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# RESEARCH REPORT

HOUSE PRICES, BORROWING  
AGAINST HOME EQUITY, AND  
CONSUMER EXPENDITURES



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# **House Prices, Borrowing against Home Equity, and Consumer Expenditures**

**A paper prepared for  
Canada Mortgage and Housing Corporation  
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## Executive Summary

This paper examines the link between house prices, borrowing against home equity, and consumer spending in Canada in recent years. Borrowing against home equity, or home equity withdrawal, means turning home equity into financial capital through borrowing, without selling the home.

The paper is motivated by the idea that strength in house prices during the recent economic downturn has helped sustain consumer spending through home equity withdrawals. Thus, a strong housing market may have contributed to recent economic performance.

The paper gives a brief account of prices and volumes in the housing resale market and of borrowing by households in recent years. In the past four years ending in the first quarter of 2003, house prices increased by 28 per cent, 14 per cent more than the consumer price index, to return to the relative level that existed in the late 1980s. Mortgage and consumer credit have shown strong growth in recent years, particularly personal lines of credit. Mortgage debt increased relative to the value of owner-occupied homes between 1984 and 1999, but has not kept pace with the increase in house values since then. Neither has total household debt.

Borrowing against home equity is measured by three components: the increase in the principal of mortgages when mortgages are refinanced or renewed; new home equity loans; and new home equity lines of credit. The Bank of Canada nor Statistics Canada publish data about any of the three components. The paper presents two estimates: \$33 billion for the year 2002, based on a proprietary survey of borrowers, and \$22 billion for 2001, 2002 and the first quarter of 2003, a period of more than two years, based on data internal to two banks and a credit bureau. The large difference between these estimates demonstrates that there is a data problem, and the higher estimate in particular is not suitable as a starting point for estimating impact on the economy.

The scale of borrowing against home equity appears to be larger in the U.S., where it was \$226 billion in 2002. Low interest rates and lower transaction costs have contributed to the increasing use of credit backed by house values in both countries. In the U.S., house prices increased by 50 per cent since 1995 - 30 per cent in real terms - compared to 30 per cent in Canada - 10 per cent in real terms. Current house prices south of the border have been shown to be unsustainable, and there is mounting concern about the possibility of a bursting of the house price bubble.

According to survey data in both countries, about one half of new home equity debt (the three components) is used to repay other loans or make financial investments, and less than one quarter is allocated to consumer expenditures. This contribution to consumer spending and GDP, however, is offset by repayments and debt service cost. To measure the impact on the economy, a net measure of borrowing should be used, but it is not available at present.

However it is defined and measured, home equity withdrawal only captures part of the influence of house prices on consumption. There are many channels through which changes in house prices may affect consumption decisions, making for an overall wealth effect. The paper compares estimates of the size of wealth effects from recent studies. The range of estimates is too wide to allow application to recent developments in Canada. Thus, the paper presents no

## House Prices and Consumer Expenditures

estimate of the extent to which house prices have sustained consumption in the past several years.

Finally, the paper considers how home equity withdrawal can be monitored and analysed. It argues that further analysis of the link between house prices and consumer expenditures through borrowing against home equity is not possible without more information through surveys and enhanced reporting by financial institutions. It considers the state of knowledge about wealth effects on consumption unsatisfactory and suggests a concerted research effort.

## Résumé

L'étude examine la corrélation qui existe entre le prix des habitations, les emprunts garantis par l'avoir propre foncier et les dépenses de consommation au Canada depuis quelques années. L'emprunt garanti par l'avoir propre foncier, ou le dégagement de l'avoir propre foncier, consiste à transformer l'avoir propre foncier en capital en contractant un emprunt garanti par le logement, sans toutefois vendre ce dernier.

La réalisation de l'étude est motivée par l'hypothèse selon laquelle le prix élevé des habitations durant le dernier ralentissement économique a aidé à soutenir les dépenses de consommation grâce au dégagement de l'avoir propre foncier. Il se peut donc que la vigueur du marché de l'habitation ait contribué à la récente performance de l'économie.

L'étude décrit brièvement la façon dont ont évolué, ces dernières années, les emprunts des ménages ainsi que les prix et les volumes sur le marché des logements existants. Pendant la période de quatre ans ayant pris fin au premier trimestre de 2003, le prix des habitations a augmenté de 28 % – taux de croissance supérieur de 14 points de pourcentage à celui de l'Indice des prix à la consommation – pour retrouver les niveaux relatifs atteints vers la fin des années 1980. Les créances hypothécaires et le crédit à la consommation ont affiché une forte croissance au cours des dernières années, en particulier les marges de crédit personnelles. Entre 1984 et 1999, l'endettement hypothécaire s'est accru par rapport à la valeur des logements occupés par leurs propriétaires. Toutefois, depuis lors, ni l'endettement hypothécaire ni la dette totale des ménages n'ont progressé au même rythme que la valeur des habitations.

L'emprunt garanti par l'avoir propre foncier se mesure au moyen de trois composantes : l'augmentation du principal au moment du refinancement de l'habitation ou du renouvellement du prêt hypothécaire; les nouveaux emprunts garantis par l'avoir propre foncier; les nouvelles marges de crédit garanties par l'avoir propre foncier. Ni la Banque du Canada ni Statistique Canada ne diffusent de données à ces sujets. Deux estimations sont présentées : 33 milliards de dollars en 2002, d'après une enquête privée réalisée auprès d'emprunteurs, et 22 milliards de dollars entre le début de 2001 et la fin du premier trimestre de 2003, soit durant une période de plus de deux ans, d'après les données internes de deux banques et d'une agence d'évaluation du crédit. La grande différence entre ces estimations témoigne de lacunes sur le plan des données. L'estimation la plus élevée, en particulier, ne convient pas comme point de départ pour évaluer les incidences sur l'économie.

La masse d'emprunts garantis par l'avoir propre foncier semble plus considérable aux États-Unis, où elle s'est chiffrée à 226 milliards de dollars en 2002. Les bas taux d'intérêt et les frais d'opération réduits ont contribué à l'utilisation croissante du crédit garanti par la valeur des habitations au Canada et aux États-Unis. Depuis 1995, le prix des logements a augmenté de 50 % aux États-Unis (30 % en termes réels) et de 30 % au Canada (10 % en termes réels). Il a été démontré qu'au sud de la frontière, les prix

des habitations ne pourront se maintenir, et l'on craint de plus en plus un éventuel éclatement de la bulle spéculative.

Selon les données d'enquêtes réalisées dans les deux pays, environ la moitié des fonds empruntés (les trois composantes) sert à rembourser d'autres prêts ou à faire des placements financiers, et moins de un quart est consacré aux dépenses de consommation. Cette contribution aux dépenses de consommation et au PIB est toutefois contrebalancée par les remboursements et les frais de service des dettes. Une mesure nette serait plus pertinente pour évaluer l'incidence de l'emprunt sur l'économie, mais elle n'est pas disponible à l'heure actuelle.

Peu importe la manière de le définir ou de le mesurer, le dégagement de l'avoir propre foncier n'explique qu'en partie l'incidence du prix des habitations sur la consommation. L'évolution du prix des logements influe de bien des façons sur les décisions de consommation, et ces nombreuses façons produisent un effet de richesse global. L'étude compare quelques estimations d'effet de richesse tirées d'études récentes, et elle conclut que leur éventail est trop large pour qu'on puisse les appliquer dans le contexte du marché canadien. Par conséquent, l'étude ne présente aucune estimation de la mesure dans laquelle le prix des habitations a soutenu la consommation ces dernières années.

Enfin, l'étude examine les méthodes possibles de suivi et d'analyse du dégagement de l'avoir propre foncier. On allègue qu'il faudrait disposer de plus amples renseignements obtenus au moyen d'enquêtes ou de rapports plus approfondis d'institutions financières pour pouvoir analyser en profondeur, à partir des emprunts garantis par l'avoir propre foncier, le lien qui existe entre le prix des habitations et les dépenses de consommation. On considère que les connaissances relatives à l'incidence qu'a l'effet de richesse sur la consommation sont insuffisantes à l'heure actuelle et qu'une initiative de recherche concertée devrait être lancée.



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## 1 Introduction: House prices and consumer expenditures

This paper examines the link between house prices, borrowing against home equity, and consumer spending in Canada in recent years. Borrowing against home equity, or home equity withdrawal, means turning home equity into financial capital through borrowing without selling the home. The paper is motivated by the idea that strength in house prices during the recent economic downturn has helped sustain consumer spending through home equity withdrawals. In the U.S., where house prices have been very high recently, many home owners have refinanced their mortgages and used the occasion to borrow more. The paper examines whether something similar has happened in Canada.

Home equity is a major form of wealth for a majority of Canadian households. In 1999, equity in owner-occupied dwellings was an estimated \$700 billion, more than the annual level of spending by consumers on goods and services. Tapping home equity for funding current consumption, even if done on a small scale, can clearly have an effect on consumer expenditures.

One way to access home equity for current consumption is to take out a loan secured by the home. Mortgages on the family home are the single largest form of household debt, and for the most part they serve as a means to acquire a home for the family. But mortgages can also be used for financial investments and current consumption, and there are other loans secured by the home that are not intended to finance its purchase: home equity loans and lines of credit

In the U.S. in recent years, millions of home owners have refinanced mortgages to take advantage of lower mortgage interest rates. Quite a large share of home owners who did so used the occasion to borrow more. Because of the lower interest rate they were often able to do so without increasing their monthly payments. This “cash-out refinancing”, along with new home equity loans and lines of credit, is taken as a measure of home equity withdrawal<sup>1</sup>.

The measure is somewhat arbitrary, as we are trying to find loans with a particular purpose (loans not used to finance purchase of a home for the family) but have to classify on the basis of loan categories. Mortgages taken out by existing home owners clearly are not used for acquisition of the home – so shouldn’t these be considered home equity loans? On the other hand, should loans for financing additions to the home be regarded as home equity extraction? Presumably the addition to the home is as valuable as the amount borrowed, so that no equity is converted. In addition, loans backed by the family home may be substitutes for other types of loans. In this case only the form of the loan, and not the loan itself, is motivated by access to home equity. As there is no ideal way to classify loans, it may be best to take a broad view of the matter, i.e., take all loans that may involve extraction of home equity, and consider the uses of the funds. Substitution of loans backed by the family home for other types of loans can also be measured by considering total borrowing activity by households. As will be shown, a significant part of home equity withdrawal is used to repay other loans.

