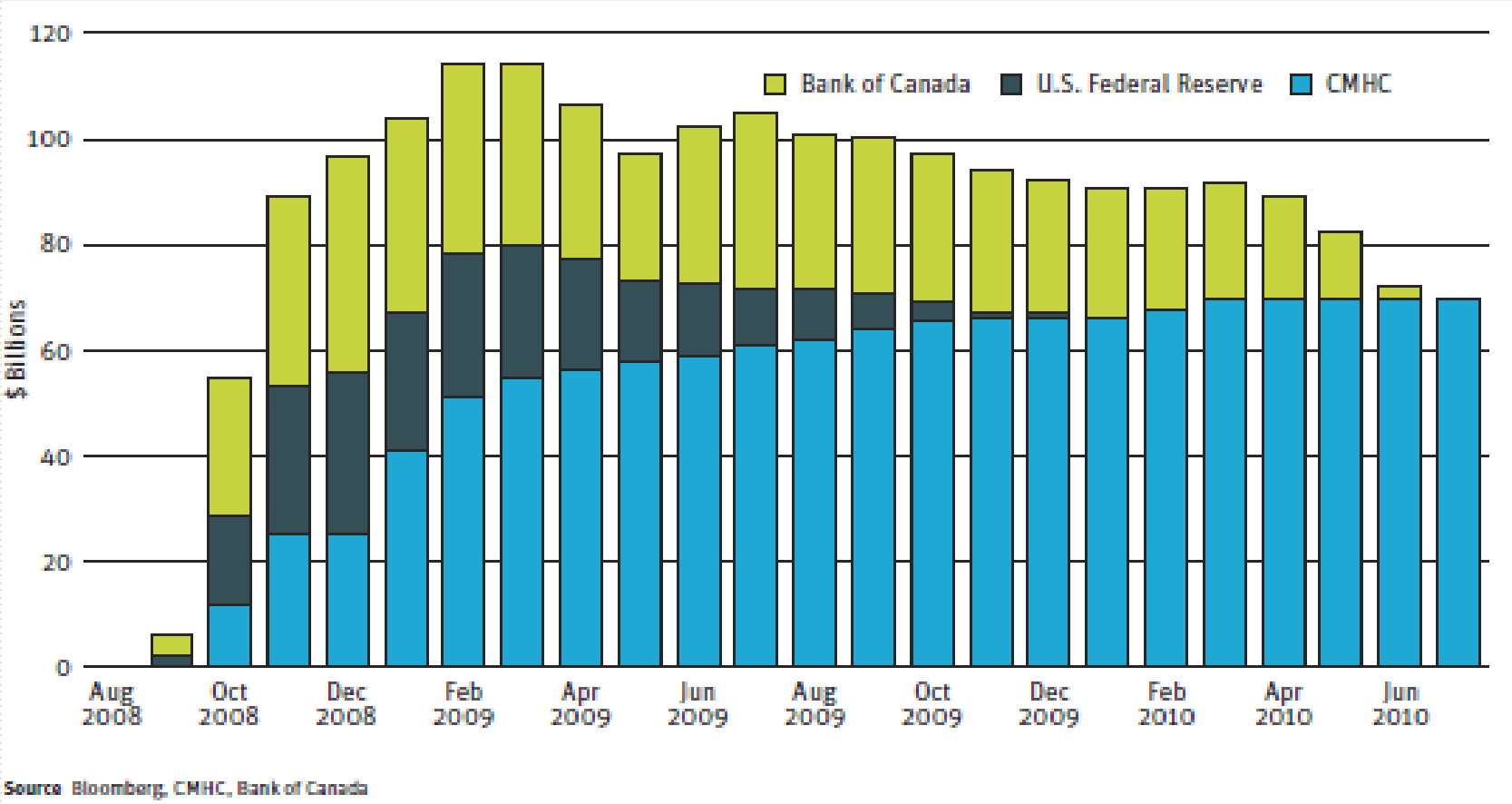
- These transformations would suggest some de-coupling *and* a growing fragility of the banking sector; yet Canadian policymakers have been bragging and have been self-congratulatory about the Canadian banking sector (Russell 2012). Here are some quotes:
- "*It is true, we have the only banks in the western world that are not looking at bailouts or anything like that … and we haven't got any TARP money*." Stephen Harper, Prime Minister of Canada
- "*Without wanting to appear arrogant or vain, which would be quite un-Canadian … while our system is not perfect, it has worked during this difficult time, I don't want the government to be in the banking business in Canada*." Jim Flaherty, Federal Minister of Finance
- *"… we have not had to put any taxpayers' money into our financial system in Canada, nor do I anticipate that we'll be obliged to do so*." Jim Flaherty, Federal Minister of Finance
- Despite the bragging and self-congratulation, the reality of the financial crisis shattered this rosy description. Much like everyone else in the Western industrialized economies, while denying it, the Canadian fiscal and monetary authorities did provide support of the financial sector during the crisis (see Lavoie and Seccareccia 2012, Macdonald 2012, and Russell 2012). In the case of Canadian banks, this took several forms.

