

***Regulatory Changes and Financial Structure: The Case of Canada**

CHRISTIAN CALMÈS*

JEL-Classification: G20, G21.

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1. Introduction

This study is documenting some facts regarding Canadian external financing: the financing provided to Canadian companies by external sources – not via retained earnings. In particular, I describe the financial trend, i.e. the trend in the way firms get their external financing. The main observation is that the Canadian financial system is becoming more market-based, with a greater proportion of financing being done through corporate bonds and equity. Moreover, the intermediaries providing indirect financing to Canadian firms are also more “market-oriented”, because they are increasingly involved with financial market activities such as underwriting securities.

The contribution of this paper is to relate this new trend to Canadian legislative developments, which allowed financial intermediaries, especially banks, to become more market-oriented. The regular revisions in Canadian financial legislation often happen when market conditions shift (FREEDMAN and GOODLET, 1992; ENGERT et al. 1999). They are usually followed by a series of financial innovations as intermediaries adjust to the new regulatory environment and

* Postal: Bank of Canada, Department of Monetary and Financial Analysis, 234 Wellington, Ottawa, Ontario, K1A 0G0. Correspondance: ccalmes@bank-banque-canada.ca; Home Page: <http://www.bank-banque-canada.ca/ccalmes/index-f.htm>.

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take advantage of it. In turn, these financial innovations can potentially lead to a structural break in the nature of external financing.

The motivation of this investigation comes from a simple intuition. Persistent market conditions contribute to developments in the external financing trend. For example, in the 1990s, FREEDMAN (1992) notes that

the increasing use of securities markets by corporate borrowers was probably the single most important factor driving the integration of the banking and securities industries. As the traditional bank loan lost ground to the bond, equity, and especially, the paper market (including bankers' acceptances), as well as to Euro-Canadian dollar and foreign currency issues, the banks became increasingly concerned about their ability to operate profitably and to compete effectively with both domestic securities dealers and with foreign banks and securities dealers.

The legislative restructuring is related in large part to market conditions (FREEDMAN and GOODLET, 1992), and both led to structural changes in the Canadian financial system. Consequently, this paper considers Canadian legislative developments and market conditions interchangeably,¹ and discusses how these can potentially contribute to the change in the trend of external financing.

The aim of the paper is then to document some stylized facts about the Canadian financial structure, by exploring these empirical facts in the context of the Canadian financial legislation. In the study, I also think of financial regulation changes in *global* terms. For example, persistent shocks can originate from changes in foreign regulation: if U.S. regulation allows a new financial product not available elsewhere, then some Canadian borrowers may be better served by an expanding (i.e., more complete) U.S. market. In other words, when a new financial product is only offered abroad, the Canadian financial system becomes, in relative terms, more incomplete than the foreign market. In this case, Canadian firms find the relatively more complete foreign market more attractive. Hence, the evolution of the financial system is also driven in part by global regulation (and financial innovations). Canadian firms have in fact been able to take an advantage of the larger diversity of financial products provided in the United States.² More precisely, data show that Canadian businesses rely more or less *equally* on the Canadian and U.S. bond markets, the U.S. stock market being increasingly used throughout the 1990s for the financing of high risk projects. The use of the U.S. market is indirectly related to regulation discrepancies between Canada

1 This consideration is obviously a simplifying approximation.

2 The U.S. bond market was encouraged to develop and become deeper than in other countries since the banking regulation kept the U.S. banking system artificially fragmented.

and the U.S., and also directly related to the high yield market developments in the U.S. For that reason, the study considers global regulation and innovation as potentially significant factors explaining the evolution that occurred in the Canadian financial system during the 1980s and 1990s.

As it stands, the Canadian financial system has evolved from its traditional four-pillar structure into a resilient, complex financial web.³ It is reasonable to think that this transformation is closely related to legislative revisions. The next section describes the trends I draw from the data, while the third section explains them. A simple econometric exercise suggests that regulatory revisions may help explain the structural trend-breaks observed in the data. The next section discusses a few additional remarks regarding the structure of the Canadian financial system. The last section concludes with additional policy considerations.

2. Indirect Finance

2.1. *Canadian banks and other financial institutions*

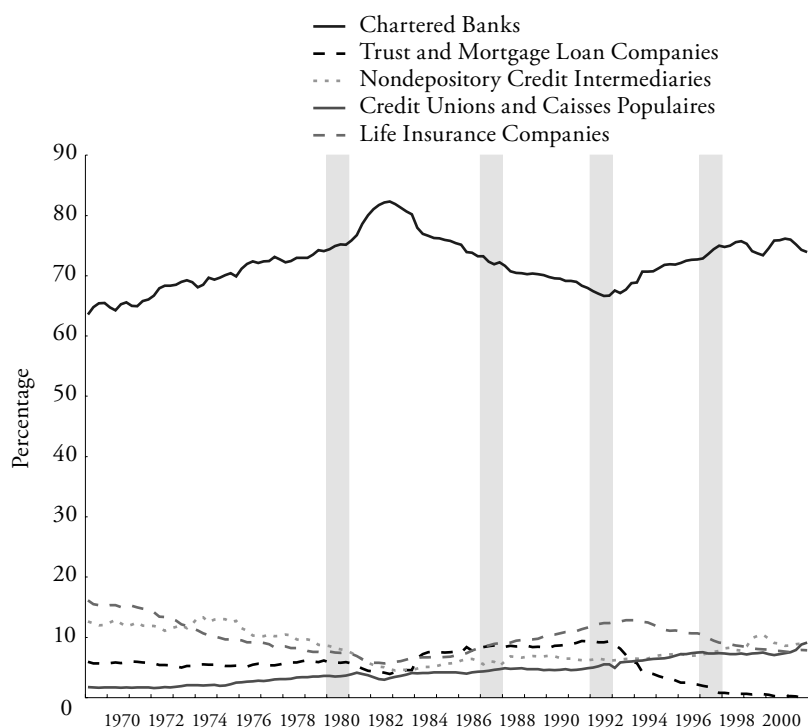
Indirect finance involves a financial intermediary that stands between lender-savers and borrower-spenders and helps transfer funds from one to the other. The principal financial intermediaries that exist in Canada are: (1) chartered banks; (2) trusts and mortgage loan companies; (3) non-depository credit intermediaries; (4) credit unions and caisses populaires; and (5) life insurance companies. Figure 1 provides a comprehensive way of looking at the 30-year-evolution of loan provision to non-financial businesses by these five categories.⁴

In the figure, the *Chartered Banks* category includes business loans, foreign currency loans to residents, bankers' acceptances, non-residential mortgages, and leasing receivables. Securitization is not included since it does not constitute a purely indirect financing activity and would correspond to only a small fraction of this activity. It should also be noted that the series for non-residential mortgages and leasing receivables begin in October 1972 and July 1977,

3 Canadian financial system used to be divided into four distinct pillars: banking, insurance, securities, and trust services. Participants in each of these "pillars" were generally confined to offering products and services within their respective core businesses. For more detailed definition of the traditional financial system see BINHAMMER (1993).

4 For a detailed description of the data see Appendix A.

Figure 1: Shares of Non-Financial Canadian Business Loans Extended by Financial Institutions (in Canadian Dollars)



Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

respectively. Therefore, these two series were backcasted to January 1969, which is the starting point for most of the series used.⁵ The loans extended by *Trust and Mortgage Loan Companies* are composed of non-residential mortgages, leasing receivables, and short-term business loans. The category of *Non-depository Credit Intermediaries* also consists of business loans, non-residential mortgages, and leasing receivables. Finally, the loans extended by *Credit Unions and Caisses Populaires* is a category composed of short-term business loans and non-

5 For further details see Appendix A.

residential mortgages, while *Life Insurance Companies* category includes only non-residential mortgages.

The figure shows that trust and mortgage loan companies grew gradually until the early 1990s when they started to be bought up by the large Canadian banks. Recently, 75 per cent of loans have been provided by Canadian banks, having risen slowly from a low point around 65 per cent in 1992. The increasing share of banks has also been at the expense of life insurance companies whose share has declined slowly since 1994.

As explained in FREEDMAN (1998), this situation is partly related to the change in banking regulation that permitted banks to own trust subsidiaries. Indeed, after the 1992 amendments, most of these banks acquired trust subsidiaries either by purchase or creation. This is obvious from the figure: the vertical bar marking the 1992 amendments coincides with the reversal of a declining trend at banks. Since that time, banks have been gaining market share, primarily at the expense of the trust and mortgage loan industry but also from life insurance companies. Hence, with the regulatory amendments, the loan business has been increasingly absorbed by Canadian banks.