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<sup>1</sup> To be precise, only increases in excess of 5 per cent of the principal of the mortgage are included in measures of cash-out refinancing in the U.S.

Borrowing has consequences – debts that need to be repaid with interest – but these are ignored in reports of the recent upsurge in “banking on the house<sup>2</sup>”, which cover new borrowings only. Clearly, to measure the effect of borrowing on consumption, one has to look at both sides of the coin, and consider the net change in debt rather than new loans. Borrowing activity has increased in recent years, and this has had an effect on the level of consumer spending, but this effect is not as large as suggested in recent reports.

On the other hand, home equity withdrawal has effects on the economy other than through consumption. Many home owners borrow to expand or improve their residences, and this gives rise to economic activity. The impact on the economy may be greater than that of consumption per dollar spent, because there is less “leakage”.

These, in brief, are some of the issues one encounters when one tries to evaluate to what extent house prices have helped sustain consumer expenditures and economic activity in recent years. These issues are addressed in the pages that follow, with more or less success according to the information available.

Borrowing is not the only way in which changes in home equity can affect consumption. One can also sell the family home and revert to renting, or trade down, i.e. exchange the residence for a less expensive one. Either way, home equity is turned into financial capital that may be used to finance consumption, whether of durables (e.g., the purchase of a vehicle), services (a trip abroad), or daily living expenses. Estate sales of homes may give rise to consumption, if the heirs spend the proceeds instead of reinvesting the funds in real or financial instruments.

For every seller there is a buyer, and actions by buyers may offset in whole or in part any effects of selling on consumption. The purchase of a home tends to give rise to consumer expenditures for appliances, furniture etc., but if house prices increase, buyers may reduce their consumption in order to supply a large downpayment, offsetting to an extent the additional spending by the seller induced by higher prices.

It is also possible to access home equity without borrowing or selling. Most home owners have financial assets. If house prices increase, they may judge that they are holding more assets than they want, and use part of their financial assets for current consumption. In so doing they may move away from their preferred asset mix, but they may prefer this to borrowing and incurring interest charges. Home owners who spend less than their entire income on consumer goods and services may simply reduce the amount they save, without having to draw on their accumulated savings.

Thus, changes in house prices may induce consumers to change their consumption plans. The specific responses vary according to individual circumstances, but there is a common element, and that is the change in wealth brought about by house price changes. Economic theory and empirical evidence support the notion of wealth effects on consumption. Borrowing against home equity is only one of the mechanisms through which this more general effect is realised.

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<sup>2</sup> This expression was used in the title of a report by CIBC World Markets Research: “Banking on the House”, June 19, 2003. See Section 2.4 for a discussion of estimates of borrowing against home equity in Canada.

To complement our examination of borrowing against home equity and provide a more complete account of the link between house prices and consumption, we review recent estimates of wealth effects.

Throughout the paper we compare Canada and the U.S., either to highlight similarities and differences in recent developments, or to help identify data requirements in Canada. Canadian amounts are given in Canadian dollars, and U.S. amounts in U.S. dollars.

The paper is structured as follows. Section 2 explores the relationship between house prices and borrowing against home equity. It gives an estimate of the amount of home equity in Canada, and briefly describes developments in the housing market and in the market for loans to households. Two estimates of borrowing against home equity are reported and reviewed. Estimates are also provided for the United States.

Section 3 reports information from household surveys about uses of funds borrowed against equity in the house, both in Canada and the United States. It is argued that, to gauge the impact on consumer spending, a net measure of borrowing should be used.

Developments in financial markets that facilitated the recent growth in borrowing against home equity are briefly reviewed in Section 4. Concern about bursting of a house price bubble south of the border is noted.

The paper then takes a wider view of the effect of house prices on consumer expenditures and reviews recent studies of wealth effects on consumption. Section 5 leads off with a detailed listing of the ways in which changes in wealth affect spending and saving, to demonstrate the difficulty of a bottom-up approach to measurement of these effects. Next, recent studies are briefly reviewed. This review demonstrates that the top-down approach to date has not yielded precise estimates of wealth effects.

Section 6 indicates how borrowing against home equity may be monitored, and concludes that further analysis is not possible without additional information from surveys of borrowers or enhanced reporting by lenders to the financial authorities.

The complete statement of work for this study is given in the Appendix. The statement of work calls for a research proposal with respect to borrowing against home equity (“refinancing”). As it turned out, this paper is more than a research proposal: it is an initial study of the subject.

## **2 House prices and borrowing against home equity**

We now proceed to scan the record for evidence of a connection between increases in house prices and consumption through borrowing against home equity. In this section we examine the first link in this chain: borrowing against home equity in response to changes in house prices. We begin with some data on home ownership, home equity and the incidence of various types of credit, and then turn to recent developments.

## 2.1 Home ownership and debt

Home ownership increased marginally between 1984 and 1999, but the share of families with a mortgage on their principal residence increased by more (Table 1). The average real price of the owned family home increased by 14.4 per cent, but the average mortgage outstanding increased by 42.5 per cent in real terms. As a result, home equity per home owner increased by only 2.7 per cent. The share of households owning their principal residence increased by 2.6 per cent. Total household wealth in the form of equity of the owner-occupant in the principal family residence amounted to \$700 billion in 1999.

**Table 1 Home ownership and mortgage holders as a share of all families, and value of principal residences and mortgages, 1984 and 1999, (1999 constant dollars)**

	1984	1999	Change
Home owners	58.5%	60.0%	2.6%
Average value	\$130,900	\$149,700	14.4%
Mortgage holders	28.4%	33.0%	16.2%
Average mortgage	\$53,400	\$76,100	42.5%
Average home equity	\$105,000	\$107,800	2.7%

Source: “The distribution of wealth in Canada 1984”, Statistics Canada Cat. No. 13-580, 1986, Tables 1, 23 and 26, and “The Assets and Debts of Canadians. An overview of the results of the Survey of Financial Security”, Statistics Canada Cat. No. 13-595-XIE, 2001, Table 3.10a, and calculations by the author.

Behind these statistics may lie various developments. Perhaps there were relatively more families in 1999 than in 1984 that recently bought a home, financed this purchase with a mortgage, and were still in the process of paying off this debt. In other words, Table 1 may show members of the large baby boom generation at that stage in the life cycle – they were 35 to 54 years of age in 1999 - where they would have large mortgages. Perhaps more families traded up in the years before 1999, financing the purchase of a larger home with a mortgage, or had just made improvements to their homes. Perhaps, in 1999 and the years leading up to it, house prices fell and home equity was depressed; or the 1984 numbers reflect unusually high house prices. The numbers may also point to increased use of the home as security for loans to households, or extraction of home equity for consumption.

Home ownership and mortgage debt vary with age (Table 2). Home ownership reaches a peak of three-quarters of families at ages 55-64. Among seniors it falls off to two-thirds. As well, home ownership without a mortgage becomes more common with more advanced age. All this is in line with the principal role of mortgages as a way of financing the first purchase of a home for the family.

The incidence of various forms of consumer credit also declines with age, with credit card and instalment debt being the most common and having the flattest age profile. Lines of credit are roughly half as common as mortgages for all age groups. The median amounts are small, but some of the consumer debt has a skewed distribution: lines of credit have an average of \$13,500

and a median of \$5,000. The incidence of lines of credit, of which home equity lines of credit are an important component, and the amount of those loans were rather small compared to mortgages on the principal residence in the year 1999.

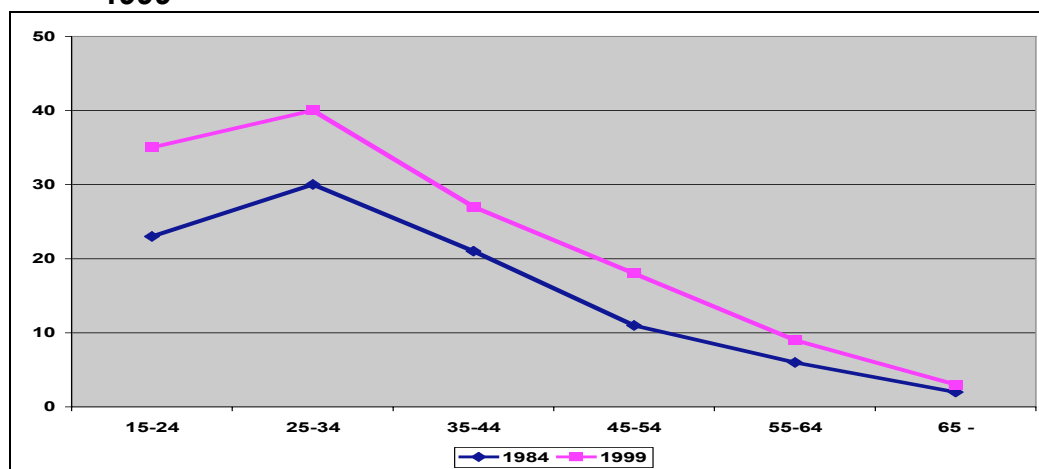
**Table 2 Incidence of home ownership and various forms of debt, by age of major income recipient in the family, 1999 (per cent of families)**

Age	15-24	25-34	35-44	45-54	55-64	65 -	Average share	Median amount ('000)	Average amount
Median value of home ('000)		120	125	138.5	130	120		125.0	149.7
Home ownership	12	43	63	73	75	67	60		
Mortgage principal residence	7	38	49	43	26	7	33	67.0	76.1
Line of credit	6	17	20	23	15	5	16	5.0	13.5
Credit card and instalment debt	36	50	47	42	33	15	38	1.8	3.0
Student loans	31	23	9	13	4	1	12	7.3	10.4
Vehicle loans	19	29	26	25	17	6	21	9.0	11.2
Other debt	19	22	21	17	12	5	16	4.0	9.3

Source: "The Assets and Debts of Canadians. An overview of the results of the Survey of Financial Security", Statistics Canada Cat. No. 13-595-XIE, 2001, Table 3.10a, b and d.

Household debt per \$100 of assets increased from \$14 in 1984 to \$18 in 1999, an increase that was concentrated among the young (Figure 1). Indebtedness increased while the real after-tax income of family units remained unchanged and real net worth of family units, partly as a result of changes in home ownership and the value of homes, increased by 11 per cent<sup>3</sup>. The increase in indebtedness reflects the increase in the incidence and average amounts of mortgages on owned family residences discussed above, and increased use of consumer credit.

