Canada's Capital Markets: How Do They Measure Up?

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As Canada's central bank, we take a keen interest in promoting a safe, sound, and efficient financial system. Today, I'd like to discuss a key component of Canada's financial system, our capital markets, and how these measure up in a global context.

The Bank of Canada has been following and, in some instances, helping to develop financial markets for over fifty years. During that time, capital markets have evolved and grown considerably. In this talk, I'd like to focus on how Canada's capital markets compare in terms of some of the factors that contribute to market efficiency and, where possible, compare Canadian capital markets with those in other countries.[1]

Efficient Markets and the Allocation of Capital and Risks

Markets play a key role in allocating capital and distributing risk: to do so effectively, they must be based on a safe and sound legal framework and financial infrastructure. The importance of integrity in the marketplace cannot be overstated, since, for markets to work efficiently, participants must be able to place their trust and confidence in them.

Efficiency actually consists of three different, yet interrelated, aspects: efficiency in allocating capital and risks, efficiency in market operations, and efficiency in transmitting information. In economic terms, overall allocational efficiency means that funds are channeled to the most profitable projects and that risks are borne by those who can best afford to bear them. Operational efficiency means that market participants are able to conduct transactions at competitive cost, and informational efficiency means that all available information is incorporated into prices. The amount of informational and operational efficiency determines the degree to which markets are allocationally efficient. So, misleading information or transactions costs that are too high can be an impediment to allocational efficiency and economic growth.

Participants must be able to place their trust and confidence in capital markets for these markets to work efficiently.

As noted above, the first of the three aspects, allocational efficiency, means that investors provide funds to the projects that are most likely to be profitable—i.e., that firms are able to finance investment projects which have a positive net present value. In practical terms, this means capital markets must have the capacity to finance projects that cover the whole

* For more details on this program, visit their Web site at http://www.wcm.ca.

1. For a survey of recent research in this area, see "The Efficiency of Canadian Capital Markets: Some Bank of Canada Research" by Scott Hendry and Michael King (this *Review*).

spectrum of economic activity, over both short and long time frames, and involving different levels of risk. Considered in these terms, do Canadian firms have access to complete and vibrant markets? And are these markets able to handle the full range of risk?

Market completeness and access

A complete market[2] can be thought of as one that has a full array of financing options at its disposal to allow participants to cover all possible contingencies. In a small, open economy such as ours, completeness is a global notion, and discussion revolves around the capacity not only of domestic, but also of international, markets to fulfill these roles. In either case, the key question is whether firms have access to the capital they need, in markets where a full range of instruments is available to hedge, or distribute, risk.

The size of a market is important because large-market countries like the United States are better able to take advantage of economies of scope and scale. Although size in itself does not make a market more efficient, it can contribute to efficiency by increasing the potential for liquidity of a market and the diversity of its products. Clearly, Canadian markets are much smaller than those in the United States, Europe, and Japan, but they compare well with those of other countries with similarly sized economies.

Take the fixed-income market as an example. The U.S. fixed-income market is extremely well developed and much larger than all other fixed-income markets. In fact, the U.S. market is 32 times the size of Canada's market, 15 times the size of the U.K. fixed-income market, and 3 times that of Japan (Table 1).

Fixed-income markets include both public sector and corporate debt. In terms of corporate bonds, the U.S. market is, again, by far the largest, with about half of the world market. The euro zone has about 30 per cent of the world market, and Japan has about 6 per cent. Canada and the United Kingdom each represent approximately 1 per cent of the world corporate bond market (Chart 1).

Of particular note, however, is that Canada's corporate bond market has expanded considerably over the past decade and now stands at about 23 per cent of the Canadian-dollar fixed-income market, up from 11 per cent in 1994. This reflects not only the progress made in reducing public sector debt over this period, but also increased use of Canadian fixed-income markets by corporate issuers and investors.