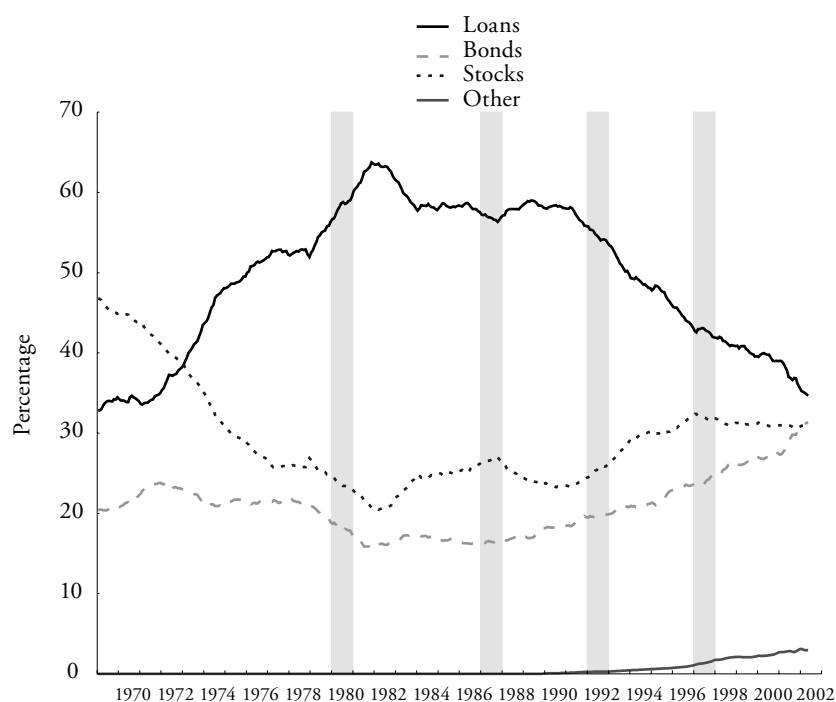
2.2. *The loan business*

While the share of Canadian banks has been stable relative to other lending institutions, the financial institutions together have been losing market share to the financial markets in the provision of external funds to Canadian non-financial businesses. As illustrated in Figure 2, the trend in the Canadian financial structure is towards a more market-based system.

In the figure, the *Loans* category is the total of all intermediary or indirect lending described in Figure 1. More specifically, the *Loans* category includes total short-term business credit excluding commercial paper and securitization. It is the sum of business loans, chartered bank foreign currency loans to residents, bankers' acceptances plus other business credit by institutions (non-residential mortgages and leasing receivables). The *Bonds* category includes bonds and debentures plus commercial paper issued by non-financial corporations, while *Stocks* consists of shares outstanding. Finally, the *Other* category includes other sources of external funds such as special purpose corporations (securitization). This last category captures those items that can neither be defined as purely direct or indirect type of financing.

The vertical bars once again correspond to the periods in which significant regulation occurred. The overall picture does not change much when the same four series (loans, bonds, stocks, other) are expressed relative to nominal GDP. In other

Figure 2: Sources of External Funds for Canadian Non-Financial Businesses

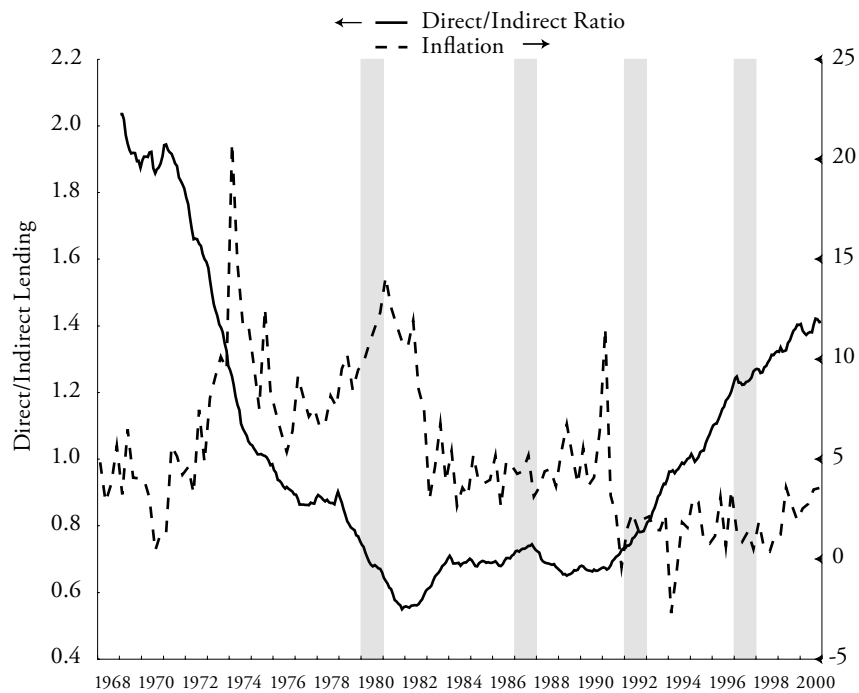


Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

words, Canadian financial institutions have been experiencing a relative decline in the market share of their loan portfolios. More precisely, there has been a relative drop in loan business, from approximately 60 per cent of external financing in the early 1980s to just under 40 per cent in recent years. At the same time, bonds, equity, and other category have all increased as a share of external funding.

To confirm that empirical fact, I divide the sum of bonds, shares and other by loans extended by financial institutions. The computation of this ratio is plot in Figure 3, which displays a U-shaped direct/indirect lending ratio, as expected. Indirect financing provided by financial institutions was gaining market share until the early 1980's when the situation stabilized. After 10 years of little change, until around 1991 or 1992, direct financing started to capture a growing share of external funding and has increased steadily ever since.

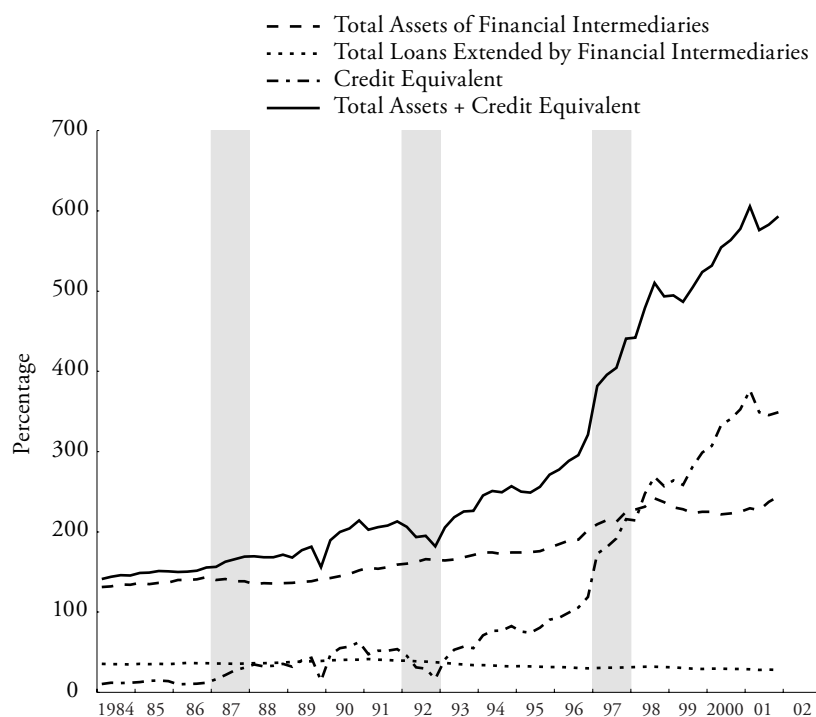
Figure 3: Direct/Indirect Private Lending



Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

As pointed out by ENGERT et al. (1999), the Canadian financial system is undergoing noticeable restructuring. For that reason, the traditional operations of Canadian banks are changing. For example, advances in computer technology enable financial firms to design and sell different types of financial instruments that are sometimes more closely related to direct market financing than to traditional loan business (ENGERT et al., 1999). Diverse financial innovations give banks more flexibility than they used to within the conventional business of lending (see FREEDMAN and GOODLET, 1998). FREEDMAN (1992, p. 373) makes the point that “while the Canadian financial system was historically characterized by a separation of functions among the different institutions, the separation has been blurring over the past 25 years or more, with the penetration by each group into the others’ primary areas of business accelerating over the recent period”. Hence,

Figure 4: Total Assets, Credit Equivalent, and Commercial Loans Extended by Financial Intermediaries as a Percentage of Nominal Gross Domestic Product



Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

the relative decline of the loan business can be seen as the result of a historical trend towards the blurring of the boundaries between financial intermediation and direct financing: there has been a shift toward direct financing and an increased involvement of banks in the securities-underwriting business.⁶

⁶ On that topic see the special issue of the *Journal of Financial Intermediation*, vol. 10 (3/4), July/October 2001.