**Figure 1 Debt per \$100 of assets, by age of major income recipient, 1984 and 1999**



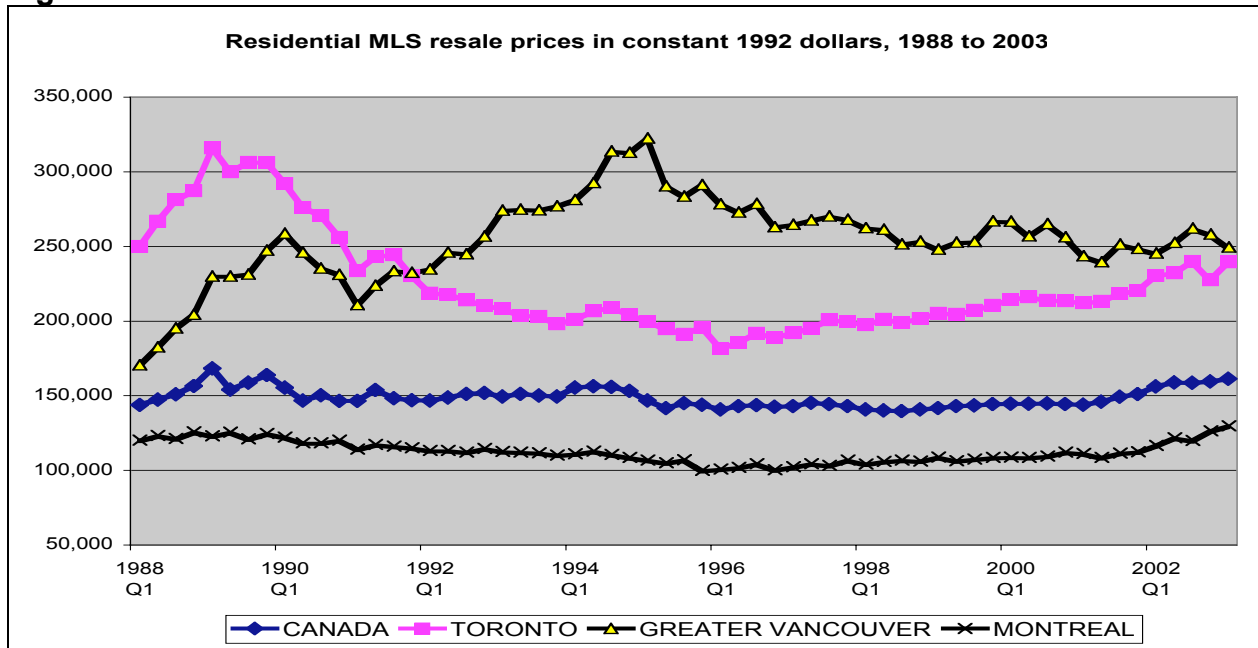
Source: "The Assets and Debts of Canadians. An overview of the results of the Survey of Financial Security", Statistics Canada Cat. No. 13-595-XIE, 2001, Chart 4.4c.

<sup>3</sup> "The Assets and Debts of Canadians. An overview of the results of the Survey of Financial Security", Statistics Canada Cat. No. 13-595-XIE, 2001, p. 29.

## 2.2 Recent developments in the housing market

Now we shift forward and include developments in the last five years. Relative to the Consumer Price Index (CPI), house prices in the resale market in Canada today are approximately the same as they were 15 years ago. The average “real” price of existing homes sold through the Multiple Listing System (MLS) was about the same in 2002 as in 1989 (Figure 2).

**Figure 2**



Source: Canadian Real Estate Association. Monthly volume and value data converted to quarterly price data by author.

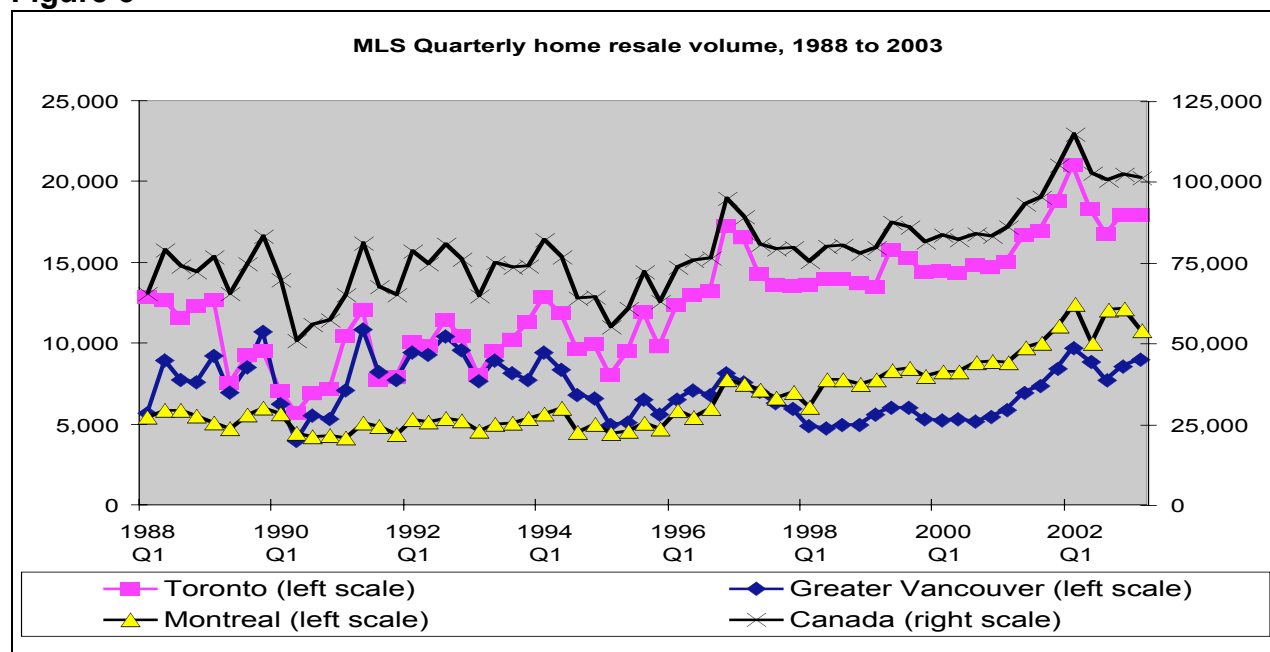
In Canada on average, house prices in the country as a whole remained flat from the late 1980s to the late 1990s, thus gradually declining in real terms. Starting in 1999, real house prices began to increase, and they continue to do so today. Average price changes in all of Canada mask considerable variety across the country. As shown in Figure 2, Toronto experienced a housing price bubble in the late 1980s. Real house prices dropped in Toronto and Montreal during the first half of the 1990s, and increased steadily from 1996 on; relative prices in Vancouver peaked in 1995.

The volume of sales of existing houses was relatively steady throughout 1988-1996 at about 75,000 per quarter, temporarily dropping below 60,000 in 1990 and 1995 (Figure 3). Starting in 1997, the resale volume increased to about 85,000, and in 2002 it reached 100,000 per quarter. The recent increase in turnover of the stock occurred in all three major metropolitan areas.

In the last four years, from the first quarter of 1999 to the first quarter of 2003, MLS prices increased by 27.5 per cent, with most of the gains in the past 24 months. This is more than twice the increase in consumer prices of 12.0 per cent, for a real gain of 13.9 per cent. In terms of Canadian dollars as of early 2003, the average home owner is about \$24,000 richer today than

four years ago, purely as a result of changes in the real price of the family home. In the three years before early 1999 real house prices did not change<sup>4</sup>.

**Figure 3**



Source: Canadian Real Estate Association.

In total, the value of all homes owned by their occupants increased by 34 per cent or \$380 billion during the past four years. Part of this increase results from an increase in scale, as the number of families increased by 5.3 per cent. Most of the change is a result of price changes in the resale market<sup>5</sup>.

### 2.3 Recent growth of mortgage and consumer credit

Mortgage borrowing activity accelerated during the past four years, and the stock of residential mortgage debt was 25 per cent higher at the end of the first quarter of 2003 than four years earlier (Table 3). Mortgage debt did not change as much as the value of the owner-occupied stock of housing (34%) that occurred during these same four years. This change in the stock of debt may reflect activity and prices in the housing market, and does not clearly point to increased extraction of home equity for consumption and other purposes.

Other forms of borrowing by households, however, increased more rapidly, and the share of mortgages in total household debt fell to less than 70 per cent. Consumer credit increased by 41

<sup>4</sup> To calculate the change in home equity, we used the value of the average owned family home in the first quarter of 1999 as reported in the SFS (\$149,700), and applied the change in the average MLS price to this value. By using the average MLS price to value the stock of owner-occupied dwellings, we are ignoring differences between the composition of the stock and activity in the market for existing dwellings. For instance, the average MLS price may change because of higher turnover in high-priced homes, without an increase in house prices.

<sup>5</sup> In this calculation we assume that the share of families that own their principal residence remained at 60 per cent, the number observed in the 1999 SFS.



per cent over four years, driven by very large increases in lines of credit. Among lines of credit are home equity lines of credit, i.e., credit secured by the family home. This type of credit appears to be replacing personal loans and other forms of consumer credit, if not credit card debt which also increased sharply in the past several years<sup>6</sup>.

**Table 3 Household debt and value of owner-occupied housing stock and first quarter, 1996 – 2003 (billions of dollars)<sup>7</sup>**

First quarter of	Residential mortgages	Consumer credit	Lines of credit (Banks)	Household debt	Mortgages as share of total debt	Value of owner-occ. homes	Ratio debt / value
1996	345.5	122.8	14.1	468.3	73.8%	1,016	46.3%
1997	364.3	135.7	17.3	500.0	72.9%	1,067	46.7%
1998	381.1	148.1	23.6	529.2	72.0%	1,075	49.9%
1999	402.3	161.0	26.1	563.3	71.4%	1,104	51.0%
2000	421.3	182.4	35.1	603.7	69.8%	1,171	51.6%
2001	439.3	196.0	41.7	635.4	69.1%	1,215	52.3%
2002	468.7	208.2	49.4	676.9	69.2%	1,357	49.9%
2003	504.7	226.8	60.9	731.5	69.0%	1,482	49.4%
Change 1999-2003	25%	41%	133%	30%		34%	

Source: Bank of Canada: Weekly Financial Statistics, June 6, 2003; August 31, 2001; February 2, 2000; July 3, 1998; and November 14, 1997; and calculations by the author as described in footnote 4.

Total household debt is now larger than personal disposable income<sup>8</sup>. However, due to lower interest rates, interest payments on household debt have declined in relation to disposable income, from 8.1 per cent in early 1999 to 7.8 per cent in 2002.