Table 2: Estimated Extraordinary Support Summary (Macdonald 2012: 6)

Bank	Peak Support Date	Peak Support Value ($bil)	Peak Support to Company Value (Date of Peak)
CIBC[2]	March 09	$21	148% (March 2009)
BMO[3]	January 09	$17	118% (Feb 2009)
Scotiabank[4]	January 09	$25	100% (Feb 2009)
TD Bank[5]	September 09	$26	69% (Feb 2009)
Royal Bank[6]	March 09	$25	63% (Feb 2009)

Source: Estimates based on author's calculations (See Appendix 1 for methodology)

Figure 7: Total Support for Canadian Banks (Macdonald 2012: 11)



Source Bloomberg, CMHC, Bank of Canada

Support from the U.S. Federal Reserve and the Bank of Canada

- The U.S. Federal Reserve provided repurchase agreements from a minimum of overnight to a maximum of a year repos, which provided needed cash for many Canadian bank subsidiaries in the US. This Fed intervention was significant but it dried up by the end of 2009.
- The big five Canadian banks through their branches in the U.S. accessed three of the various programs available: the Term Auction Facility (TAF), the Commercial Paper Funding Facility (CPFF) and the Fed discount window. However the TAF was the most widely used by Canadian banks.
- Bank of Canada actions taken were essentially identical in design to the U.S. Fed programs. The Bank of Canada created two important programs. The most heavily used was the Term Purchase and Resale Agreements program (Term PRA), which loaned cash to the banks for periods ranging up to one year. The other program allowed the banks to receive loans using non-mortgage loans (such as car loans) as collateral although only after a 40% haircut (Term Loan Facility).

Canada Mortgage and Housing Corporation (CMHC) support

- While the first two remain within the domain of what can be generically described as "lender of last resort" facilities, it may be argued that these were exceptional circumstances. However, the support provided by CMHC was different from the U.S. Fed or the Bank of Canada programs since the central bank support came primarily in the form of loans.
- The CMHC, instead, was buying mortgages from the banks in the form of mortgage-back securities (MBS). CMHC's Canada Mortgage Bonds (or MBSs) are fully insured by the federal government. Hence, even if a mortgage payer fails to meet his obligation, it was fully insured by the federal government.
- Canadian banks were given the opportunity to access up to $125 billion by selling CMHC-insured MBS to the government. The willingness of the government to buy these assets enabled banks to access liquid funds at a time when they could not have secured these funds via normal financial channels at a reasonable cost, thereby preventing any bank failures in Canada. (Russell 2012: 6). While the actual estimated support for the five big banks of the MBS purchases was at $65 billion, the amount was substantial.

Table 3: Estimated Utilization of CMHC Programs ($ Billions) (Macdonald 2012: 19)

	Total Mortgages Sold as of Final Auction (March 24th, 2010)
TD Bank	$21.9
RBC	$14.7
CIBC	$11.8
Scotiabank	$9.0
BMO	$6.7

Source: Estimates based on the financial Statements of CIBC, BMO, RBC, Scotiabank, TD Bank and author's calculations as described in Appendix 1

What is the link between the banking sector's balance sheet and the public sector balances?