2.3. *A credit equivalent series for Canadian banks*

There are several indicators showing that the Canadian banking sector is growing well despite the decreasing trend in the loan business. The banks' total assets as a percentage of nominal gross domestic product indicates that Canadian banks are quite healthy: these findings are similar to those obtained by BOYD and GERTLER (1994) for the U.S. banks.⁷ Indeed, as illustrated by Figure 4, although the loan portfolios by financial intermediaries have been slowly declining relative to nominal GDP, total assets of financial intermediaries have been markedly increasing relative to nominal GDP. The balance sheet numbers indicate a continual increase in banking relative to overall economic activity over the entire period.

However, even more important is the increase in off-balance-sheet (OBS) activities. These activities generate non-interest income *outside* of the traditional activities – i.e., OBS activities including market-related activities⁸. For that reason they are generally overlooked: it is customary to analyse the evolution of banks assets in the balance sheet only (D'SOUZA and LAI, 2003). If assets are increasing, income derived from them also must be increasing. The caveat of using balance sheet assets as a measurement of bank profitability is that it substantially underestimates their "true value" since it does not account for OBS activities. Hence, in order to get a clear picture of the banks, the non-interest income associated with these OBS assets must be accounted for. Indeed, Statistics Canada (The Daily 2002, p. 6) reported that, in 2000, non-interest income of Canadian financial institutions rose to \$23.8 billion, a 19.5 per cent increase from the previous year (74.3 per cent gain for corporate and institutional finance services): "The growth in non-interest income, which continued the trend seen over the last several years, indicated a shift away from income earned by deposits and loans to income earned mostly by providing fee-based services".

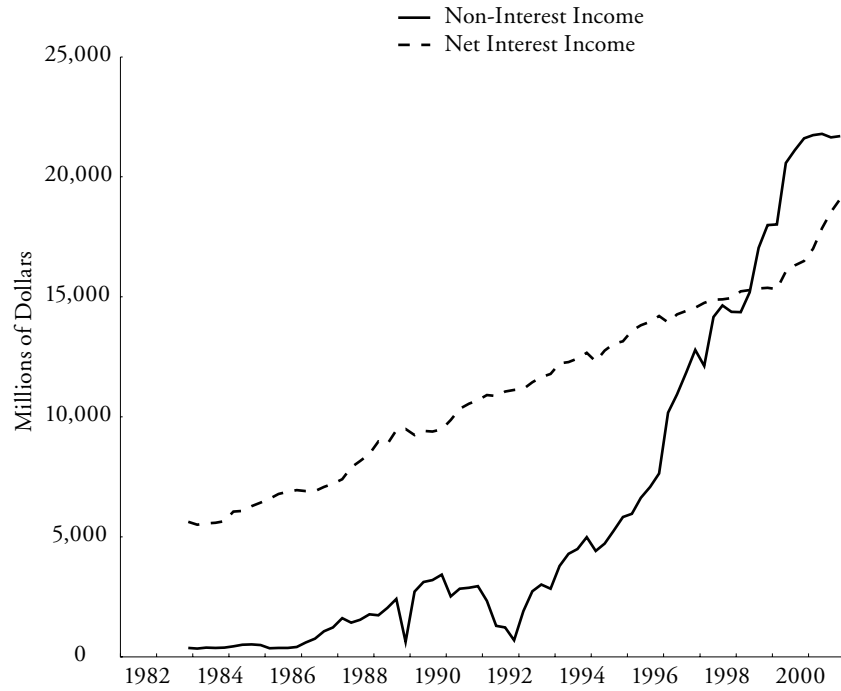
As shown in Figure 5, non-interest income has grown much faster than net-interest income. The data is consistent with the observation of FREEDMAN (1998, p. 36): "Another important trend in the operations of Canadian banks in recent years, in line with developments in other major banks worldwide, has been the shift towards off-balance-sheet activities and fee income". This has been particularly true during the last decade, and more precisely since the 1992 (and 1997) Bank Act amendments. The financial restructuring mentioned above⁹ explains

⁷ Obviously, other factors are required to completely assess the overall health of banks.

⁸ For a complete definition of non-interest income see Reporting Guide (2002) and Appendix B.

⁹ See ENGERT et al. (1999): financial firms design and sell different types of financial instruments that are sometimes more closely related to direct market financing than to traditional loan business.

Figure 5: Non- and Net-Interest Income



why a growing share of bank activities is done off-balance sheet. The markets for these alternative instruments have experienced high rates of financial innovation over the last decade or so.

OBS activities are by definition not reported as traditional lending, so it is difficult to get an accurate measure of a bank activities in these areas. Following the BOYD and GERTLER (1994) methodology, I use the non-interest income series to assess the importance of OBS activities. I build a new credit-equivalent series for these Canadian bank activities. The idea is to transform the non-interest income series into an asset equivalent series, conditional on some simplifying assumptions, as if this non-interest income had been generated from tangible assets in the same manner as regular lending. To account for the OBS activities, I adjust the measure of banks' assets by adding the credit equivalent component. Bank profits π can be expressed as a function of interest income I_b , interest expense E_b , loan loss provision P_b , total assets A , noninterest income Y_o , and noninterest expense N_o :

$$\pi = (I_b - E_b - P_b) + (Y_o - N_o) \quad (1)$$

Where the subscript o stands for OBS and b stands for on-balance sheet. Now assume that the income flow $Y_o - N_o$ is generated by some unknown asset A_o which has the same properties as A_b . I want to compute the unknown A_o as a credit equivalent of $Y_o - N_o$. Since these assets are generated by the same sources of capital, then I can assume that A_b and A_o generate the same average profit and returns.¹⁰ That is, their profit ratios are $\pi_b/A_b = \pi_o/A_o$ and

$$A_o = A_b * (Y_o - N_o) / (I_b - E_b - P_b) \quad (2)$$

A_o is the credit equivalent series for OBS items. It is the level of on-balance-sheet-like assets that would have generated a net interest income ($Y_o - N_o$), the actual non-interest income generated.

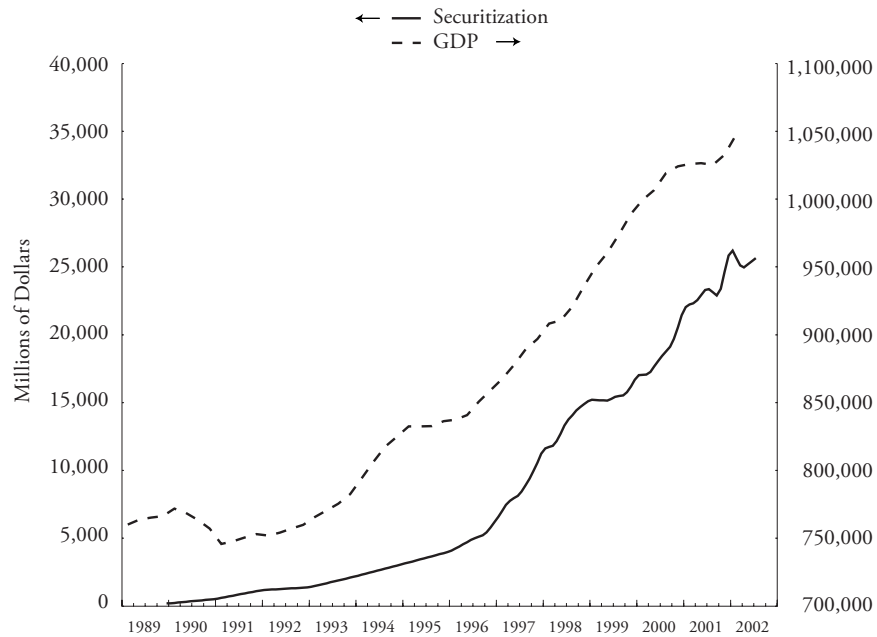
Figure 6 shows that, after the 1992 and 1997 amendments, this credit equivalent of OBS items began to grow more quickly. Thus, in the last ten years much of the growth in total (adjusted) banks assets, on- and off-balance sheet, has in fact come from non-interest income. To the extent that banks are competing over service fees, it is unlikely that this growth comes from increased prices in fee-based services: despite the fact that a detailed analysis of non-interest income is beyond the scope of this study, it is reasonable to think that the growth is driven by market-related activities such as trading income (STIROH, 2002; STIROH and RUMBLE, 2003). Yet another example of such non-traditional activities contributing to non interest income is securitization¹¹. As Figure 6 reveals, the use of securitization started in the early 1990s, and exploded a few years later.