While household debt has not kept pace with the value of the owner-occupied housing stock in the past two years, the very high rates of increase for lines of credit suggest that borrowing against home equity for purposes other than financing acquisition or upgrading of the family residence was on the rise. Regrettably, the Bank of Canada and Statistics Canada do not provide more information on these forms of credit.

<sup>6</sup> Detail on consumer credit is available only for commercial banks and not for all lenders. The banks accounted for \$97.2 billion of \$161 billion in the first quarter of 1999, and \$148.8 billion of \$226.8 billion in the first quarter of 2003. Detail for commercial banks, in billions of dollars: lines of credit: 26.2 (in early 1999) and 60.9 (in early 2003); credit card debt: 10.5 and 29.7; personal loans: 37.0 and 37.6, and other: 25.1 and 21.2.

<sup>7</sup> a) The amounts for lines of credit pertain to the commercial banks only. Banks account for approximately two-thirds of consumer credit. No details on non-bank consumer credit are published. b) Household debt pertains to all households, whereas the value of owner-occupied homes excludes a large share of households, those that rent their main residence. The ratio of debt to value is not meaningful other than as a crude indication of a possible trend. According to the Survey of Financial Security (SFS), mortgages on families' principal residences totalled \$304 billion in early 1999. The amounts in this table include all residential mortgages, including those on rental dwellings and structures other than principal residences. Consumer debt also pertains to all households. c) The value of the owner-occupied housing stock for 1999 is from the SFS. This value is extrapolated forward and backward using MLS prices, the number of economic families, and a constant home ownership share of 60% of families. According to the SFS, mortgages on families' principal residences totalled \$304 billion in early 1999. The amounts in this table include all residential mortgages, including those on rental dwellings and structures other than principal residences. Consumer debt also pertains to all households.

<sup>8</sup> CIBC World Markets "Household Credit Analysis", January 23, 2003.

## 2.4 Borrowing against home equity

Very recently, CIBC World Markets (CIBC-WM) estimated that home owners borrowed \$22 billion against home equity between the beginning of 2001 and April of 2003, a period of more than two years<sup>9</sup>. To put this in perspective, in 2002 the value of economic activity in Canada, as measured by Gross Domestic Product, was \$1,062 billion; the scale of this type of borrowing thus was a little over 2 per cent of GDP. The estimate has two components:

- An increase in home equity loans of \$10 billion
- Refinancing of mortgages with an increase in the principal amount totalling \$12 billion.

This estimate, we have learned, is based on information about mortgage lending activity from two commercial banks covering a good part of the residential mortgage market, and information from credit bureaux about consumer credit.

A second estimate is available from the Residential Mortgage Survey, a quarterly survey conducted by Clayton Research/Ipsos-Reid and reported in the Financial Industry Research Monitor (FIRM). The results of the March 2003 survey were used to provide, for the first time, an estimate of new borrowing against home equity. According to these new tabulations, home owners engaged in new borrowing against home equity of \$33 billion in the year 2002, in the following forms:

- New home equity lines of credit of \$22.2 billion
- New home equity personal loans of \$5.0 billion
- Refinancing of mortgages with a larger principal amount totalling \$5.5 billion.

Considering that these numbers pertain to a single year only, while the earlier estimates are for a period of more than two years, this second estimate is much larger than the first one. The estimates agree roughly on the size of cashing out of home equity through refinancing of mortgages (\$12 billion over 2+ years and \$5.5 billion in 2002). As for home equity loans, both estimates include lines of credit as well as personal loans.

The second estimate for home equity lines of credit is larger than the change in the balance of lines of credit outstanding from early 2002 to 2003, as given in Table 3. This may indicate that home equity lines of credit are replacing other lines of credit, or that lenders other than commercial banks are issuing much credit in this form. The FIRM estimates do not consider how long the debt is held before repayment. This is particularly important for lines of credit where the borrowing term might actually be very short. Both the FIRM and the CIBC-WM estimates are gross estimates, i.e., repayments are not netted out.

Neither the CIBC-WM nor the FIRM survey estimate explicitly includes reverse mortgages. Reverse mortgages allow ageing home owners to tap into home equity without selling the home first, and an argument could be made that these loans are a form of home equity withdrawal. The Canadian Home Income Plan (CHIP), Canada's first and only reverse mortgage program, has arranged more than \$450 million in reverse mortgages<sup>10</sup>. This is a small amount compared to the two estimates of the size of recent home equity withdrawals, and it represents activity over a long period of time.

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<sup>9</sup> CIBC World Markets Research: "Banking on the House", June 19, 2003.

<sup>10</sup> Information obtained from the CHIP web site.

## 2.5 Developments in the U.S.

In the U.S., house prices have increased by more than 50 per cent since 1995, and more than 30 per cent in real terms. Prices continued to rise throughout 2002<sup>11</sup>. The average home owner gained \$70,000. There appears to mounting concern that there is a speculative housing price bubble in the U.S.<sup>12</sup>. According to The Economist, the ratio of house prices to rents is more than 15 per cent above its 1975-2002 average, and the ratio of house prices to average income is 12 per cent higher than its long-term average, the highest levels recorded since 1975<sup>13</sup>. Both ratios increased markedly in the last four years. By contrast, house prices in Canada in recent years have only recovered to the average longer-term ratios of house prices to rents and to income.

**Table 4 Household debt, U.S., first quarter, 1996 - 2003 (billions of U.S. dollars)**

First quarter of	Home mortgage	Consumer credit	Household debt	Mortgages as share of total debt
1996	3,446	1,151	5,006	68.8%
1997	3,638	1,230	5,313	68.5%
1998	3,892	1,284	5,659	68.8%
1999	4,246	1,375	6,134	69.2%
2000	4,606	1,480	6,631	69.5%
2001	4,996	1,629	7,200	69.4%
2002	5,522	1,723	7,863	70.2%
2003	6,231	1,781	8,667	71.9%
Change 1999-2003	47%	30%	41%	

Source: U.S. Federal Reserve Board, Flow of Funds Accounts of the United States, Statistical Releases of June 5, 2003 and December 7, 2001, Table D3: Debt Outstanding by Sector. Total household debt includes several small items in addition to home mortgages and consumer credit.

Household debt in the U.S. increased by 41% between 1999 and 2003, considerably more than the 30 per cent increase recorded in Canada (Table 4). U.S. households displayed a preference for mortgages, whose share of household debt increased from 69 to 72 per cent, while in Canada the share of mortgages declined from 71 to 69 per cent. The boom in house prices in the U.S. probably accounts for much of the increase in mortgage debt, as turnover of the housing stock at higher prices is financed by larger mortgage loans. However, many U.S. households are also increasing the size of their mortgages by refinancing their mortgages with a cash-out.

We have found several estimates of the amount of home equity cash-out through increases in mortgage principal in the year 2001. Deep and Domanski (2002) put forward an estimate of \$150

<sup>11</sup> The figures quoted are from CIBC World Market's Occasional Report 39 "Last Man Standing". The Economist cited 51% and 27% respectively. The Economist has its own set of quarterly house price indexes for 13 countries. For Canada The Economist gives the nominal and real changes since 1995 as 18 and 2 per cent, well below the MLS price increases for this period.

<sup>12</sup> The Economist (2003), Baker (2002) and Poole (2003) are agreed on this.

<sup>13</sup> Jeff Rubin and Benjamin Tal produce similar numbers in "The Last Man Standing".

billion, calculated as follows: 11.2 million households refinanced mortgages; 54 per cent did so with a cash-out of more than 5 per cent of the mortgage principal; and the average cash-out is assumed to be \$25,000. A second, lower estimate is derived from responses to questions added to the Survey of Consumer Finances in the first half of 2002 by the Federal Reserve Board: 11 million households refinanced mortgages in 2001 and the first quarter of 2002, and 45 per cent liquefied an average of \$26,700 in home equity. This amounts to \$131.6 billion, or \$105 billion at annual rates, i.e. 1.0 per cent of U.S. GDP. Finally, Freddie Mac (2003) recently reported \$84 billion of mortgage refinancing activity in 2001, including transactions with an increase of more than 5 per cent in the principal. The amount is net of some \$70 billion in consolidation of second mortgages and home equity debt, according to this source. Freddie Mac's estimate for the year 2002 is \$96 billion in mortgage refinancing net of consolidations.

These estimates pertain to mortgages only, and do not include home equity loans.<sup>14</sup> The Federal Reserve Board reports the value of home equity loans and lines of credit outstanding in its Quarterly Flow of Funds Accounts. It reported an increase of \$129.8 billion in 2002, following an increase of \$68.8 in 2001<sup>15</sup>. In combination with Freddie Mac's estimates of mortgage refinancing this indicates a level of borrowing against home equity of \$153 billion in 2001 and \$226 billion in 2002. Note that this is a hybrid estimate, as the mortgage refinancing component reflects gross new borrowing whereas home equity loans and lines of credit are net of repayments.

This rate of home equity withdrawal, in all likelihood, is higher than the rate in Canada. Using the CIBC-WM estimate of \$22 billion over somewhat more than two years, activity in the U.S. is approximately twice as high as in Canada, using a 10-to-1 rule of thumb to correct for the difference in size and recognising that the Canadian numbers for home equity loans and lines of credit measure gross new borrowing, not the change in loans outstanding. If one were to use the FIRM estimate one would conclude that activity is at a similar level in both countries, but the treatment of lines credit is so different as to make a direct comparison unfeasible.

We conclude this section with a few observations about home equity borrowing in the U.S. based on a 1997 study by Canner et al. In the U.S., home equity loans have become an important form of consumer credit, reaching \$420 billion or one third of mortgages outstanding by the end of 1997. Thirteen percent of home owners had such loans at that time. Lines of credit, generally with variable interest rates and flexible repayment schedules, and mainly from commercial banks, were used by 8 per cent of home owners. Five per cent of home owners had traditional loans backed by the value of the home, often in the form of a second mortgage<sup>16</sup>.

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<sup>14</sup> CIBC World Markets gave an estimate of \$420 billion over two years, and \$300 billion in 2002 alone. See "Last Man Standing", page 2, and "Ahead of the Curve". In "the more recent "Banking on the House" an estimate of \$450 billion was cited. This estimate may include some activity in early 2003.

<sup>15</sup> The stock of home equity debt increased from \$630.6 billion at the end of the year 2000 to \$699.4 billion at the end of 2001, and to \$829.2 billion at the end of 2002. It reached \$902.3 billion by mid-2003. Federal Reserve Board, Quarterly Flow of Funds Accounts, Table L.218 Home Mortgages.