Turning to equity markets, when taking the Toronto Stock Exchange (TSX) and the TSX Venture Exchange together, Canada ranks seventh in market capitalization, just behind the major European players (Table 2). But in terms of the number of listed public companies, Canada ranks second in the world after the United States (Table 3). This divergence in rankings according

Table 1

Total Bonds Outstanding (2003)

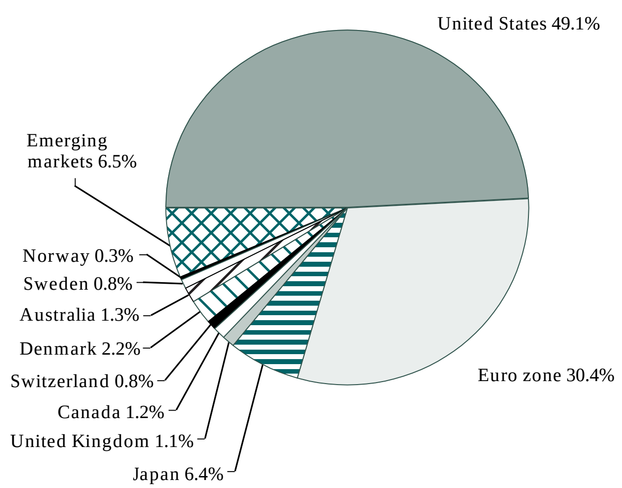
Country	US$ (billions)*	Per cent of market
United States	$21,351.4	47.6
Euro zone	10,306.2	23.0
Japan	7,164.2	16.0
United Kingdom	1,462.0	3.3
Canada	676.8	1.5
Denmark	390.1	0.9
Switzerland	388.7	0.9
Australia	342.3	0.8
Sweden	218.3	0.5
Norway	88.9	0.2
New Zealand	30.5	0.1
Emerging markets	2,425.2	5.4
TOTAL	$44,844.6	100.0

* Values for total bonds outstanding represent the sum of government, corporate, eurobond, and foreign bonds outstanding for each country.

Source: Merrill Lynch (2004)

Chart 1

Total Corporate Bonds Outstanding as a Percentage of the World Corporate Bond Market (2003)



Source: Merrill Lynch (2004)

2. In economic terms, a complete market is one in which the full range of possible gambles on future states of the world can be constructed with existing assets.

to market capitalization and the number of listed companies reflects the fact that relatively more small firms are accessing public equity markets here in Canada than in other countries. Nor is financing limited to traditional instruments. Income trusts are another source of market financing that has developed in Canada for firms with a ready cash flow.

Canadian investors and firms also have access to derivative products to manage risks. A wide array of derivative instruments is available over-the-counter (OTC), including options, interest rate swaps, forwards, and foreign exchange derivatives. Credit-risk transfer products, however, are less developed. The liquidity and breadth of standardized derivative products available through Canadian exchanges has improved, but is still limited. Beside the short-term bankers' acceptance futures contract, only one liquid government bond futures contract is currently trading on the Montréal Exchange, although a second was recently introduced, the two-year Government of Canada bond futures (CGZ). In comparison, there are active futures contracts for the four main terms of U.S. Treasury notes, three bond futures in the euro zone, and one in the United Kingdom (Bloomberg 2004). So risk transfer in Canada relies more heavily on over-the-counter products (Table 4).

Table 2

Top 10 Stock Exchanges, by Market Capitalization

Exchange	Market capitalization (US$ millions)
NYSE	11,328,953
Tokyo	2,953,098
NASDAQ	2,844,193
London	2,460,064
Euronext	2,076,410
Deutsche Börse	1,079,026
TSX Group	888,678*
Swiss Exchange	727,103
Hong Kong	714,597
Borsa Italiana	614,842

* Equivalent to Can$1,215 billion
Source: World Federation of Exchanges (2003)

Table 3

Number of Listed Companies, by Region

	Total	Domestic	Foreign
United States	6,159	5,295	864
Canada	3,616	3,578	38
Japan	3,346	3,314	32
United Kingdom	2,692	2,311	381
Australia	1,471	1,405	66
Euro zone	6,428	5,825	603