Finally, note that the transition toward a more sophisticated system of financial intermediation is taking place not only in Canada but also abroad. The increase in OBS activities corresponds to a transition driven by regulatory changes, financial innovations, as well as by the technological progress accompanying them. For example, for the U.S., the periodical EconSouth (2002, p. 4) mentions that “[c]redit derivatives, loan sales markets, and the buying and selling of credit risk

10 This simplifying assumption does not account for eventual cross-subsidization across business lines.

11 FREEDMAN (1998, p. 33) also notes that banks increasingly participate “in the rapidly growing securities lending and repo markets, as well as to the use of securities to hedge interest rate swaps and other derivatives transactions.”

Figure 6: Short-term and Other Business Credit Securitization



provide hedges, and bankers have become much more receptive to using these approaches with the evolution of computer support.”

This common transition translates into more sophisticated relationships between firms, banks, and investors (see OLSON, 2002). Financial institutions provide more services to investors, while at the same time they are servicing the firms at different levels – i.e., the nature of their relationships has changed in a number of ways. As the financial system becomes more complex, financial intermediaries play the role of an expert adviser for both investors and firms (see GALE and ALLEN, 2000).

3. Regulatory changes and the financial trend

Banks' size and profitability have not declined: consistent with the transition mentioned above, data only suggest a relative decline in indirect financing (e.g., lending by Canadian banks, trust, other financial intermediaries) and a structural break in trend in the direct-indirect financing ratio. The 1980 amendments – the 1980 change in the Canadian financial regulation – was a first of a series, in recent history, that had a persistent effect on banks and other financial institutions. Canadian banks are all federally incorporated and regulated under the Bank Act, which defines their range of activities. A very important element of this banking legislation is the “sunset” clause, which requires a periodic reassessment and updating of the laws governing Canadian banks. In the past, the legislation provided for a decennial review. The 1992 Bank Act, however, shortened the review period from ten to five years. The formal review process led to significant Bank Act amendments in 1980, 1987, 1992, and 1997.

The 1980 Bank Act is important since it allowed banks to have subsidiaries in different areas such as venture capital and mortgage loans. This led to the creation or purchase of mortgage loan companies by the banks. Following the financial reforms in 1987 and 1992 the banks entered into a range of new businesses with a particular emphasis on OBS activities.

In 1987, Canadian banks were permitted to invest in corporate securities, as well as distribute government bonds (FREEDMAN, 1998). All major banks made substantial investments in the securities business and purchased control of most of the existing, large investment dealers. The legislative amendment of 1987 was put in place for accompanying market pressures. The 1987 amendments allowed financial intermediaries to conduct brokerage activities (FREEDMAN, 1998) – see also *The Regulation of Canadian Financial Institutions* (1985). As explained by FREEDMAN (1998), during the early 1980s Canadian banks were “concerned about their loss of business to direct market financing” and they “entered the securities business in a major way following the 1987 legislative change”. Figure 3 shows this pattern: the financial structure currently displays a trend toward a more market-oriented system with a pronounced trend-break associated with the implementation phase of the 1987 amendments. More precisely, the transition occurred between 1987 and 1989, as banks' customers begun to be able to invest on financial markets directly through their banks. After the change in legislation, and with the help of financial innovations, Canadian financial intermediaries became more market-oriented. In other words, intermediaries embraced

and promoted the trend toward market financing through greater direct involvement in financial markets.

In 1992, banks were given the right to enter the trust business through the establishment of, or acquisition of, trust companies. Over the next few years, the major banks bought up most of the trust companies still in operation. A contributing factor to enabling bank acquisition of trust companies was the financial difficulties many trust companies experienced following the collapse of the speculative real estate boom in the late 1980s. It is also in 1992 that banks were permitted to offer a number of in-house activities such as portfolio management and investment advice. As banks started these new type of activities, it might have attracted a larger fraction of depositors to investing on financial markets directly through their banks. Finally, in 1997, new legislation included various changes to update and refine the amendments made in 1992.

Given the nature of these amendments, it is legitimate to assume that they constitute a credible candidate as one of the underlying sources of the market-oriented trend. Indeed, part of the trend can be explained by the financial cycle and such factors as general economic conditions, market conditions, interest rates, inflation, exchange rates, technology and changes in regulatory environment. However, the accompanying regulation plays a significant role as well. Figure 3 depicts the realization of a stochastic variable, the direct/indirect lending ratio (Ratio), that follows a data generating process with shifts in its trend. To determine whether there is evidence that these shifts coincide with the amendment dates to the Bank Act (1980, 1987, 1992, and 1997) I estimate a simple regression using dummy variables that correspond to these dates. More precisely, I assume that there is a phase-in period of six months for adjusting to new legislation and, thus, I start the shifts two quarters after the amendments¹². For example, in order to capture the effect of the amendments that took place in 1980Q4, I use a dummy variable at 1981Q2. After investigating various specifications, I found the following to be the most appropriate (based on Chow tests)

$$\Delta Ratio_t = \alpha + \beta_1 \Delta Ratio_{t-1} + \beta_2 y80_t + \beta_3 y92_t + \varepsilon_t \quad (3)$$

where $\Delta Ratio_t$ represents the first difference in the ratio of *direct* to *indirect* financing; and $y80_t$ and $y92_t$ represent two amendments dummies. These dummy variables are defined as follows:

12 This phase-in period duration is found to be the most appropriate lag length.

$y80 = 1$ from 1981Q 2 on; 0 otherwise

$y92 = 1$ from 1993Q 2 on; 0 otherwise

Table 1 shows the results of the estimation using quarterly data. Shifts in the AR slope coefficient proves to be less significant. Dummy variables for the 1987 and 1997 Bank Act amendments are also found significant. These dummies do have the expected positive sign. Since $y92_t$ is significant, one interpretation of the result is that it is not per se the fact that banks were permitted to enter the securities business in 1987 that had the biggest impact. Rather, it could be the fact that they were permitted to expand their in-house activities in 1992, rendering financial investment more attractive to their client depositors.

Table 1: Dependent variable: $\Delta Ratio_t$

Variable	Coefficient	Standard error	T-statistic
Constant	-0.011	0.004	-3.197
$\Delta Ratio_{t-1}$	0.576	0.072	7.987
$y80_t$	0.014	0.005	2.960
$y92_t$	0.009	0.005	1.917

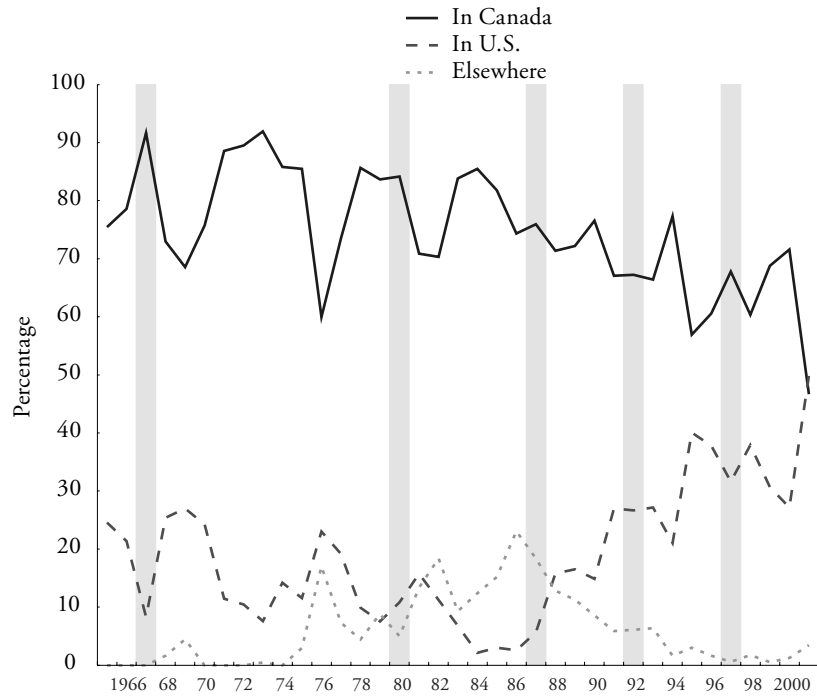
$R^2 = 0.631$, Durbin-Watson Statistic = 1.861

Before 1980, the direct to indirect financing ratio is characterised by negative drift as illustrated by Figure 3 and the significantly negative constant. However, after 1980, the drift term shifts to become slightly positive but insignificant (+0.003). The next significant change arrives with the 1992 amendment dummy, which raises the overall drift term to 0.012. Given these estimates, direct finance could become once again (as in 1969) twice as large as indirect bank finance.