<sup>16</sup> Generally, traditional home equity loans are classified as mortgages, and home equity lines of credit as consumer credit. Loans classified as mortgages would be included in estimates of home equity withdrawal only to the extent that they involve cash-outs when refinanced. The same comment applies to the Canadian estimate of home equity withdrawal by CIBC World Markets Research.

The extent of home equity borrowing is influenced by the amount of home equity available. As high loan-to-value (LTV) mortgages became more prominent, the scope for home equity loans was reduced. As well, declines in mortgage interest rates may reduce the amount of home equity loans outstanding as home owners refinance mortgages and consolidate their debts.

In the U.S., households with a home equity line of credit typically own relatively expensive homes, have higher incomes, and have substantially more equity in their homes than most other home owners, including those who have a traditional home equity loan. Delinquency rates on both traditional home equity loans and home equity lines of credit are lower than for any other type of consumer loan. The principal uses of home equity credit are home improvements and repayment of other debts. Lines of credit are also used to buy vehicles and to pay for education and vacations. Both kinds of home equity credit are substitutes for other types of consumer credit.

### **3 Home equity withdrawals and consumer expenditures**

#### **3.1 Home equity cash-outs and consumer expenditures**

“If Canadian consumers are anything like their U.S. counterparts,...., a proportion of the cash borrowed against home equity is used for increased spending – amounting to one third of retail sales growth in the year ending April 2003.” So say Benjamin Tal and Grigory Karakoulis of CIBC World Markets in their recent bulletin “Banking on the House”<sup>17</sup>. Theirs is a crude estimate based on U.S. survey data that are reviewed below.

The FIRM survey asked those who borrowed against home equity what they used the money for (Table 5). The main purpose of borrowing varies by type of loan. Cash-out refinancing of mortgages is used primarily for debt consolidation and renovations; almost half the personal loans backed by home equity were intended for financing the acquisition of a vehicle. Lines of credit seem to be used for all kinds of things, without any of the uses being dominant.

Consumer spending certainly is one of the main applications of the amounts borrowed: Based on the calculations in Table 5, approximately one-fifth is for purchases of vehicles, and another seven to eight per cent for daily spending<sup>18</sup>. The purposes “Education” and “Other” may also involve some consumer expenditure. Approximately one third of the new funds appears to go towards consumer expenditures. Renovations may come under residential construction but may also give rise to consumer expenditures, for instance if the home owner does the work herself. Either way there is a fairly immediate impact on economic activity.

The FIRM survey data indicate that, in 2002, \$10 billion or 1.6 per cent of consumer expenditures, and between \$15 and \$20 billion, or 1.5 to 2.0 per cent of GDP were financed by borrowing against home equity. The CIBC-WM estimate would lead to smaller numbers.

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<sup>17</sup> “Banking on the House”, page 2.

<sup>18</sup> As noted in Section 2.4, we do not know how quickly lines of credit are repaid. Funds used for daily spending are perhaps borrowed on a short-term basis only, and quickly repaid. If lines of credit are used for short-term bridge financing, they change the timing but not the amount of consumer expenditures, and their impact on economic activity over a period of a year would be negligible.

However, these numbers are questionable as a measure of the impact of borrowing against home equity on economic activity, as they do not take account of repayments of loans. Households that have withdrawn home equity in the past have lower current consumption as they have to repay these loans.

Consider a steady state situation, where the amount of new loans against home equity equals repayments of the same type of loans, and the level of new borrowing does not change from year to year. In this situation, borrowing against home equity is a means for certain households to finance consumption, but it has no net effect on consumption. However, when new borrowing increases, it is meaningful to say that consumer spending is boosted by home equity.

In the absence of information about repayments, changes in new borrowing against home equity might be used as a basis for measuring impact on the economy<sup>19</sup>. The numbers for the U.S. indicate a rather large impact in 2002. To get estimates for Canada one would need consecutive surveys by Clayton Research/Ipsos-Reid or periodic calculations by CIBC-WM. Uses of the funds should also be monitored from year to year. If incremental new borrowing is used to pay off debts, there is no impact on consumer spending and the economy.

**Table 5 Main purposes of funds borrowed against home equity, Canada, 2002**

	Refinanced mortgage with cash-out	Home equity Line of credit	Personal loan	Total Amount (\$ billions)	Shares (%)
Renovations	21%	23%	7%	\$6.7	20.4%
Purchase vehicle	2%	18%	45%	\$6.4	19.7%
Debt consolidation	58%	12%	18%	\$6.8	20.7%
Investments	0%	9%	22%	\$3.1	9.6%
Daily spending	0%	11%	0%	\$2.5	7.5%
Finance home	11%	5%	0%	\$1.7	5.3%
Education	4%	4%	4%	\$1.3	4.0%
Other	5%	17%	2%	\$4.2	12.8%
Borrowers (thousands)	180	1,110	190	1,480	
Amounts (billions)	\$5.5	\$22.2	\$5.0	\$32.7	

Source: Clayton Research / Ipsos-Reid: FIRM Residential Mortgage Survey, March 2003. The percentages in the first three columns pertain to the share of borrowers. Columns four and five were calculated by applying the percentages in the first three columns to the amounts borrowed.

### 3.2 Comparing Canada and the U.S.

How U.S. households that refinance mortgages with a cash-out spend that cash has been examined twice in recent years (Canner et al 2002 and Brady et al 2000). The two surveys gave very similar results (Table 6). About one sixth of the funds is used directly for consumer spending. Most of the one-third that goes towards home improvements probably is recorded as

<sup>19</sup> However, the first difference of new loans issued is a less precise measure. Consider an increase in borrowing to a new level which is sustained in subsequent years. A net measure would be positive in the first year, but also in the second and subsequent years. A first difference measure would be positive only in the first year, and show no impact in the second and later years.

investment in residential structures, but part of it may also take the form of consumer expenditures, e.g. furnishings or building materials and hardware bought by the home owner. Whether in the form of investment or consumption, about one-half of the liquefied equity gives rise to final demand in the economy.

If we assume that home equity loans and lines of credit are used in the same way as mortgage cash-outs, and that uses of the funds did not change drastically, the impact of the \$226 billion home equity withdrawal in 2002 on the U.S. economy would have been about \$113 billion. If we reduce this estimate somewhat to reflect repayments of increases in principal of mortgages that were refinanced in previous years, and with GDP at just over U.S. \$1.0 trillion, this indicates an impact of about one per cent of GDP.

**Table 6      Uses of funds cashed out through mortgage refinancing, U.S. households (percentage distribution)**

	1998-1999	2001-2002
Repayment of debt	28%	26%
Home improvements	33%	35%
Consumer expenditures	18%	16%
Stock market or other financial investments	2%	11%
Real estate or business investment	19%	10%
Taxes	0%	2%

Source: Brady et al (2000), Table 6, and Canner et al (2002), Table 6.

To conclude this section, we mention several studies of consumption effects of home equity withdrawal, as reviewed in a recent study by the OECD (Girouard and Blöndal 2001).. The estimates vary widely, and this suggests that it is important not only to measure home equity withdrawal activity, but also the uses to which the funds are put.

- In 1989, Poterba and Manchester studied balance sheets of a large sample of U.S. households with second mortgages, and estimated that the propensity to consume out of funds raised was 75 per cent. By contrast, recent surveys find a propensity to consume of less than 20 per cent (Table 5).
- According to several U.K. studies, a very large share of housing equity withdrawal finds its way into higher consumer expenditures. By contrast, a study by Hamnett et al in 1992 examined trading down and last-time selling, and found that there were only modest effects on consumer expenditures<sup>20</sup>.
- Girouard and Blöndal also provide their own direct estimates of the impact of home equity withdrawal on consumption. Their measure of home equity withdrawal is the net change in mortgage lending less residential investment. They find that it has only a small effect on consumption when introduced jointly with several forms of wealth (financial, housing, other)<sup>21</sup>.

<sup>20</sup> Hamnett conducted a survey of over 10,000 households in the U.K. and found that around 12 per cent had inherited property. His survey revealed that around 14 per cent of the property inherited was used to buy consumption goods (Girouard and Blöndal 2001, footnote 11 p. 13).

<sup>21</sup> The definition of housing equity withdrawal is given in Girouard and Blöndal (2001), Table 4, footnote 1., page 39. In the regression it is featured as a ratio to disposable income. Between 1970 and 1999 this ratio varies between 0 and – 6 per cent. Home equity withdrawal thus defined includes mortgages that finance turnover of the housing

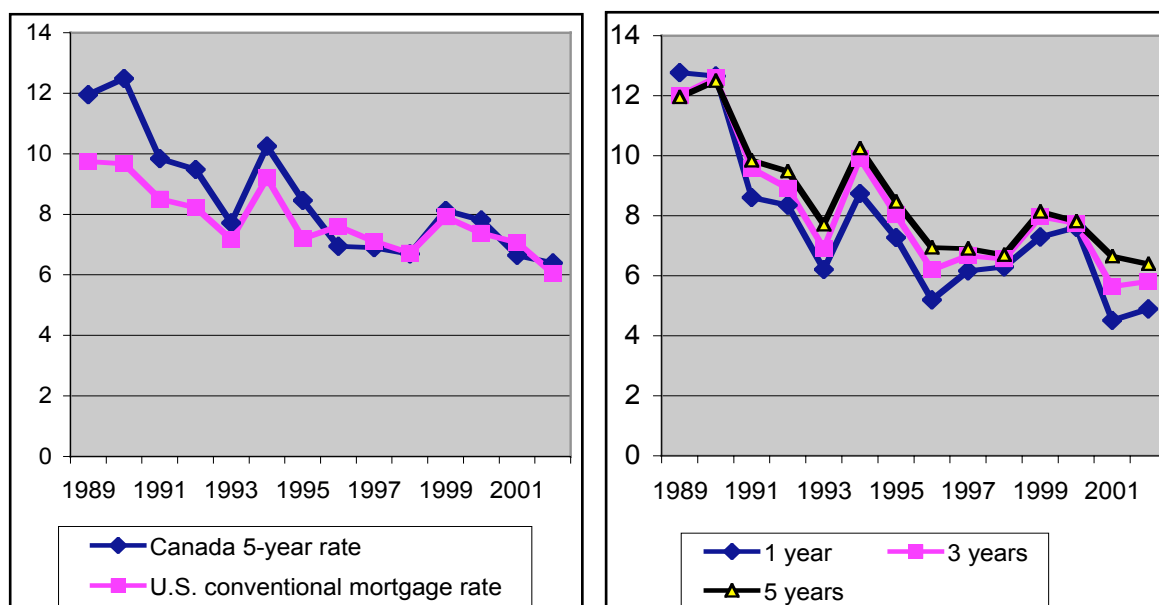
To sum up, we find that Canadians and Americans have rather similar plans for using the funds obtained by borrowing against home equity. We say this about all such borrowing by Canadians, as reported in the FIRM survey, and refinancing of mortgages with a cash-out in the U.S. In contrast to recent surveys in Canada and the U.S. that give very similar findings, earlier studies provide a wider set of estimates.