Source: World Federation of Exchanges (2003)

Table 4

The Global Market for OTC Interest Rate Derivatives

Gross market values

Amounts outstanding at year-end 2003 (US$ billions)	
	141,991
With reporting dealers	63,579
With other financial institutions	57,564
With non-financial customers	20,847
Euro	55,793
U.S. dollar	46,178
Japanese yen	19,526
Pound sterling	9,884
Swiss franc	2,444
Swedish krona	1,520
Canadian dollar	1,302
Other	5,344
Exchange-traded contracts	33,917

Source: BIS (2004)

Access to Global Markets

From the perspective of Canadian firms, financing options are not limited to what is offered in Canada alone. Data show that larger Canadian firms have developed the size and reputation to access global markets on a cost-effective basis. In terms of dollar value, Canadian corporations raise about half of their bond issues offshore, most recently mainly in the United States. These U.S. offerings are twice the size of Canadian offerings, on average. Large investment-grade Canadian firms have a range of low-cost financing options in Canada but, when raising large amounts of capital, they often decide to look abroad as well. And, because the United States has the world's largest high-yield market, Canadian firms with large high-yield financing needs tend to go there (Anderson, Parker, and Spence 2003).

But challenges remain for smaller, non-investment-grade Canadian companies. Canadian markets for these issues are limited, and firms need to have relatively large deals to tap into the U.S. market. So how do these firms get financing? Largely, it would appear, through bank loans or private equity (Table 5).

Canadian firms have long taken advantage of opportunities in international equity markets. In 2003, over 180 Canadian firms were listed on a U.S., as well as a Canadian, exchange—the largest number of listings of any foreign country on a U.S. exchange (TSX 2003). In recent years, Canadian interlisted stocks have represented roughly 15 per cent of listings, up from 10 per cent in the 1980s (Chouinard and D'Souza 2003-2004) (Chart 2).

Table 5

Top 10 Countries Based on Private Equity Investment, 2002

Country ranking	Investment value (US$ billions)	Funds raised (US$ billions)
United States	62.68	54.89
United Kingdom	9.58	13.42
France	5.53	4.54
Italy	2.48	1.89
Japan	2.38	0.72
Germany	2.37	1.55
South Korea	1.95	0.36
Netherlands	1.63	1.13
Canada	1.57	2.07
Sweden	1.39	0.61

Note: Figures shown above are annual rather than cumulative values for 2002. The amount invested may be lower than the amount raised, as there may not be enough attractive investments in a given year to warrant using the funds raised. On the other hand, some firms may find an abundance of attractive investments in a given year and may invest more funds than have been raised. This is often possible because funds raised in previous years have yet to be invested.
Source: PricewaterhouseCoopers and 3i (2003)

Liquidity and Transactions Costs

What about the efficiency of market operations themselves? Are participants able to conduct transactions at a competitive cost? Key characteristics for consideration here include liquidity and transactions costs.

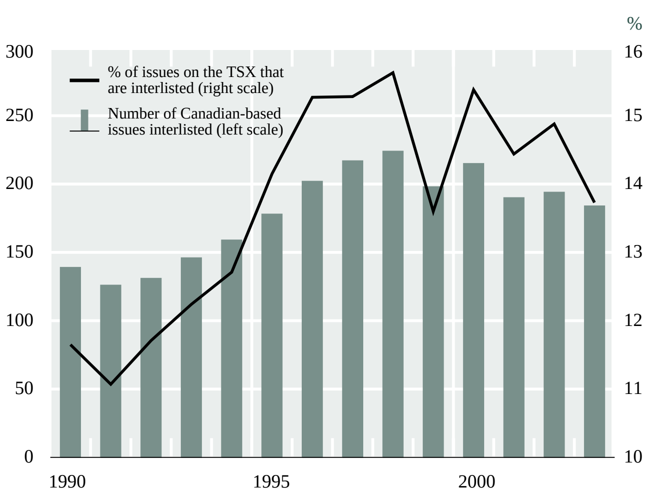
Liquidity

A liquid market is one in which large amounts of securities can be traded in a minimum number of transactions and with little impact on prices. As a market becomes more liquid, it encourages more trading, which, in turn, attracts more market participants, resulting in a virtuous circle where markets become more liquid and more efficient over time.