Obviously, this specification for the DGP of Ratio is very simple and ignores possibly important cyclical and other economic, regulatory and technological factors (e.g. fiscal changes of the 1990s).¹³ It only highlights the significant impact that the concomitant regulatory changes may have had on the financing mix, among other possible factors.

¹³ To disentangle the respective contribution of these factors could prove to be a delicate task. It might eventually be tackled with an instrument variable approach for example.

Figure 7: Gross New Issues of Bonds and Stocks by Canadian Non-Financial Businesses



Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

4. Additional facts

4.1. Global regulation perspective

With direct financing, businesses borrow funds directly from savers in financial markets by selling them securities (bonds or stocks). Stocks are equities (residual claims) on the borrower's future assets, bonds are claims on the borrower's future income and assets. In Figure 7, I plot gross new issues of securities (bonds plus stocks)¹⁴ by non-financial businesses.¹⁵ The category *In Canada* is composed of

¹⁴ I am interested by external-financing requirements of Canadian firms. I judge the gross new issues measure appealing but it is possible to consider net new issues as well.

¹⁵ For a detailed description of the data see Appendix A.

all corporate preferred shares, common shares and warrants, plus bonds, issued in Canada. As the name suggests, the category *In U.S.* includes corporate shares and bonds issued in U.S., while the category *Elsewhere* contains the same securities issued in all other countries such as U.K., Switzerland, Japan, Germany, etc.

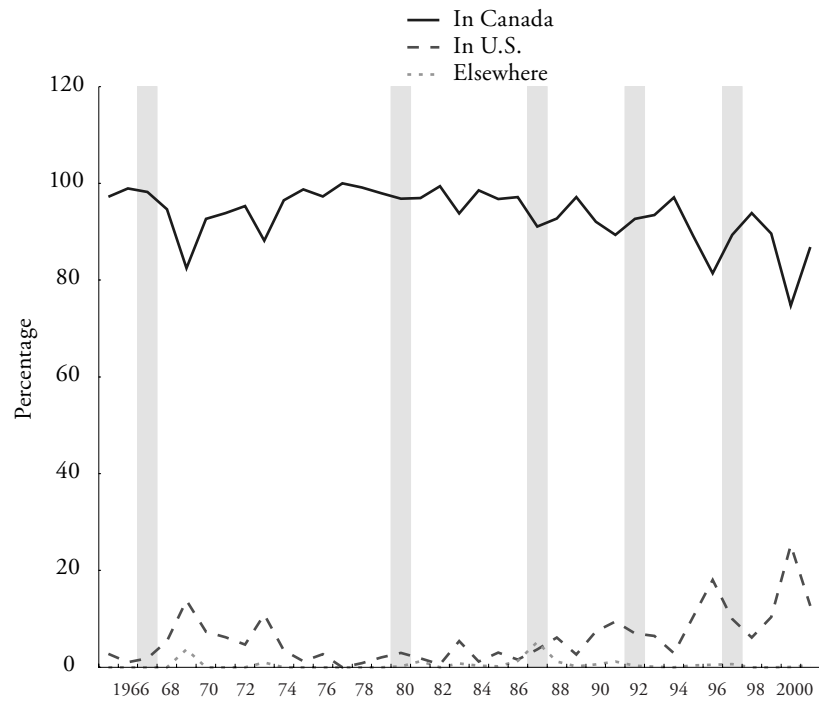
The figure shows that, abstracting from the volatility, there has been a relative decrease in gross new issues of securities (stocks and bonds) by non financial corporations in Canada since the early 1980s. The data reveal that the share of issues in Canada fell from around 80 per cent in the 1960s, 1970s, and early 1980s to approximately 65 per cent in the 1990s and recent years.

At the same time, the share of issues placed in the United States rose from less than 10 per cent in the 1980s to more than 35 per cent in recent years. This suggests that the market-oriented trend of the firm's financing that is taking place in Canada might benefit U.S. markets *relatively* more than Canadian markets. More precisely, the trend has probably fed several U.S. markets, including the high-yield bond market where approximately 40 per cent of the recent Canadian high-yield issuances in the U.S. came from the telecommunications sector.

If we look at Figures 8 and 9 we see that the relative decrease in the issues of securities (bonds and stocks) in Canada can be almost entirely accounted for by a relative decrease in stock issues. Figure 8 shows that, in the 1980s and 1990s there was a relative decline in gross new issues of stocks in Canada, offset by an increase of shares placed in the U.S. exchanges. At the same time, Figure 9 shows that, despite the volatility, the Canadian bond market kept its relative share generally stable, and on average accounted for approximately 50 per cent of total Canadian bond issuances. For Canadian bonds, ENGERT (2001) explains that the "growth in the relative importance of corporate USD issues over the 1990s came at the expense of outstanding EuroCAD issues and other currency issues." This can help explain how Canadian bond issuances have been preserved.

Finally, note that based on the outstanding amounts, stocks rather than bonds are the largest component of direct financing component. This was particularly true in the early seventies when bonds accounted for approximately 20 per cent of external financing, while stocks accounted for more than 45 per cent. In recent years, bonds have become a more important source of financing, jumping to around 30 per cent. Equity and other now represent only a slightly higher proportion of external funding (for similar findings see also MIVILLE and BERNIER, 1999).

Figure 8: Gross New Issues of Stocks by Canadian Non-Financial Businesses

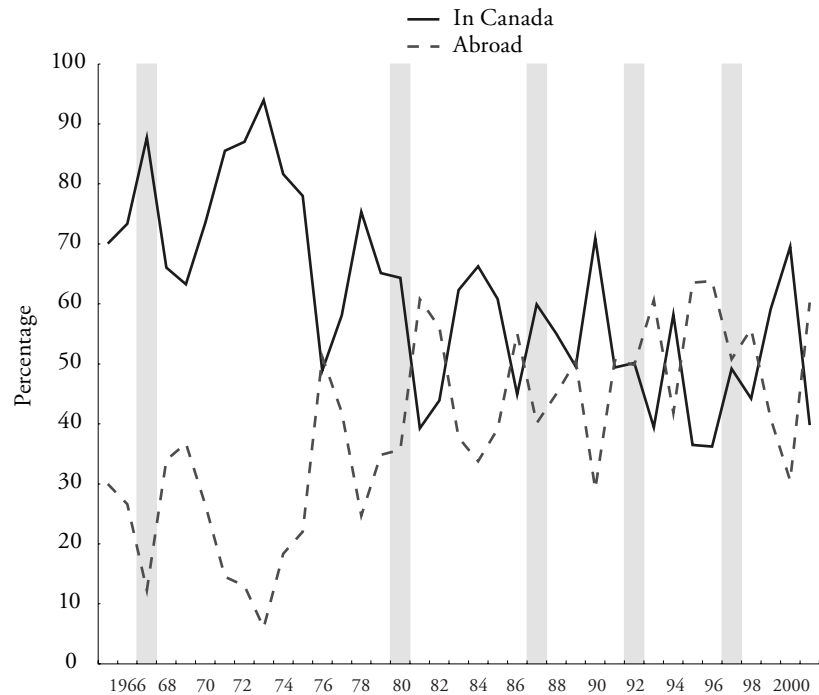


Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

4.2. Interpretation

The fluctuations of the three main components of the financial structure (loans, bonds, and stocks) are often market driven. For example, the change in the financial structure that we observed in the 1970s is partly attributable to the business cycle. In particular, inflation was so severe at the time that it likely had deep and persistent impact on the Canadian financial trend itself. The extended period of high inflation would have induced businesses and lenders to shift in favour of short-term loans and away from long-term instruments such as stocks and bonds. This can help explain why the equity portion of financing fell quickly throughout the 1970s, and why loans were increasing. (The fraction of bonds was relatively stable despite the absence of floating rate bonds at the time.)