## 4 Causes and consequences

### 4.1 Enabling factors in the market for loans to households

The recent rapid growth of borrowing against home equity in Canada and the U.S., and the boom in refinancing of mortgages, in particular in the U.S., result not just from increases in house prices. They were made possible by recent declines in interest rates and innovation in mortgage and consumer credit markets that followed deregulation and more intense competition in financial markets.

**Figure 4 Mortgage interest rates, Canada and U.S., and three Canadian rates, December 1989 to December 2002**



Sources: Canadian Housing Statistics, various issues, and Federal Reserve Board (website).

The Canadian 5-year mortgage rate was higher than the U.S. conventional mortgage rate in the late 1980s and early 1990s, but since then the two rates have converged. Both rates have recently reached lower levels than they reached in 1995-1997. Shorter-term mortgage rates in Canada fell below 5 per cent in 2001 and 2002.

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stock. Other studies use a narrower definition of home equity withdrawal, one that includes only new or increased loans against equity in a home that was already owned by the borrower.



The recent low interest rates made it economically advantageous for many U.S. households to refinance mortgage loans in recent years. Home owners typically refinance a fixed-rate mortgage if the rate they pay is 50 to 200 basis points above the rate on new mortgages. At several times during the 1990s, refinancing activity surged as many borrowers found themselves in this situation (Bennett et al 1999). In Canada, where mortgages have much shorter terms, borrowers took advantage of lower rates at renewal of their contracts, without having to take action themselves. But interest rates are not the full story.

In the U.S., the cost of refinancing of mortgages has declined sharply. According to Deep and Domanski (2002), borrowers can repay mortgages before the scheduled maturity date typically without penalty. However, there are costs of completing the refinancing transaction, and these fell from 200 points (2 per cent of the loan amount) in 1990 to 100 points recently. Computerised underwriting by the two government-sponsored enterprises (GSEs), Fannie Mae and Freddie Mac, led to a sudden drop in closing cost in 1998. Having operated mainly in the secondary mortgage market, the GSEs became direct lenders, taking nearly half of new mortgage loans from that year on.

Subprime mortgage lending has become more common, with \$160 billion in new issues in 1999 (Temkin et al 2002). Subprime lending refers to relatively risky loans. The lion's share of these are loans to borrowers with poor credit histories or who cannot document all information needed to meet a high-quality borrower standard. High loan-to-value (LTV) mortgages are also included. Subprime lending was developed largely by private lenders, but the GSEs seem poised to become more involved. The removal of regulatory restrictions and the development of this type of lending has contributed to the increase in borrowing against home equity. Most of the loans to borrowers with poor credit histories in 1999 were refinanced loans and the majority of these involved a cash-out.

Taking a longer-term perspective, Girouard and Blöndal (2001) note that until the 1980s, mortgage markets in most OECD countries were highly regulated, and competition was weak. In the U.S., savings and loan associations were constrained by regulation to provide fixed-rate, level-payment mortgages funded by insured deposits. Maximum interest rates on deposits under Regulation Q limited availability of funds when market interest rates were high. In other countries regulations limited access to mortgage loans in other ways.

In the English-speaking and Nordic countries, reforms were completed by the mid-1980s. In Canada, ceilings on interest rates and restrictions on commercial bank involvement in mortgage financing were abolished in 1967, and since then there has been competition between banks and trusts and loan companies.

Further reform of the financial sector in the 1990s appears to have further intensified competition. In Canada, since the high interest rates of the 1970s, terms of mortgages are much shorter than the amortisation period, and may be as short as six months. Variable rate mortgages are also available. Thus, borrowers have had opportunities to pay down the mortgage faster or take out more money at renewal, although this was not always without cost. Today, the variety of mortgage features offered by lenders seems virtually unlimited. This is illustrated by a

comparison of features of mortgages today and in the 1970s, produced by the Canadian Bankers Association and reproduced as Exhibit 1.

According to this document, the market is so competitive that lenders discount mortgage rates, generally based on the customer's relationship with the financial institution. Although flexibility is the rule, penalties still apply, but lenders sometimes waive these. One result of all this is that it is difficult to know the actual mortgage interest rate and costs of closing and after closing. Interest rate statistics reflect the rates quoted by banks, not the average rates on new mortgages issued.

#### **4.2 What if the U.S. bubble bursts?**

In a paper written for the Centre of Economic and Policy Research in August 2002, Dean Baker characterises the run-up in house prices in the U.S. in recent years as a house price bubble (Baker 2002). Over seven years, house prices increased by 30 per cent more than the rate of inflation. House prices also outpaced rents, suggesting that demand for rental housing is lagging and that families are buying homes in large part as an investment, in the hope of benefiting from further price gains, rather than primarily as a place to live.

Baker sees price levels as unsustainable and is concerned about the effect of a decline in house prices on the economy and the financial system. He considers two scenarios: the bubble proves to be little one when it bursts, with a decline of 11 per cent in real house prices, and a big bubble, with a drop in prices twice as large. If the bubble is big and it bursts, investment in residential construction would fall back to historical levels, with a decline of \$136 billion. Annual consumer expenditures would fall by \$160 billion as a result of both direct effects of house building activity (purchases of furnishings and appliances) and a wealth effect on consumption. To measure the wealth effect, Baker uses coefficients from some of the studies reviewed below (Case, Shiller and Quigley 2001; Dynan and Maki 2001; and Maki and Palumbo 2001).

As regards financial disruptions, Baker notes that even after the price hikes of recent years, home equity is a low 55 per cent of market value. In the 1950s, home equity was 77 per cent of market value, and from 1960 to 1990 it was two-thirds. As the baby boom generation bought their family homes some time ago, they should now be paying off their mortgages, and home equity should be rising as a share of market value, but it has dropped instead. If house prices decline by 22 per cent (the big bubble scenario), home equity will drop to 45 percent of market value, a historically low number. Many home owners would find themselves with debts larger than the value of their homes. This could affect their willingness to service debt, while a weak economy would undermine their ability to do so. Mr. Baker calls for strong stimulus to prevent a collapse of the housing price bubble and to mitigate the effects of such a collapse. He speaks approvingly of the shift in fiscal policy by the U.S. government, while calling it insufficient.

**Exhibit 1 Changes in the Canadian Mortgage Market***facts***Mortgages – Then and Now****Growing Choice, Growing Flexibility, Better Price**

October 2002

Over the past 30 years, mortgages have changed in many ways with new features that benefit consumers. This table lists some of the key developments.

Feature	2000s	1970s
<b>Term/Rate Options</b>	<ul style="list-style-type: none"> <li>Closed, open and convertible mortgages are available.</li> <li>Convertible mortgages offer lower rates than same-term open mortgages. Some financial institutions allow individuals to change to a closed term or another convertible term (with the same financial institution) without penalty.</li> <li>Variable rate, multi-rate or fixed-rate mortgages are available, as well as six-month, one-, two-, three-, four-, five, seven and ten-year and terms of mortgages.</li> <li>Increased choice can offer protection against rising interest rates.</li> </ul>	Only five-year closed mortgages were available.
<b>Payment Features</b>	<ul style="list-style-type: none"> <li>Monthly, biweekly, weekly and accelerated payment options (shortening the total mortgage repayment period) help borrowers pay off mortgages more quickly, significantly reducing total interest paid.</li> </ul>	Monthly payments only.
<b>Rates &amp; Incentives</b>	<ul style="list-style-type: none"> <li>The market is so competitive that some lenders may discount mortgage rates, generally based on the customer's relationship with the financial institution.</li> <li>Some lenders offer incentives including cash-back.</li> </ul>	Mortgages were only available at the posted rates.
<b>Prepayment Provisions</b>	<ul style="list-style-type: none"> <li>Prepayment provisions vary and permit, for example, an annual lump sum payment of up to 25 per cent of the outstanding balance, a doubling-up of a monthly payment, or an increase in the periodic payment amount.</li> <li>Total prepayment of the mortgage before the end of the term is possible, but may be subject to penalty. Portability and Blend and Extend options allow consumers to avoid prepayment penalties.</li> </ul>	Closed mortgages were the norm; often no prepayments were allowed.
<b>Prepayment Charges</b>	<ul style="list-style-type: none"> <li>No charges apply with portable mortgages. These mortgages allow customers to transfer the existing fixed-rate and loan balance to a new mortgage on a different property with the same bank for the remaining term of the original mortgage (portability option).</li> </ul>	Where prepayments existed, those wishing to be released from a mortgage paid the full prepayment charge, regardless of the circumstance.
<b>Blend-and-Extend Option</b>	<ul style="list-style-type: none"> <li>Allows a mortgagee to increase the amount of and extend the term of a fixed rate mortgage before the maturity date, often avoiding any prepayment charges on the smaller mortgage.</li> </ul>	Not available.
<b>Plain Language Mortgage Documents</b>	<ul style="list-style-type: none"> <li>Banks have committed to simplify and clarify the language used in mortgage documents to make them more accessible to consumers, a process already underway at some banks. All consumer mortgage documents will meet the CBA's Plain Language Principles by 2005 (<a href="http://www.cba.ca/en/viewdocument.asp?fl=3&amp;sl=11&amp;tl=127&amp;docid=296&amp;%20pg=1">http://www.cba.ca/en/viewdocument.asp?fl=3&amp;sl=11&amp;tl=127&amp;docid=296&amp;%20pg=1</a>)</li> </ul>	Mortgage contracts and other documents were shaped by decades of law making and legal decisions, resulting in complex documents which were not as consumer-friendly as they could be.

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To this scenario William Poole, president of the Federal Reserve Bank of St. Louis, adds a concern about the Government Sponsored Enterprises (GSEs) Fanny Mae and Freddie Mac (Poole 2003). At present, these enterprises play a very large role in the mortgage market, particularly in high-ratio mortgages. They finance this activity in large part by relatively short-term obligations and by securitization. These debts are not guaranteed by the U.S. government, Mr. Poole writes, but the market acts as if they are. Mr. Poole worries about the chaos that may ensue if the GSEs cannot meet their obligations. He asks what would happen if the market value of GSE debt were to fall sharply, because of ambiguity about the financial soundness of GSEs, and the willingness of the federal government to backstop their debt. He says he does not know, and neither does anyone else. He argues that the government should resolve the ambiguity regarding its support for the GSEs, and that the two lenders should increase their capital.