- With this massive support for what has been often described as the *most* prudent and solid banking system in the western world, this reveals banking for what it really is, namely a private-public partnership with huge externalities because of the "public good" (TBTF) nature of that activity.
- While evidence from the financial crises is overwhelmingly in support of the view that, without the government support, the banking sector would have derailed, the question of what role fiscal policy plays in the financialized economy over time is a somewhat unsettled question. Was the financial crisis an exceptional case or a more general phenomenon pertaining to the role played by public sector balances?
- In particular, are rates of return affected by government deficit spending. Is bank capitalization affected by the behaviour of public sector balances? Two separate tests were undertaken: (1) simple regression analysis; and (2) standard causality tests.

Table 4: Regression Analysis of Rates of Return in the Canadian Banking Sector, 1988-2011 (Quarterly observations)

Dependent Variable	Constant Term	Interest Spread	Non-Interest Revenues	Government Balance	Adjusted R-squared	D.W.	AR(1)
ROE	0.020	0.247			0.247	1.971	-0.492
	(0.29)	(1.91)					(-5.35)
ROE	-0.015	0.295	0.044		0.309	1.908	-0.499
	(-0.22)	(2.37)	(2.97)				(-5.42)
ROE	-0.015	0.339	0.130	-0.513	0.227	2.70	
	(-0.14)	(1.96)	(2.93)	(-3.77)			
ROE	-0.014	0.308	0.130	-0.222	0.317	1.920	-0.440
	(-0.20)	(2.41)	(2.93)	(-1.60)			(4.42)

* All explanatory variables are in first difference since all were or nearly were I(1) according to ADF test.

Table 5: Causality Tests of ROE and Government Balances

Pairwise Granger Causality Tests
Sample: 1988Q1 2011Q4
Lags: 1

Null Hypothesis:	*Obs*	*F-Statistic*
ROE does not Granger Cause DEFICIT/GDP	95	32.3910
DEFICIT/GDP does not Granger Cause ROE		11.4743

Pairwise Granger Causality Tests
Sample: 1988Q1 2011Q4
Lags: 2

Null Hypothesis:	*Obs*	*F-Statistic*
ROE does not Granger Cause DEFICIT/GDP	94	11.6150
DEFICIT/GDP does not Granger Cause ROE		1.45298

Pairwise Granger Causality Tests
Sample: 1988Q1 2011Q4
Lags: 3

Null Hypothesis:	*Obs*	*F-Statistic*
ROE does not Granger Cause DEFICIT/GDP	93	8.14381
DEFICIT/GDP does not Granger Cause ROE		1.21956

Pairwise Granger Causality Tests
Sample: 1988Q1 2011Q4
Lags: 4

Null Hypothesis:	*Obs*	*F-Statistic*
ROE does not Granger Cause DEFICIT/GDP	92	9.13924
DEFICIT/GDP does not Granger Cause ROE		4.42354

Pairwise causality tests of ROE and government balances

- We carried out simple Granger tests that varied the lag from 1 to 4 quarters for our two key variables: ROE and public sector balances. In two cases (with optimal lags of between 2 and 3) the calculated F-statistics were below the critical values when the null hypothesis was that "Budget deficits does not Granger-cause ROE", thereby suggesting that we could not reject the null hypothesis. But this did not apply when the lag was one quarter or four quarters!
- On the other hand, the computed F-statistics were always above the critical values when the null hypothesis was that "ROE does not Granger-cause Budget Deficits", thereby rejecting the null hypothesis.
- By implication, this would indicate that, in the Granger sense, variations in ROE could have caused changes in Budget Deficits; while, at the same time, we have evidence of reverse causality when the lags were 1 and 4.
- Depending on the lag length, there appeared, therefore, to be some evidence of a two-way causality.