Figure 9: Gross New Issues of Bonds by Canadian Non-Financial Businesses Issued in Canada with Issues Abroad

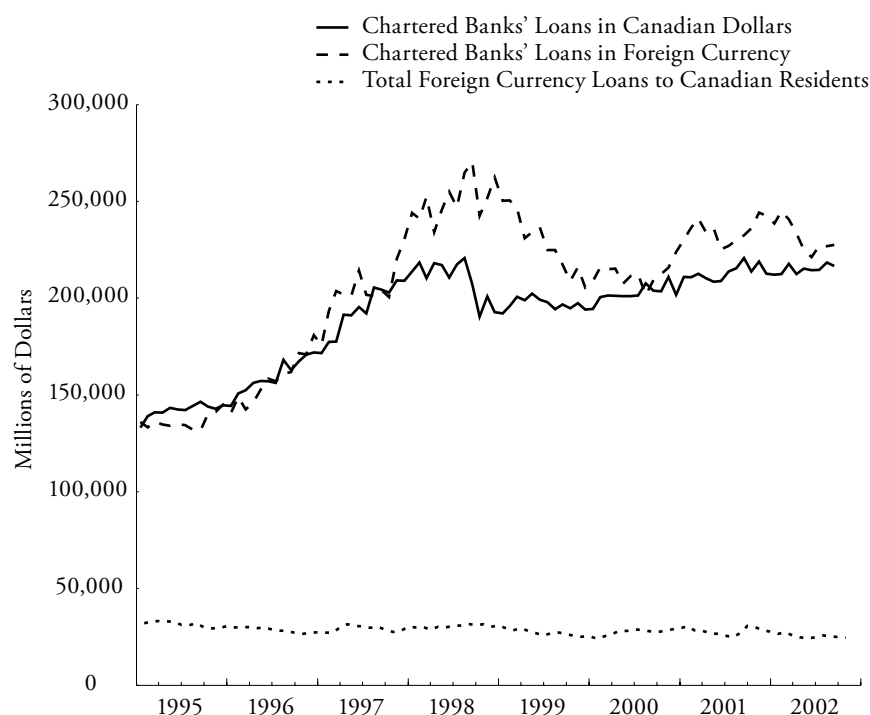


Note: The vertical lines represent the years in which significant revisions of the Bank Act were made.

However, the high inflation environment of the 1970's might have played a role in convincing policy makers to change the Bank Act as they did in 1980. ENGERT et al. (1999) note that there were three economic factors driving the legislative restructuring: the technological revolution, an ageing population, and the variability of inflation and interest rates. There is evidence that high inflation can cause financial innovation as agents attempt to deal with the erosion of wealth¹⁶, and it is plausible that it triggers regulatory changes. Data suggest that, in turn, these changes might have contributed to the evolution in external financing. We could explain some of the recent increase in the use of stocks and bonds based

16 For a theoretical explanation see ALEXOPOULOS (2002).

Figure 10: Total Loans at Chartered Banks: Canadian Dollars versus Foreign Currency

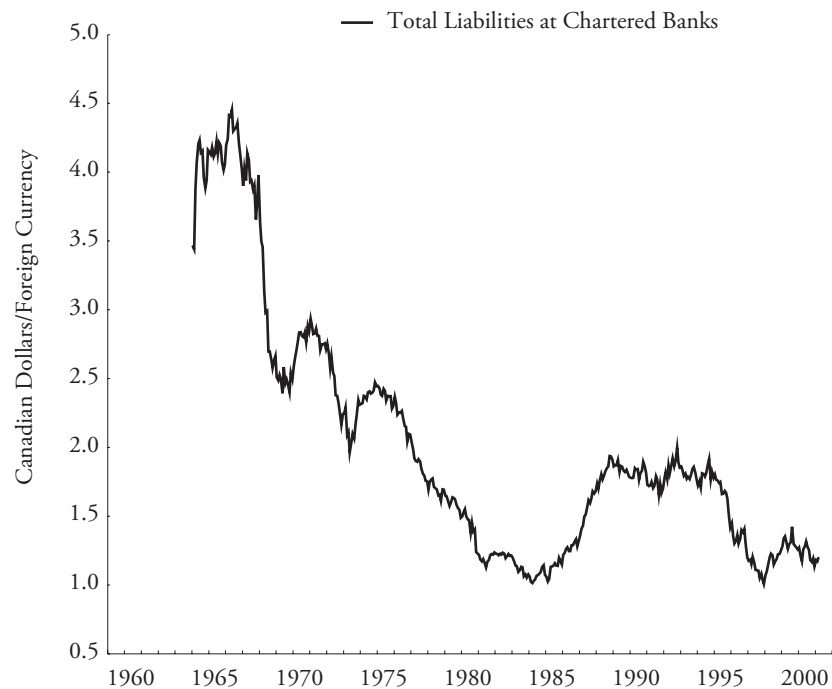


also on the same argument. Over the 1990s, the low inflation – high growth environment – may have contributed to the increasing share of direct financing, with regulation accommodating these market conditions (FREEDMAN and GOODLET, 1992; FREEDMAN, 1992; and ENGERT et al., 1999).

Interestingly, the composition of external financing in Canada seems different from that in most other countries and somewhat contrary to theory. Theory would predict that firms should first rely on internal financing, followed by loans, bonds, and, finally, stocks. One of the reasons for this order in the financial structure is that a firm tries to avoid the dilution of the ownership of his/her firm.¹⁷ In contrast, Figure 2 shows that the relative share of bonds is quite modest, and

¹⁷ There is an extensive literature dealing with this order, including the “pecking order” theory.

Figure 11: Total Liabilities at Chartered Banks: Canadian Dollars/Foreign Currency



actually inferior to equity's share of external financing. One possible factor to explain why equity financing has been larger than bond financing is the relative tax advantage in Canada of dividends and capital gains over interest income. A lower average tax rate on dividend, because of the dividend tax credit, will create a demand side effect in favour of equity.

Relatedly, one specificity of the Canadian experience is the maturation process of the Canadian corporate bond market (see CHOUINARD et al., 2001). This process originated in the early 1990s, when government borrowing started to decrease and corporate bonds started to fill the gap – public “crowding in.” During that phase, this market was left with lower liquidity, whereas the U.S. bond market was already quite mature. Indeed, in the past, due to regulation, the fragmented U.S. banking system encouraged companies to rely on the bond market earlier than elsewhere. Hence, Canadian firms might have benefited from the early maturity of the U.S. bond market.

Recently Canadian banks lent more to foreign companies (see Figures 10 and 11) and, with consecutive amendments, they became more market-oriented while Canadian firms started to rely more on financial markets. Data suggest that Canadian businesses have never relied more on bond markets than today: as it stands, the Canadian bond market is relatively large by international standards (it is ranked sixth in size, see MIVILLE and BERNIER, 1999). The interest of Canadian firms in issuing bonds involves foreign bond markets. Indeed, there is evidence that the Canadian bond market keeps lagging behind the U.S. in financial maturity. For example the lack of a meaningful high-yield market in Canada can be seen as one of the main reasons that a number of Canadian companies issue debt in the U.S. (high-yield credits account for roughly 40–50 % of the value of US dollar new [Canadian] issues each year). By comparison, between 1996 and 2001 new issues of high-yield bonds in Canada were only accounting for 3 per cent of total bond issues. Nevertheless, the fact that Canadian firms rely on the (more mature) U.S. bond market is not necessarily a concern, although it may constitute a poor diversification of funding. Further investigation of this matter leads to a simple conclusion: the U.S. bond market might allow some risky Canadian firms to finance themselves more easily in the U.S. than in Canada.

In a sense, the U.S. bond market could have the advantage of a “first entrant”. It was developed earlier and offers a high degree of liquidity and many financial products (liquidity and completeness being related). This can be especially true for Canadian firms involved in risky projects. With a high risk profile, a firm may encounter difficulty when dealing with the Canadian financial system, since Canadian investors seem rather reluctant (or not well informed) to fund some type of high-risk projects. Canadian markets being less liquid, and in the quasi-absence of a meaningful low rating bond market in Canada, these firms are sometimes left with no choice but to rely on the less risk averse, more developed, U.S. bond market.

Ultimately, Canadian companies considering bonds or stocks as their source of external financing have the possibility of issuing them either in Canadian or U.S. markets. When choosing where to issue, companies consider several aspects. Among these factors are the level of risk firms present to the market, the cost involved, and the size of the investment that they require. The combination of these three aspects determines whether they go south or rely on Canadian markets.¹⁸ The first hurdle companies face is the level of risk of the liability they plan

18 There are numerous aspects that can be invoked as well, such as basic quality signaling whereby a firm listed in the U.S. attracts more attention.

to issue. If it is too high, they are limited to the U.S. market since the Canadian high-yield market does not yet have the liquidity to make it attractive to investors. Second, if the level of risk is appropriate for the Canadian market, then the size and the cost of the investment are the determinants. The larger the size, the more attractive the U.S. market. Lastly, regarding Canada, the increasing use of derivatives during the last decade has lowered the cost and made the Canadian market more accessible as well.