There are several measures of liquidity. Analysis at the Bank of Canada (Anderson and Lavoie 2004) of one proximate measure—turnover ratios in the sovereign bond market—shows that Canadian government bond markets are doing quite well in terms of liquidity, evolving in line with those of other countries (Chart 3). Corporate fixed-income markets are less liquid in Canada, although secondary trading has

Chart 2

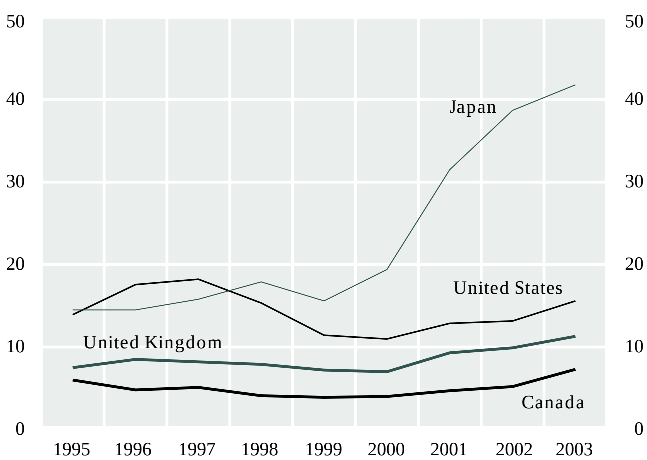
Canadian-Based Issues Interlisted on at Least One U.S. Exchange



Source: *Toronto Stock Exchange Review* (2003)

Chart 3

Turnover Ratios in the Sovereign Bond Market



Sources: Bank of Canada, Federal Reserve, Japan Ministry of Finance, Bond Market Association, LSE, UK Debt Management Office increased since the latter half of the 1990s (Bank of Canada, various years).

The liquidity of Canadian equity markets tends to be lower than that of the major global exchanges. However, liquidity on the TSX has been on an upward trend for some time, with the volume of shares traded increasing by about 3.5 times since the mid-1990s and the value of shares traded having tripled over the same period.[3]

Transactions costs

Transactions costs provide another indication of liquidity. It is generally agreed that high liquidity usually means lower transactions costs. According to one study, bid-ask spreads in Canadian fixed-income markets are among the narrowest in the world, after the United States and the United Kingdom (Table 6).

As for equities, research suggests that the costs of an Initial Public Offering (IPO) on the TSX are competitive or better than in the United States (Hail and Leuz 2003). Competition with foreign stock exchanges, as well as cross-listing, has probably contributed to the narrowing of bid-ask spreads and other trading costs.

New technology can play an important role when it comes to lowering transactions costs further. Electronic trading systems can support more efficient operations and information sharing, leading to faster trading, increased competition, and, as a result, lower transactions costs. Technological innovation can also enable enhanced transparency, further improving operational efficiency. Alternative trading systems have been slower to evolve in Canada than in the United States and Europe, so this is an area where there is room for Canadian capital markets to develop further.