Bank capitalization through public sector feedback

- While there is some limited empirical evidence to support the view that bank profitability is associated with an expansion of public sector deficits with a possible two-way causality, the positive feedback must necessarily also impact on banks' ability to recapitalize when facing losses.
- Consequently, one would also expect a link between paid-up capital reflected in bank equity (or net worth) and public sector balances. Annual balance sheet data available since 1970 was used to analyze the link between the two variables so as to establish a possible causal link.

Consolidated Balance Sheet of Canadian Banking Sector from the Office of the Superintendent of Financial Institutions

CONSOLIDATED BALANCE SHEET
OF BANKING SECTOR
April 30, 2012

ASSETS ($3,629,241,820,000)	LIABILITIES ($3,629,241,820,000)
1. Cash and cash equivalent	1. Demand and Notice Deposits
2. Securities	2. Fixed-Term Deposits
3. Loans	3. Cheques and other items in transit
4. Land, buildings, and equipment Less accumulated depreciation	4. Advances from Bank of Canada
5. Other Assets	5. Other liabilities
	6. Shareholders' Equity ($194,211,212,000)

Figure 8: Indicators of Bank Capitalization

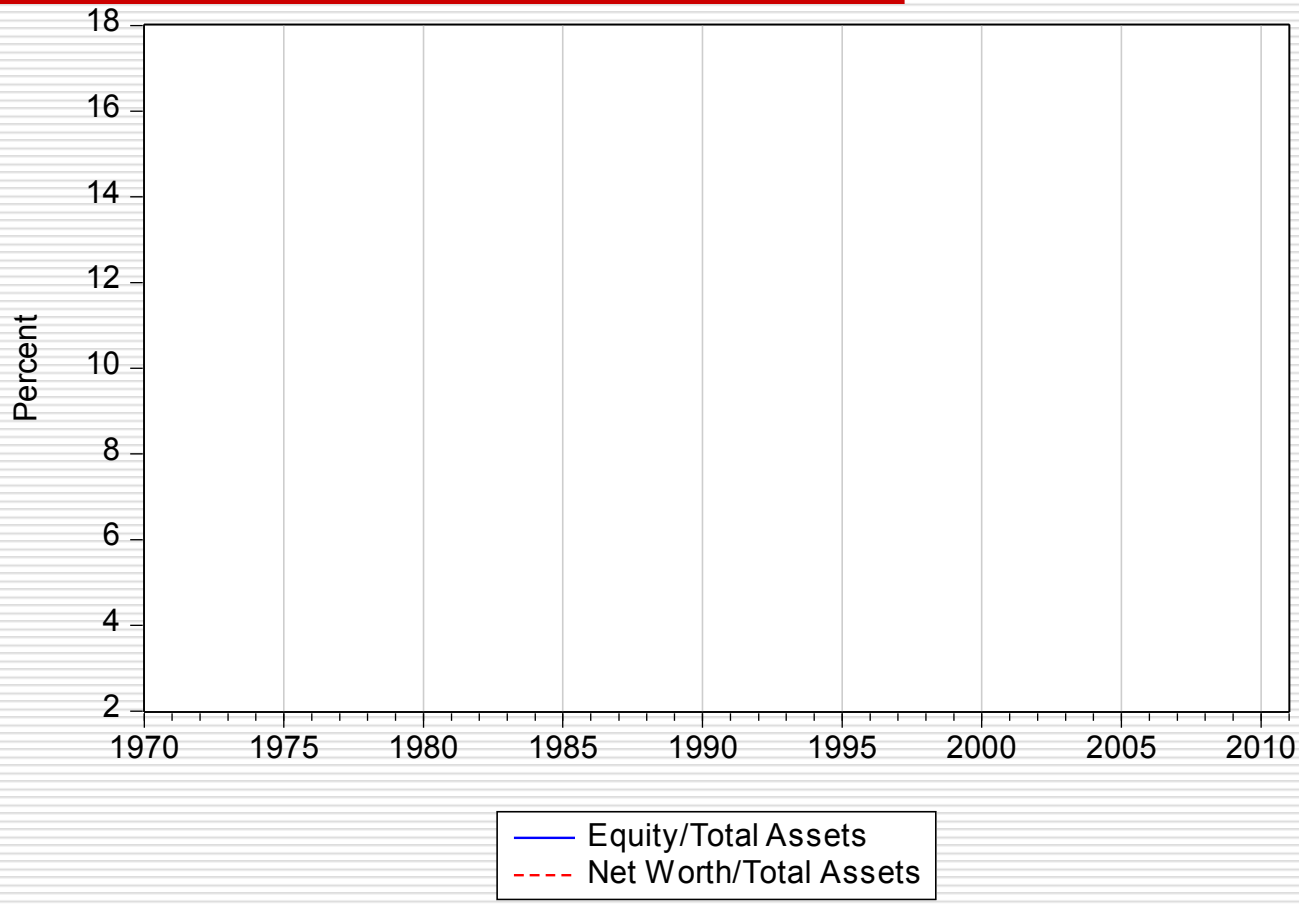


Figure 9: Evolution of Bank Equity/Total Assets and Public Sector Balances as a Share of GDP, Canada 1970-2011