With the financial innovations factor, it can be added that the availability of derivatives, such as currency swaps, permits Canadian companies to issue in U.S. dollars, while hedging against currency fluctuations and still having access to the corresponding value in Canadian dollars.¹⁹ Thus, as the use of derivatives became more popular in the early 1980s, it became possible for Canadian companies to increase their exposure in the U.S. financial markets, accessing a larger pool of funds while mitigating their currency risks. Moreover, risky Canadian companies also relied on the U.S. NASDAQ market since no equivalent market existed in Canada until recently. That might help explain the downward slope of the *In Canada* stocks series of Figure 6 for the last decade.

5. Conclusion

I find some evidence that regulation that accompanies market pressures influences the financial structure trend. Regulatory aspects help explain the relative decrease of indirect financing since 1980. This decrease coincides with an increase in the credit equivalent I built for the banks' non-interest-income component. The adjusted-total-asset-level of banks grew quickly after the 1987 and 1992 regulatory amendments.

However, the change in the Canadian financial system brings its challenges to regulators and to the authorities developing the legislation. One of them is obviously the need to take account of regulation more globally, that is, considering the impact of foreign regulations and their associated series of financial products.

Furthermore, if we were to confirm that medium Canadian firms relied more on foreign markets for their issuances of high-yield bonds, because of tax, cost, or regulation concerns, and that small and some risky firms were somewhat credit constrained (no easy access to high-yield bond markets or Canadian stock

19 See Appendix B for a definition of swaps and currency swaps.

market), it might also be appropriate to revise regulations regarding risky investment like high-yield bonds, angel investment, and venture capital to enhance their performance. For example, for angel investment, there are some (fiscal) regulation differences with the United States. Finally, half of the time, the high-yield bond issuers are firms involved in risky businesses. In a sense, it appears that foreign investors are willing to bear the risk to finance risky Canadian firms.

The financial system is not only influenced by regulation. As I have suggested in several ways, the system is also heavily influenced by market and international macroeconomic conditions. Investigating how the Canadian financial structure evolves throughout a financial cycle might prove useful to give a better assessment of the stance of the financial system.

However, a research question deserves priority. In the first place, is the current financial trend beneficial to the Canadian banks, or would they be better served by limiting their OBS activities? Investigating this case might help shed some light on the mergers debate. This is left for future work.

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Appendix A: Data Sources and Equations

All the data discussed are provided by the Bank of Canada Banking and Financial Statistics.

The data refer to non-financial businesses (corporations) only. Each component or category under review is carefully determined by adding and/or subtracting all relevant parts. For example, in the case of sources of external funds for non-financial businesses (Figure 1), the *Loans* category is constructed by adding total short-term business credit minus total commercial paper issued by non-financial corporations plus other business credit and subtracting securitization, bonds, debentures, equity, and warrants. If necessary, the component *Other* is also constructed by subtracting all parts under review from the observed aggregate of all components (total), in order to ensure that all components add up to 100 per cent. The data is normally reported over the span of 37 or 33 years, beginning in 1965 or 1969 and ending in first quarter of 2002. The only two exceptions are the figures of securitization and non interest income, where the data is not available before 1990 and 1983, respectively.

When used, the shares in percentage terms of each presented parts are determined by using the following equation:

$$(\text{Component Under Review} / \text{Total of All Components}) * 100$$

It should also be noticed that some of the series do not go all the way back to 1969. Those series are therefore backcasted as described in subsections below.

Figure 1: Shares of Non-Financial Business Loans Extended by Financial Institutions (In Canadian Dollars)

Chartered Banks:

B2300 + B2312 + B2313 + B2303 + B2308

- B2300 – Business loans at chartered banks
- B2312 – Chartered bank foreign currency loans to residents
- B2313 – Banker's acceptances
- B2303 – Non-residential mortgages at chartered banks back (Backcasted series)
- B2308 – Leasing receivables at chartered banks (Backcasted series)

The backcast for B2303 is based on an average growth rate of 1.66 per cent computed from the initial date of the series up to December 1979.

The backcast for B2308 is constructed by using an average growth of 2.97 per cent (the average growth rates from the initial date of the series up to December 1979).

Trust and Mortgage Loan Companies:

Short-term business credit at trust and mortgage loan companies + B2304 + B2309

- Short-term business credit – provided by the Bank of Canada for internal use only
- B2304 – Non-residential mortgages at trust and mortgage loan companies (Backcasted series)
- B2309 – Leasing receivables at trust and mortgages loans companies (Backcasted series)

The backcast for B2304 is constructed by using an average growth of 1.67 per cent by observing the average growth rates over the period January 1973 – December 1979.

The backcast for B2309 is constructed by using an average growth of 2 per cent by observing the average growth rates over the period January 1984 – December 1989.

Nondepository Credit Intermediaries:

B2333 + B2334 + B2335

- B2333 – Business loans at non-depository credit
- B2334 – Non-residential mortgages at non-depository credit intermediaries
- B2335 – Leasing receivables at non-depository credit intermediaries (Backcasted series)

The backcast for B2335 is constructed by using an average growth of 0.84 per cent by observing the average growth rates over the period February 1976 – December 1979.

Credit Unions and Caisses Populaires:

Short-term business credit at credit unions and caisses populaires + B2305

- Short-term business credit – provided by the Bank of Canada for internal use only
- B2305 – Non-residential mortgages at credit unions and caisses populaires

Life Insurance Companies:

B2306

- B2306 – Non-residential mortgages at life insurance companies

*Figure 2: Sources of External Funds for Canadian Non-Financial Businesses**Loans:*

B2317 – B2329 – B2330 + B155 – B2318 – B2319 – B2332

- B2317 – Total short-term business credit
- B2329 – Total commercial paper issued by non-financial corporations
- B2330 – Special purpose corporations – securitization (Short-term business credit)
- B155 – Other business credit
- B2318 – Bonds and debentures
- B2319 – Equity and warrants
- B2332 – Special purpose corporations – securitization (Other business credit)

Bonds:

B2318 + B2329

- B2318 – Bonds and debentures
- B2329 – Commercial paper issued by non-financial corporations

Stocks:

- B2319 – Equity and warrants

Other:

B2320 – Loans – Bonds – Stocks

- B2320 – Total business credit

*Figure 3: Direct/Indirect Lending**Direct:*

B2318 + B2319

- B2318 – Bonds and debentures
- B2319 – Equity and warrants

Indirect:

$B2317 - B2329 + B155 - B2318 - B2319 - B2330 - B2332$

- B2317 – Total short-term business credit
- B2329 – Total commercial paper issued by non-financial corporations
- B155 – Other business credit
- B2318 – Bonds and debentures
- B2319 – Equity and warrants
- B2330 – Special purpose corporations – securitization (Short-term business credit)
- B2332 – Special purpose corporations – securitization (Other business credit)

TSE 300 Composite Index

Provided by the Bank of Canada

Figure 4: Total Assets, Credit Equivalent, and Commercial Loans Extended by Financial Intermediaries as a Percentage of Nominal Gross Domestic Product

Assets:

I subtract the two financial institutions (MBNA and AMEX) in order to avoid double counting. Those two institutions are already reported in the total assets of non-depository credit intermediaries. All data about total assets are for domestic total assets, and come from Statistics Canada unless mentioned otherwise.

$(B20 - (MBNA + AMEX) + B672 + B4054 + B2150 + B4027 + B4046 + \text{Total assets of investment funds})/D14816$

- B20 – Total assets of non-depository credit intermediation
- MBNA + AMEX
- B672 – Total assets of chartered banks, worldwide (Bank of Canada data)
- B4054 – Total assets of trust and mortgage loan companies
- B2150 – Total assets of local credit unions and caisses populaires
- B4027 – Total assets of life insurers (including accident and sickness branches)
- B4046 – Total assets of segregated funds
- Total assets of investment funds – Bank of Canada data
- D14816 – Gross domestic product at market prices

Loans:

- $(B2317 - B2329 + B155 - B2318 - B2319 - B2330 - B2332)/D14816$
 – B2317 – Total short-term business credit
 – B2329 – Total commercial paper issued by non-financial corporations
 – B155 – Other business credit
 – B2318 – Bonds and debentures
 – B2319 – Equity and warrants
 – B2330 – Special purpose corporations – securitization (Short-term business credit)
 – B2332 – Special purpose corporations – securitization (Other business credit)
 – D14816 – Gross domestic product at market prices

Credit Equivalent:

- Non-interest income / (Total interest income including dividends – Total interest expense – Charge for Impairment)
 – Non-interest income – From Consolidated Statement of Income provided by the Bank of Canada
 – Total interest income including dividends – From Consolidated Statement of Income provided by the Bank of Canada
 – Total interest expense – From Consolidated Statement of Income provided by the Bank of Canada
 – Charge for Impairment – From Consolidated Statement of Income provided by the Bank of Canada

Figure 5: Non- and Net- Interest Income

The series listed below are from Consolidated Statement of Income provided by the Bank of Canada.