Straight-through processing (STP)[4] can provide further efficiency gains. If done properly, STP may also help reduce risks inherent in the clearing and settlement of financial market transactions. In this regard, I find it encouraging that the Canadian Capital Markets Association (CCMA) is taking the lead in promoting STP in Canadian financial markets. It is crucial that Canadian market practices keep pace here to increase operational efficiency and remain competitive with other markets, such as those in the United States, which are also moving in this direction.[5]

Table 6

Bid-Ask Spread for On-the-Run Issues

	Canada	Italy	Japan	United Kingdom	United States
Fixed coupon					
2 years	2	3	5	3	1.6
5 years	5	5	9[2]	4	1.6
10 years	5	6	7	4	3.1
30 years	10	4	16[3]	8	3.1
Index-linked					
10 years	25	n/e[1]	n/e[1]	15	6.3

	Belgium	France	Germany	Sweden	Switzerland
Fixed coupon					
2 years	n/a	4	4	4	n/e[1]
5 years	n/a	5	4	9	n/e[1]
10 years	5	10	4	15	10
30 years	n/a	24	10	27[4]	25
Index-linked					
10 years	n/e[1]	n/e[1]	n/e[1]	39	n/e[1]

Note: The spreads, given in one-hundredths of a currency unit for the face amount of 100 currency units, apply to interdealer transactions.
1. Does not exist
2. For 6-year bonds
3. For 20-year bonds
4. For 22-year bonds
Source: BIS (1999)

Transparency and Market Integrity

Having a broad range of markets that can be accessed at low cost is one thing, but a third aspect of efficiency, informational efficiency, must also be considered. Informational efficiency refers to the extent to which all participants have timely and equitable access to relevant information and the extent to which this information is fully reflected in market prices. Transparency and market integrity are key attributes supporting informational efficiency.

Transparency

Market transparency refers to the amount of quote, price, and volume information available to markets and the general public. The optimal level of transparency will vary, depending on the structure of the market; however, in general, enhanced transparency can be of

3. One measure of liquidity in equity markets is turnover velocity (ratio of the value of shares traded to market capitalization), which is measured at 66 per cent for the TSX; 281 per cent for the NASDAQ; 148 per cent for Deutsche Börse Group; approximately 100 per cent for New York, London, and Euronext; and 80 per cent for Australia. Turnover velocity on the TSX was 44 per cent a decade ago (World Federation of Exchanges 2003).

4. The Canadian Capital Markets Association defines industry-wide STP as “seamlessly passing information electronically on a timely, accurate, system-to-system basis to all parties in the end-to-end securities transaction chain without manual handling or redundant processing” (CCMA 2004).

5. Refer to the CCMA Web site for details: www.ccma-acmc.ca.

benefit in helping a market to work more efficiently. This is particularly important for retail investors, who typically do not have the same quality and variety of resources to acquire information as large institutional investors (Zorn 2004).

Transparency and market integrity are key attributes supporting informational efficiency.

In Canada, equity markets are generally fairly transparent, while fixed-income markets are less so. This reflects the fact that equities are traded mainly on centralized exchanges, where the terms of trade are widely available, whereas fixed-income markets have generally been structured as decentralized dealer markets. In fixed-income markets, dealers provide a quote to each potential counterparty. They also act as market-makers, taking on inventory risk. Complete transparency in these circumstances may reduce their ability to manage this risk, which could have the perverse effect of reducing liquidity and increasing transactions costs. On the other hand, measured steps to increase transparency in fixed-income markets, in line with developments globally, are an important element in improving market efficiency.

Note, too, that, if we want to encourage an active secondary market for loans here in Canada, we also need to enhance transparency with regard to lending activity. Standardizing loan documentation and making terms and pricing information more accessible to borrowers and investors would help in this regard. Such transparency could help to expand these markets, thus improving liquidity, efficiency, and risk management.

Market integrity

Integrity is the cornerstone of market efficiency. Markets tarnished by fraud, insider trading, and manipulation cannot attract a large investor base. Without broad participation, liquidity decreases, there is even less incentive to participate, and a vicious circle develops where markets become less liquid, and as a consequence, less efficient, over time.