Thomas Palley recently argued in Challenge that the Federal Reserve should give itself more tools to address speculative price bubbles, whether in the stock market or the housing market (Palley 2003). He calls for use of asset-based reserve requirements. Each type of asset would be subject to its own capital requirement, and the monetary authorities would be able to change these requirements on short notice. If a price bubble occurred in the housing market, the authorities could increase the amount of capital needed to back mortgage loans. This would affect the ability to lend or the cost of those loans, and thus have a dampening effect on the housing market, without affecting other types of credit. If such an instrument were available, authorities would not have to rely on their broad-based interest rate instrument.

This emerging debate in the U.S. is of interest in that it shows the downside of unsustainable hikes in house prices. In Canada, we have found no signs of such a debate, and indeed there is no apparent reason for concern. Borrowing backed by the family home has become more widespread, but house prices have not shown signs of unusual strength. There is no broad-based house price bubble in this country.

## **5 Housing wealth and consumer spending**

Income is the main determinant of consumer expenditures (consumption), but consumer theory also assigns a role to wealth. The main theories are the Lifecycle Theory by Ando and Modigliani, which postulates that consumption is smoothed over a lifetime by accumulation of wealth during working years and decumulation of wealth after retirement, and Milton Friedman's Permanent Income Hypothesis, which emphasises the precautionary motive for saving as a buffer against unexpected fluctuations in income.

In these two theories, the amount of wealth a consumer holds at any time is determined by longer-term consumption plans. Unexpected changes in wealth are not part of these plans and may therefore have a substantial effect on consumption. The main forms of wealth that may have this effect are stock market holdings and housing.

The stock market has been the main source of changes in the value of wealth, but housing is the most important component of wealth for most families. As housing wealth has increased and mortgage and consumer credit backed by real estate have become cheaper and easier to access in

many countries, housing wealth probably has a greater influence on consumption than it used to. A number of recent studies have estimated the quantitative effect of fluctuations in housing wealth on consumption, and examined how this effect has changed over time and how it compares to the effect of stock market wealth.

## 5.1 Effects of housing wealth on consumption

We now set out the various effects of an increase in house prices on consumption. This overview follows and expands on Ludwig and Sløk (2002). An increase in house prices will have a number of effects:

1. *Realising wealth gains by selling.* Consumers who are home owners can realise a gain in the value of their home by selling, and use this in whole or part for consumption if they rent, move in with others, or buy a less expensive home. “Trading down”, i.e. selling and moving to smaller quarters is one particular form of realising wealth gains. As it tends to be part of a life cycle plan, it tends to occur when children leave the home or after retirement, trading-down is probably not very sensitive to house price changes. Estate sales with proceeds distributed to heirs are another form of realisation of wealth with potentially significant effects on consumer spending, but heirs may expect the transfer and merge it into their financial assets.
2. *Reducing consumption to buy at higher prices.* An increase in house prices may induce actual and prospective buyers to reduce their consumption in order to increase the downpayment – a substitution effect. Buyers may also incur more debt than they would if prices were lower, leading to lower consumption in the longer run as a result of higher debt servicing payments. This is the counterpart to the realisation of housing wealth by means of selling.
3. *Realising wealth by borrowing.* Home owners may cash out gains in home equity by refinancing their mortgage with an increase in principal, by means of a second mortgage, a home equity loan, or a reverse mortgage. All or part of the proceeds may be used for consumption. An increase in house prices may help some home owners overcome a liquidity constraint by increasing the amount they can borrow.
4. *Repaying loans.* Cash-outs of home equity need to be repaid with interest and will reduce consumption while loan payments need to be made. Alternatively, the home can be sold and the debt paid off.
5. *An unrealised wealth effect.* Home owners who do not sell or refinance may reduce saving and increase consumption when they consider themselves richer as a result of increased house prices.
6. *Price expectations.* Price increases may fuel expectations of further increases, leading to speculative investments. This may lead families to reduce consumption, or to borrow more, in order to invest in a home when without the price increase they would not have done so, or in a more expensive home than they otherwise would have.

7. *A budget constraint effect.* Higher house prices push up rents (unless house prices increase because demand is shifting from rental to owned accommodation), and renters will then have less money to spend on other consumption items. This effect probably will take more time to be felt than the effects on actual and prospective home owners, and it has a counterpart in increased income and possibly consumption by owners of the rental dwellings.

A run-up in the stock market would have similar effects, excluding the final effect on rents. As well, stock market wealth is rather more liquid than housing wealth, and it does not involve current consumption. In other words, stock market wealth is pure wealth, while housing is a form of wealth that also delivers current services. People need a place to live.

As can be readily seen from the above list, house prices affect consumption in various ways with each effect having a complement, an opposite counterpart. This opposite effect may not be as strong, or it may be spread out over time in a different way. Overall, one could expect an increase in house prices to give consumption a boost in the short to medium term, with a weaker opposite effect in the long term. The timing and magnitude of the wealth effect is a matter of empirical analysis.

A decline in house prices will have opposite effects, but they need not be similar in magnitude and timing. One effect in particular may not be symmetrical. If debt is high in relation to the value of a home, a decline in house prices reduces the extent to which debt is secured. We examined the concern about bursting of a house price bubble in the U.S. in an earlier section of this paper.

Given the many channels through which housing wealth affects the level of consumption, the overall impact can probably best be estimated using econometric methods. Monetary authorities and international organisations have taken an active interest recently. The Federal Reserve Board (FRB) and the International Monetary Fund (IMF) have sponsored studies and surveys, and the OECD and the Bank of Canada have also done some work. We will draw on various studies that have examined the relationship between house prices and consumption, and contrast these effects with those of the stock market.

## **5.2 Econometric analyses of wealth effects**

In a recent paper for the IMF, Ludwig and Sløk (2002) reported that, in OECD countries including Canada, both stock market wealth and house prices have a significant influence on the level of consumption. The elasticity of consumption to house prices, they found, is lower than that of stock market prices in the 15 years from 1985 to 2000. For the earlier period 1960 to 1985, housing wealth had only a small, insignificant effect on consumption. Their regression results suggest that consumer spending in OECD countries has become more sensitive to changes in stock market values and house prices, with stock market values having a stronger effect than house prices.

Using micro data for the U.S., Maki and Palumbo (2001) and Dynan and Maki (2001) come to a similar view: stock market wealth has a large direct effect on consumption. Dynan and Maki measure it as 5 to 15 cents in consumption for a dollar in stock values. They contrast their

estimates to those incorporated in the Federal Reserve Board's model of the U.S., which are in the order of 3 to 5 cents, an effect that is realised gradually over a number of years.

By contrast, Case, Quigley and Shiller (2001) find strong effects of housing wealth on consumption for OECD countries during 1975-1999, and for US states over 1982-1999, and small and insignificant effects of stock market wealth.

Very recently, Lise Pichette and Dominique Tremblay (2003) at the Bank of Canada estimated consumption equations for Canada incorporating human wealth, stock market wealth and housing wealth. They find that housing wealth has a much stronger influence on consumption than stock market wealth, and estimate marginal propensities to consume (MPCs) of 5.7 and 0.5 cents per dollar increase in wealth respectively.

In an international study for the OECD, Girouard and Blöndal (2001) estimate the long-term marginal propensity to consume out of housing wealth in Canada to be 12 per cent and 3 per cent for financial wealth. Their estimate for the long-run effect of financial wealth is close to that of Ludwig and Sløk's 4 per cent. The latter do not provide a number for housing wealth.

Bérubé, Gilles and Denise Côté (2000) estimated the long-term determinants of the personal saving rate in Canada. They include personal net worth in their equations, and found that it did not affect the saving rate much until the 1990s. Between 1990 and 1997, the increase in net worth reduced the saving rate by about 2 percentage points, mainly as a result of capital gains on equities. Their long-term elasticities are small, ranging from 2 to 4 per cent, leading to marginal propensities to consume out of net worth of between 0.4 and 0.9 per cent (i.e., less than 1 cent per dollar of wealth).

The thrust of more recent work is that wealth effects are transitory. Ludvigson, Sydney and Charles Steindel (1999) find that the trend relationship between consumption, wealth and labour income is not stable. Movements in the stock market, they say, appear to influence today's consumption and not tomorrow's.

Yanick Desnoyers (2003) at the Bank of Canada found that stock market wealth and housing wealth have only transitory effects on the level of consumption. The maximum effect of a change in stock values occurs after 3 quarters, with a MPC of 5.8 cents per dollar. After two years no effect remains. Real estate equity has a maximum effect after 6 quarters, with an MPC of 20 per cent. In support of this large number, Desnoyers notes that the Federal Reserve model also has a large effects of housing wealth, one that is 4.4 times that of changes in stock market wealth. After four years, however, no effect remains. In spite of the transitory nature of wealth effects in his analysis, Desnoyers attributes half the decline in the personal saving rate in the U.S. since 1995 to the rise in stock market values.

To sum up, theory and econometric evidence support the idea that fluctuations in wealth due to changes in stock market values and house prices affect the level of consumer spending. This effect has become stronger as home equity values have increased and as borrowing against home equity has become more accessible and less expensive in the past two decades. The literature is far from unanimous about the size of the effect of price fluctuations in wealth on consumer

spending, about whether it is lasting or transitory, and about the relative importance of house prices and stock market values.

## **6 Monitoring and analysis of home equity withdrawals**

### **6.1 Monitoring**

We now turn to the question of how public information about borrowing against home equity should be expanded and improved for the purpose of monitoring and analysis.

At present, the best potential source for monitoring is the FIRM survey. The analysis done on the March 2003 survey could be repeated every quarter. In fact, this would be essential as the measure of impact should be not the level, but the difference of new loans backed by home equity. The source and methodology of the survey are clear, but the sample may be rather small, and estimates of activity from year to year may be subject to sampling error.

The FIRM survey could potentially be expanded to record not just new loans, but also repayment of existing loans and refinancing of home equity loans. The aim would be to estimate the net changes in debt secured by family-owned residences.