Non Interest Income:

Provided by the Bank of Canada

Net Interest Income:

Provided by the Bank of Canada

Figure 6: Short-term and Other Business Credit Securitization

B2330 + B2332

- B2330 – Special purpose corporations – securitization (Short-term business credit)
- B2332 – Special purpose corporations – securitization (Other business credit)

Figure 7: Gross New Issues of Bonds and Stocks by Non-Financial Businesses

The series listed below are from the Bank of Canada, unpublished.

In Canada:

- Non-financial corporate preferred shares issued in Canada
- Non-financial corporate common shares and warrants issued in Canada
- Non-financial corporate bonds issued in Canada

In U.S.:

- Non-financial corporate preferred shares issued in U.S.
- Non-financial corporate common shares and warrants issued in U.S.
- Non-financial corporate bonds issued in U.S.

Elsewhere:

- Non-financial corporate preferred shares issued elsewhere
- Non-financial corporate common shares and warrants issued elsewhere
- Non-financial corporate bonds issued elsewhere

Figure 8: Gross New Issues of Stocks by Non-Financial Businesses.

The series listed below are from the Bank of Canada, unpublished.

In Canada:

- Non-financial corporate preferred shares issued in Canada
- Non-financial corporate common shares and warrants issued in Canada

In U.S.:

- Non-financial corporate preferred shares issued in U.S.
- Non-financial corporate common shares and warrants issued in U.S.

Elsewhere:

- Non-financial corporate preferred shares issued elsewhere
- Non-financial corporate common shares and warrants issued elsewhere

Figure 9: Gross New Issues of Bonds by Non-Financial Businesses.

The series listed below are from the Bank of Canada, unpublished.

In Canada:

- Non-financial corporate bonds issued in Canada

In U.S.:

- Non-financial corporate bonds issued in U.S.

Elsewhere:

- Non-financial corporate bonds issued elsewhere

*Figure 10: Total Loans at Chartered Banks:
Canadian Dollars vs Foreign Currency*

The series listed in the first two categories below are from Consolidated Monthly Balance Sheet provided by the Bank of Canada.

Chartered Banks' Loans in Canadian Dollars:

(Total leasing receivables from non-mortgage loans – Foreign currency leasing receivables from non-mortgage loans) + (Total non-mortgage loans to individuals and others for business purpose – Foreign currency non-mortgage loans to individuals and others for business purpose) + (Total reversed repurchased agreements from non-mortgage loans – Foreign currency reversed repurchased agreements from non-mortgage loans) + (Total non-residential mortgages – Foreign currency non-residential mortgages)

Chartered Banks' Loans in Foreign Currency:

Foreign currency leasing receivables from non-mortgage loans + Foreign currency non-mortgage loans to individuals and others for business purpose + Foreign currency reversed repurchased agreements from non-mortgage loans + Foreign currency non-residential mortgages

Total Foreign Currency Loans to Canadian Residents:

- B498 – Total foreign currency loans to Canadian residents

*Figure 11: Total Liabilities at Chartered Banks:
Canadian Dollars/Foreign Currency*

$(B650 - B692 - B693 - B694 - B696) / B675$

- B650 – Total Chartered Banks Liabilities
- B692 – Common capital stock of shareholders' equity
- B693 – Preferred capital stock of shareholders' equity
- B694 – Contributed surplus of shareholders' equity
- B696 – Retained earnings of shareholders' equity
- B675 – Total foreign currency liabilities

Appendix B: Definitions*Swap:*

Contractual agreement in which two counterparts agree to exchange streams of payments over time.

(Source: Klein and Lederman. 1994. "The Handbook of Derivatives and Synthetics", Probus Publishing Company.)

Currency Swap:

The counter parties exchange specific amounts of two different currencies at the outset and repay over time according to a predetermined rule that reflects both interest payments and amortization of principal.

(Source: Klein and Lederman. 1994. "The Handbook of Derivatives and Synthetics", Probus Publishing Company.)

Non-interest income:

Non interest income covers all sources of revenue other than interest charges. Examples include revenue from brokerage and other securities services, credit services, net investment securities gains and losses, trading income, deposit and payment service charges, mutual fund management, card services, foreign exchange non-trading, insurance, securitization revenues, trans-sectoral income other than interest and earnings or loss from the sale of assets.

(Source: Statistics Canada. 2001. "Reporting Guide – Chartered Banks, Trust Companies, Caisses Populaires and Credit Unions", Statistics Canada.)

Loan loss provisions:

A loan loss provision is essentially the recognition by a financial institution that it is unlikely to receive all the money owed to it by a specific customer or customers. In Canada, The Office of the Superintendent of Financial Institutions (OSFI) monitors institutions to ensure they maintain sufficient provisions to recognize likely losses. (Source: OSFI, 2002. "What it Means to be Regulated", The Office of the Superintendent of Financial Institutions. Available at: <http://www.osfi-bsif.gc.ca/eng/how/what/index.asp>)

SUMMARY

This paper documents some stylized facts about the Canadian financial structure. I explore these empirical facts in the context of the Canadian financial legislation. I find that, over the 1990s, Canadian businesses became more heavily dependent on financial markets as their primary source of external funding. Data display a trend towards a more "market-oriented" financial system. The analysis suggests that this new trend started after the 1980 banking legislation amendments. The trend was considerably accentuated after the 1992 amendments. I construct a new series for the off-balance-sheet activities of Canadian banks that converts the non-interest income of banks into a credit equivalent. Combined with other evidence, this credit equivalent series suggests a healthy growth trend in banking activity. Financial institutions are broadening their business lines and participating more actively in the arrangement of market financing. Regarding direct finance, the data indicate that Canadian firms issue a substantial share of their bonds in the U.S. bond market. They also issue an increasing share of their stocks in the U.S. stock market. I conjecture that there is some form of incompleteness in the Canadian markets. A noticeable fraction of Canadian issuances in the U.S. involves riskier firms for which U.S. markets seem more mature.

ZUSAMMENFASSUNG

Dieser Artikel untersucht die Entwicklung der kanadischen Finanzstruktur. Es wird gezeigt, dass sich kanadische Unternehmen seit Beginn der 90-er Jahre vermehrt extern über Finanzmärkte finanzieren und weniger über Darlehen von Finanzintermediären. Auch die Finanzinstitutionen selbst wurden mehr marktorientiert und engagierten sich zusehends neben traditionellen Bankgeschäften im Vermitteln von Finanzmarkttransaktionen. Wie diese Trends von Änderungen

in der kanadischen Gesetzgebung im Finanzmarktbereich mitbedingt wurden, wird ebenfalls untersucht.

RÉSUMÉ

Ce papier documente certains faits stylisés concernant la structure financière canadienne. J'explore ces faits empiriques dans le contexte de la législation canadienne. Je trouve qu'au cours des années 90, les entreprises canadiennes sont devenues plus dépendantes des marchés financiers comme source principale de fonds externes. Les données montrent une tendance vers un système financier de marché. L'analyse suggère que cette nouvelle tendance s'est amorcée après les amendements législatifs de 1980. La tendance s'est considérablement accentuée après les amendements de 1992. Je construis une nouvelle série pour les activités hors bilan qui convertit les revenus non liés aux intérêts en actifs équivalents. Associée à d'autres évidences, cette série suggère une saine tendance à la croissance des activités bancaires. Les institutions financières élargissent leurs entreprises et participent plus activement dans l'arrangement de financements via les marchés. En ce qui concerne la finance directe, les données indiquent que les entreprises canadiennes émettent une portion substantielle de leurs obligations sur les marchés des Etats-Unis. Je conjecture qu'il y a une sorte d'incomplétude des marchés canadiens. Une fraction notable des émissions canadiennes aux Etats-Unis concernent les entreprises plus risquées, pour lesquelles les marchés américains semblent de plus grande maturité.