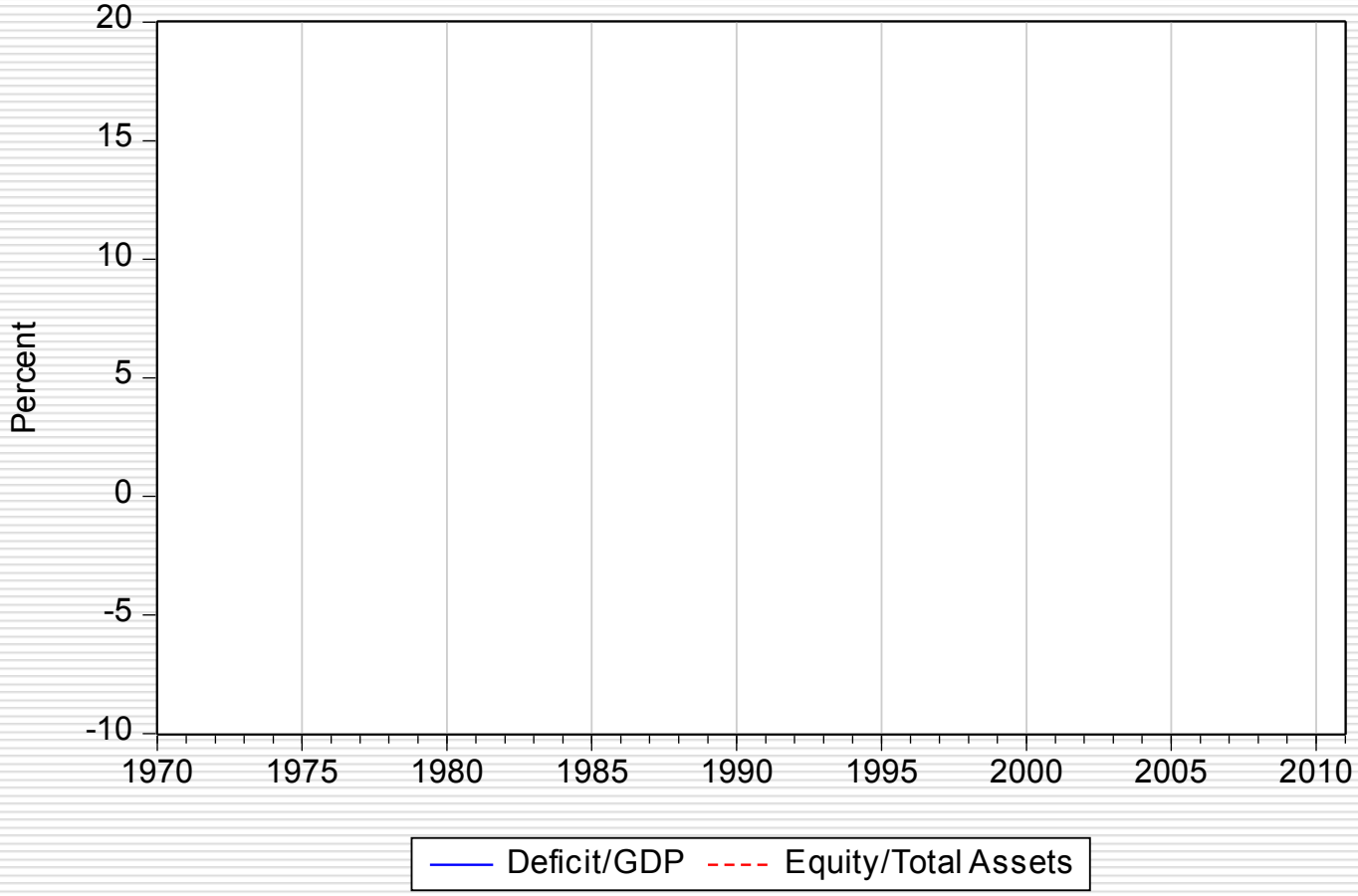


Table 6: Causality Tests

- Pairwise Granger Causality Tests
- Sample: 1970 2011
- Lags: 1

Null Hypothesis:	Obs	F-Statistic
DEFICIT does not Granger Cause EQUITYRATIO	41	0.05743
EQUITYRATIO does not Granger Cause DEFICIT		7.95283

- Pairwise Granger Causality Tests
- Sample: 1970 2011
- Lags: 2

Null Hypothesis:	Obs	F-Statistic
DEFICIT does not Granger Cause EQUITYRATIO	40	0.00983
EQUITYRATIO does not Granger Cause DEFICIT		6.42713

Analysis of causality tests

- We carried out simple Granger tests that varied the lag from 1 to 2 years for our two key variables: Bank Equity/Total Assets and Budget Deficits. In all cases, the calculated F-statistics were below the critical values when the null hypothesis was that "Budget deficits does not Granger-cause the Equity/Assets Ratio", thereby suggesting that we could not reject the null hypothesis.
- On the other hand, the computed F-statistics were always above the critical values when the null hypothesis was that "Equity/Assets does not Granger-cause Budget Deficits", thereby rejecting the null hypothesis.
- This would indicate that, in the Granger sense, variations in Equity/Assets could have caused changes in Budget Deficits; while, at the same time, we have evidence to support the null hypothesis that changes in Budget Deficit would not have caused changes in Equity/Assets.
- Hence Equity/Assets $\longrightarrow$ Budget Balances/GDP
- This is interesting evidence, in suggesting that it is changes in equity, resulting, say, from significant bank losses, which seem to trigger, with a lag changes, in public sector balances. However, given the feedback on ROE from our previous tests, this would mean that eventually banks will be rebuilding their equity.

Concluding remarks

- Bankers face an obvious dilemma. As producers of the means of payments and as critical financing units engaged in the financing of production/private capital formation, banks are by their very nature quasi public entities that rely on the support of the State. At the same time, they are the single most important players in the derivatives market. They benefit as follows:
- (1) They rely on the State for providing an institutional structure conducive to their own growth and expansion.
- (2) They rely on the government for funds, not only through the State's monetary arm, as the lender of last resort, but also because the fiscal arm of the government stands ready to absorb losses resulting from their speculative activities, as during the financial crisis, unless prevented because of dollarization or other forms of monetary integration (as in EMU).
- (3) They also rely on the State for the very things against which bankers are now preaching, namely through their support of fiscal austerity and the rejection of Keynesian-style deficit spending. However, as was shown, there was no significant "decoupling" during the financialization era since the 1990s.
- Instead, there is some evidence that the level of bank profits/losses are normally correlated with changes in public net spending, because the re-establish the private non-banking sector's balance sheet. Moreover, through the positive feedback effect that greater public net spending has on overall private spending, the banking sector eventually recoups its losses and recapitalizes perhaps because of the net spending of the State.