To ensure that data on borrowing against home equity are publicly available and of the highest quality, Statistics Canada should take over the task of surveying households about their borrowing transactions. The Survey of Labour and Income Dynamics (SLID) and the Survey of Household Spending (SHS) would seem to be suitable vehicles. The SLID does not cover assets and debts, so the SHS may be the better vehicle as it does cover household finances, and a few questions might readily be added to that part of the questionnaire. Response burden is an issue, however.

The alternative to surveying households is reporting by lenders. As there are only a limited number of lenders, and these have the necessary information in their customer records, it should be possible to obtain complete data of high quality, which would be preferable to sample data based on self-reporting by borrowers. The Bank of Canada could require lenders to report loans secured by the borrower's principal residence as subcategories of personal loans and lines of credit. Lenders could also be asked to report the volume and value of refinanced mortgages, and the incidence and amounts of cash-outs. To cover all activity, this should be required of all lenders, not just the commercial banks.

Household surveys are the only vehicle for recording the uses of home equity withdrawals. The SHS would be the vehicle of choice.

Although as yet a small component of home equity withdrawals, reverse mortgages could be included as a separate category of loans in reporting by financial institutions and in household surveys.

Further, we would suggest that more thought be given to the concept of borrowing against home equity and the ways in which it can be measured. Multiple measures may be needed.



Finally, this is not the only area where reporting or monitoring of financial activity is lacking. Information in the public domain about mortgage and consumer loans is limited to volume and value of a few categories of loans reported by lenders to the Bank of Canada and the Office of the Superintendent of Financial Institutions. Little or nothing is known about the particulars of the loan agreements, including the actual interest rate or the type of variable rate that applies, the amortisation period, the term of the loan, closing costs, penalties, repayment terms, restrictions. All this information is considered commercially confidential by lenders, as is information about borrowing against the home.

## **6.2 Analysis**

The best analyses of borrowing against home equity, in our view, are the two studies by the staff at the Federal Reserve Board: Brady et al (2000) and Canner et al (2002). The studies cover the incidence of the activity, the motives for it, and the uses to which the funds were put. The analysts were able to estimate equations for the probability of refinancing and the probability of cash-outs. The information for these studies came from supplementary questions to the monthly U.S. Survey of Consumer Finances.

A supplement to the annual SHS questionnaire in Canada could generate the same information. The merit of this approach would be that the data about borrowing against home equity are combined with other data about household income, spending and finances. This opens the way to analysis of all spending and finances of households that tap into home equity, and to comparisons between households that borrow against home equity and those that do not. In other words, it makes possible the study of home equity borrowing as part of total household spending and financial behaviour.

In its present form, the SHS provides no information specifically about borrowing against home equity and its effect on consumption. The survey lumps all financial transactions together with home renovations and purchase and sale of real estate into a single item called “money flows”. A negative amount could be taken as an indication that the household took on more debt, and if the households did not buy a home, then possibly this debt was backed by home equity. The value of the family residence is also recorded in the survey. One could compare the spending of such households with that of other households. However, this approach will probably not be successful since “money flows” can represent so many situations other than cashing out of home equity. We conclude that analysis using SHS micro data, the best source of information on household finances in Canada, is not worthwhile without additional data on borrowing against home equity.

This paper has reviewed studies of wealth effects and found that the estimates of the effect of stock market and housing wealth on consumer expenditures vary widely. This state of knowledge is unsatisfactory. Further effort to compare studies and find the reasons behind the different findings may be useful, but the task is far from easy. Ideally, one would want to compare the theoretical models used, and estimate all models on all data sets to the extent possible. A collaborative effort might bring about some convergence and become a landmark in applied economic research.

## 7 Conclusion

In this paper we examine the effect of changes in house prices on consumer expenditures through borrowing against home equity and in total, through the wealth effect. While we learned a good deal about these phenomena, we were not able to provide definitive measures of their size and significance due to a lack of data and inconclusive econometric work to date. More specifically, we found as follows:

- Borrowing against home equity is more common than it used to be, both through refinancing of mortgages with a cash-out and through home equity loans and lines of credit. No precise, comprehensive data on this type of borrowing are available in Canada.
- Two estimates of borrowing against home equity have been produced in Canada. They do not agree, in particular regarding home equity lines of credit, and we suggest that the higher estimate in particular is not suitable for estimating impact on the economy. Both estimates measure gross new borrowing and ignore repayments and debt service costs. We argue that a net measure would be more appropriate for gauging the effect of borrowing against home equity on consumption, or, failing this, the first difference of gross new borrowing.
- Survey data for Canada and the US suggest that about half of newly borrowed funds are used for consumer expenditures and residential construction. The other half goes towards debt consolidation and financial investments with a very limited effect on economic activity. If the allocation of funds is stable over time – and US data suggests it recently has been – then the impact of changes in borrowing against home equity on the level of economic activity is about one half of the amount borrowed. In the U.S. in 2002, it may have boosted GDP by about 1 per cent.
- The level of borrowing against home equity is influenced not only by house prices, but also by interest rates, transaction costs and availability of this type of credit. Major changes have occurred in the cost and availability of credit backed by home equity in the past few decades in both Canada and the US.
- House prices affect consumption not just through borrowing against home equity, but in a variety of ways that would be difficult to measure directly. There is an overall wealth effect of house prices on consumption, which has been examined in a number of recent studies in Canada and OECD countries. The thrust of this literature is that a housing wealth effect exists and has become stronger in the past decade or two. Most studies find that the housing has a stronger wealth effect on consumption than the stock market. However, the studies are far from agreed on the size of this effect, and on whether it is transitory or lasting.
- House prices in Canada have increased in recent years, but much less so than in the US. There appears to be a potentially unsustainable, speculative house price bubble in the US that may have deleterious effects on the US economy if it suddenly bursts. There is no similar basis for such a concern in Canada.

- It is clear that increasing house prices have helped sustain consumer expenditures in Canada in the past two years to some non-trivial extent. Given the information available and the state of economic analysis, this paper does not provide an estimate of the size of this effect.

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## Appendix: Statement of Work

The main objectives of this research project are to investigate the different sources of data on refinancing in Canada and to draw up a proposal which would analyse and quantify the relationship that exists between house prices, refinancing activity and consumer spending in Canada

### Context

During the 2001 downturn, household spending remained unexpectedly strong in Canada, despite overall declining household wealth due to falling equity prices. Current literature suggests that offsetting the stock market underperformance is the strong recent growth in house prices.

The Economics Department of CIBC World Markets estimated that housing equity contributed \$15 billion to the purchasing power of the Canadian consumer between January 2000 and December 2002<sup>22</sup>. This estimate has two components:

- \$5.3 billion through increases in the principal from mortgage refinancing activity.
- An \$11 billion increase in home equity loans during these three years.

CIBC-WM staff note that \$15 billion is equivalent to 2.2% of disposable income, and that, if Canadian consumers behave like their US counterparts, the extra cash from borrowing against home equity was used for increased spending amounting to a quarter of recent retail sales growth.

The borrowing activity reported by CIBC-WM represents direct, tangible activity by consumers related to home equity values. Commonly people renew their mortgages without increases in principal, since the mortgage is used strictly to finance the family home, and paying off the mortgage is a sensible economic priority for most Canadian households. When an existing mortgage is renewed with an increase in the principal, the home owner has some other purpose in mind. This may be renovating or expanding the home, refinancing other debts, or consumer spending on durables including cars, non-durables and services. Home equity loans are lines of credit backed by home equity. This form of bank loan has been extremely popular recently, with a year-over-year increase of 25 % in late 2002, while the volume of direct personal loans was declining.

The contractor will conduct the study in one phase as follows:

- Prepare a critical review of existing papers on refinancing activity in the US and Canada. This requires the collection and summary of the current theoretical and empirical understanding of the relationship between housing wealth, refinancing activity and consumer behaviour.
- Investigate the availability of data from financial institutions and other sources on residential mortgages and other loans that would make it possible to measure more precisely the extent

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<sup>22</sup> See: Benjamin Tal: "Canada: Banking on the House", in *The Big D*, Monthly Indicators, Economics and Strategy, CIBC World Markets Research, December 2002 (website).

of borrowing against increased home equity over a number of years, and to obtain more information about the households who so borrow.

- Investigate how this information might be combined with publicly available micro data about consumer expenditures with a view to estimating how the “liquefied” home equity is used.
- Draw up a proposal for research on the matter of refinancing as outlined below:

OBJECTIVES:

This research project aims to demonstrate that housing has a role to play as an economic stimulus when monetary policy is accommodative and to increase the awareness of the importance of the housing sector in the macro economy.

The study will analyse and quantify the relationship that exists between house prices, refinancing activity and consumers spending in Canada and verify if increasing home prices and the recent wave of mortgage refinancing have had an impact on Canadian consumer expenditures and countered a potential economic downturn.

WORK DETAIL:

The consultant shall:

1. describe the performance of the housing market in Canada in the last 20 years.
  2. generate data on refinancing activity in Canada and compile relevant macroeconomic data.
  3. describe the refinancing activity in Canada (who chooses to refinance their home, socio economic characteristics of refinance borrowers, what do they use the money for, etc.....)
  4. describe the driving forces behind the refinancing boom recorded in the last years in Canada.
  5. measure and outline the extent of the refinancing activity in Canada.
  6. quantify the relationship that exists between the housing market performance and the refinancing activity in Canada (through use of charts, tables and other graphics...)
  7. explain how house prices and refinancing activity affect household wealth and spending and quantify this relationship using charts, tables and/or other graphic.
  8. determine whether or not the housing market performance have had any effect in Canada during the last economic downturn.
  9. evaluate the contribution of the housing market to the Canadian economic performance.
  10. analyze the long term impacts of refinancing activity on households debt.
  11. describe both positive and negative consequences of the refinancing activity in Canada.
- If sufficient data can be obtained, this proposal would be oriented to the use of those data. If not, the proposal would lay out the linkages to be explored, the data available, and additional data required.
  - Indicate how mortgage refinancing activity and other links between home equity and consumer behaviour may be monitored on an ongoing basis.

The major banks are in a good position to analyse who has been borrowing against the value of their home, and to report on changes in interest rates on loans, the average term of new loans etc. using their own client records. They also have preferred access to data from credit bureaus. An investigation of the data from these sources shall be done.

Lenders do not record the consumption behaviour of borrowers. Yet the impact of mortgage refinancing and home equity loans depends on the uses to which these funds are put. Thus it will be necessary to link information on borrowing behaviour to data on consumer expenditures. In Canada, the richest source for information on consumer spending is the Survey of Household Spending. This survey offers some information on borrowing, but determining how cash-outs of home equity are used will require use of statistical methods on selected households if it is at all possible.



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