There are many ways to foster market integrity. Three that are particularly relevant to this discussion are disclosure, to enable equal and timely access to all relevant information; efficient regulation and codes of conduct, to establish the rules of the game in a cost-effective manner; and vigorous enforcement, to punish wrongdoers and to encourage all parties to comply with the rules.

i) Disclosure

As a result of corporate accounting and governance scandals, much is being done to improve the disclosure of timely and accurate financial information. This should also involve making corporate reporting more understandable to everyone and more forthcoming about the assumptions and risks underlying projections of future outcomes (Kennedy 2003). Many players are actively involved in improving disclosure. The Canadian Securities Administrators have developed rules about continuous disclosure by publicly traded companies, and now require company CEOs and CFOs to certify financial statements[6] to help prevent the circulation of misleading information to investors (CSA 2004).

The Canadian Institute of Chartered Accountants (CICA) is addressing issues raised by accounting scandals, and the Canadian Public Accountability Board has been jointly established by the CICA, the CSA, and the Office of the Superintendent of Financial Institutions (OSFI) to oversee the activities of auditors of public companies. In addition, Industry Canada has just released a discussion paper that outlines proposals to amend the Canada Business Corporations Act (CBCA) to enhance the transparency and accountability of corporations (Canada 2004). Credit-rating agencies are also taking a closer look at corporate governance issues and the quality of financial statements when issuing ratings.

ii) Regulation and codes of conduct

A second key factor to support market integrity is the quality of regulations and the implementation of professional codes of conduct. Supporting regulations and codes of conduct is not the same thing as advocating the writing of endless rules. There is a trade-off between regulation and market efficiency, as too many rules will eventually hamper the efficient functioning of markets and can stifle innovation. Merely establishing rules each time there is a problem won't necessarily solve the problem. In fact, it may create new ones. That is why market participants also have to

6. The certification of disclosure rule has not been adopted by the British Columbia Securities Commission.

take the initiative to develop codes of conduct and abide by agreed-upon standards of market practice. The incentive to do so is there because good practices make for good business. Integrity has a market value for financial intermediaries.

Setting out guidelines for professional behaviour, codes of conduct, and agreed-upon market best practices allows everyone to know and play by the same rules. The idea is to reduce conflicts, align incentives, and clearly define appropriate practices in order to minimize the costs that arise both from excessive regulation and from corporate misconduct.

On balance, financial market regulation needs to be designed so as to enhance the efficiency and competitiveness of our markets.

Canada's regulatory regime and codes of conduct must tackle head-on the risks of conflicts, market manipulation, insider trading, and fraud. But, at the same time, policy-makers have to be sensitive when drawing up rules in order not to impose unnecessary costs. On balance, financial market regulation needs to be designed so as to enhance the efficiency and competitiveness of our markets.

iii) Compliance and enforcement

Of course, as good as regulation and codes of conduct may be, they will not promote market efficiency without strong compliance procedures and effective enforcement. As we all know, markets that are seen to be fair work better and attract more participation and more liquidity.

Over the past year, governments, law-enforcement agencies, and securities commissions have all taken action to beef up our enforcement capabilities here in Canada. Because, frankly, this is one area where there is concern about our track record. But results will have to be demonstrated, so it will take time—it is to be hoped, not too much time—to turn around our track record in this regard.

And let's not forget that integrity starts with the individual. It is essential that market participants be vigilant in ensuring that everyone is following the spirit, as well as the letter, of the rules and codes of conduct that have been put in place.

Conclusion

Overall, Canadian capital markets are efficient in many respects and measure up well when compared with those of other countries of comparable size. However, there are areas requiring improvement, and the competition never rests. To hold our own against the very deep, very liquid U.S. capital markets, we have to continue to try harder. This means working to develop and enhance access to new markets, instruments, and pools of capital. And more work will be needed to reduce transactions costs, become more transparent, and strive for cost-effective regulation and world-class codes of conduct. What is particularly important in the current environment is to strengthen our compliance and enforcement efforts in order to bolster trust and confidence in the integrity of our markets. In this way, the Canadian capital markets that have worked so well to date will continue to grow and evolve to best serve the interests of borrowers and investors in the twenty-first century.

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