

***Discussion Paper on Federal Government Regulation
of Residential Mortgage Lending in Canada***

Prepared by: Will Dunning Inc

February 2023



Introduction

This discussion paper starts from the point of view that federal mortgage regulations need to give consideration to three objectives. Those objectives are in conflict to some degree. At its most basic, the goal of policies should be to find the correct balance between the three objectives. The objectives are:

- To assist Canadian consumers in making decisions that they see as in their best interest, and at the same time help them manage their personal risks by giving consideration to the reasonableness of their decisions in their own circumstances.
- Manage risks to the broad economy and to the financial system.
- Support the health of the economy in both the short-term and the long-term (and recognizing that there is sometimes conflict between short-term and long-term economic health).

The bottom-line conclusion within this document is that the federal government's mortgage regulations have failed to reasonably balance those objectives. In particular:

- Canadian have been unduly prevented from making housing choices that they see as in their best interests. Consequently, the regulations have made us collectively worse-off.
- The mortgage regulations have been based on an incorrect understanding of the risks. The most important risk posed by mortgage lending to the financial system is loss of ability-to-pay (especially job loss). The regulations have been focused on a risk that historically has been vastly less important (increased mortgage costs that result from interest rate increases at renewal or reset).
- The mortgage regulations, and their escalation over time, have increasingly had negative effects on the economy (which consequently adds risk to the financial system).

Relatedly, current interest rate policies of the Bank of Canada are creating a risk that an economic recession will develop during the course of this year. Because of the impacts that this may have on the ability of Canadians to meet their mortgage obligations, the Bank of Canada policies are at present the greatest risk to the Canadian financial system.

Reduced housing activity (sales of existing homes, new construction, and renovation) may result in job losses exceeding one-quarter million by late 2024. Spin-offs from those losses would cause additional reductions for employment.

The OSFI Consultation

The Office of the Superintendent of Financial Institutions has proposed amendments to its main mortgage regulations ("Guideline B-20"). In a nutshell, the opinion developed herein is that:

- The proposed amendments would be another round in the (futile and damaging) game of "whack-a-mole" that has escalated during the past decade.
- The existing regulations are addressing the wrong risk and are irrelevant with respect to the main risk (loss of ability-to-pay). The proposed amendments will not correct that fundamental error.



- It is widely recognized that Canada has not produced enough new housing to meet the needs of our growing population, and that this has contributed to the extraordinary growth of housing costs during the past decade. Rather than addressing that fundamental issue of the supply-demand imbalance, the main federal response has been to tighten mortgage regulations. These have suppressed housing transactions (sales of existing and new homes). These policies have been counter-productive, as they have further suppressed supplies of new housing and thereby worsened the supply-demand imbalance – the mortgage regulations have contributed to the housing market pressures across Canada.
- This OSFI proposal to further escalate the regulations will not fix the existing issues. It will, once again, worsen them.
- Because of the on-going failure of these policies, there will in all likelihood be a perceived need for another policy escalation in the not-distant future (we can expect that there will be future rounds of whack-a-mole).
- Federal mortgage regulations have, in addition to making Canadians worse-off in terms of housing situations and costs, impaired the Canadian economy.
- There is a “positive risk” that affects mortgages – that the borrowers’ incomes will rise, giving them some capacity to deal with future increases in mortgage costs. From the outset, these mortgage regulations have focused on one negative risk, that at the time of a future renewal costs will increase. But, the positive risk of income growth has been ignored.
- This is the fundamental error that has caused the mortgage stress tests to unduly prevent hundreds of thousands of Canadians from making reasonable housing choices. Policies should be adjusted to take account of income growth that will occur by the time of renewal. Neither OSFI nor the other actors within the federal system have commented publicly on this issue, let alone discussed possible solutions. This discussion paper proposes a sliding scale of interest rate factors that considers income growth (that discussion starts on page 19 and the proposal is in the table on page 20).
- The OSFI consultation ought to conclude that an assumption that interest rates might increase by 2 points was reasonable at a time when rates were at historic lows, but not at this time when interest rates are by far at the highest level in over a decade.

Summary

During the past 14 years, and especially since 2012, the federal government has played whack-a-mole in the housing market. Increasingly stringent mortgage regulations have discouraged home buying transactions. But, they have not improved the fundamental reality that the total housing supply in Canada has not kept up with the housing requirements that result from our growing population.

To the extent that home buying transactions are reduced by the federal mortgage policies, the ultimate consequence isn’t to reduce the pressures, but instead to transfer the pressures within the housing system: when fewer people can own homes, demand is shifted to the rental housing sector. Major consequences of this shift are, firstly, that rents for available dwellings are currently rising extremely rapidly; secondly, and due largely to the heat in the rental sector, fewer sales are being made to owner-occupants and more purchases are being made by investors. In response to these conditions, there have



been calls for policies to inhibit investment buying. But this, once again, would not fix the fundamental problem of inadequate supply - this would be just a different, and ineffectual, version of the whack-a-mole game.

An important, but mostly unacknowledged, consequence of the game is that new housing supply has been impaired, because fewer people can buy new homes and therefore not enough new housing is constructed. So, rather than fix the fundamental problem of insufficient supply, the mortgage policies have made conditions worse.

It is time for the federal government to recognize that its escalating mortgage policies (which, by the way, have been enacted under governments led by two different political parties) have made Canadians worse-off.

Messages in this report include:

- Mortgage stress testing does analysis in the present for an event (mortgage renewal) that will occur in the future. The design of the stress tests does not take account of three time-related considerations that will influence the impacts of those future renewals:
 - (1) income growth will increase ability to pay, (2) repayment of principal will mean that the future increase in payments will be less than is assumed in the calculations, and (3) the initial amount of equity and its growth through principal repayment mean that mortgage borrowers will increasingly have access to solutions in the event of an unaffordable rise in mortgage costs, including extension of amortization periods and, if necessary, selling the property.
 - The implication of these considerations is that the stress testing fails to adequately incorporate the effects of the passage of time.
 - In particular, the qualifying rate (the increment above the actual contract rate) should be adjusted depending on the term-to-renewal of the mortgage. The Appendix to this report concludes that for a fixed rate mortgage that will be renewed in five years, the impact of a 2-point rise in the interest rate can be adequately approximated by applying a 0.75-point increment over the initial contract rate. (The calculations take into account likely income growth and scheduled principal repayment.) For fixed rates with terms shorter than 5 years, the increments could be larger by a quarter point, i.e. 1.00 for 4 years terms, 1.25 for 3 years, 1.50 for 2 years, and 1.75 for 1 year. For variable rate mortgages, a 2-point increment might still be appropriate.
 - Some Canadian industry associations have made similar arguments: the responsible federal officials must be aware of them. To date, the federal government has not publicly acknowledged the existence of these arguments and it has not offered any rebuttal or solutions.
 - In addition, the qualifying rate increment should be sensitive to risks related to initial equity ratios. At some point, there is enough equity that testing can safely be done at the actual contract rate. There should be a sliding scale of interest rate increments that are related to equity ratios.
- The key assumption used in the stress tests, that future interest rates could be 2 points higher, has not been adequately justified. In the not-too-distant past, when interest rates were at



historic lows, that assumption was reasonable for the purpose of risk analysis. But now, when rates are at the highest level in over a decade, and concerns are growing about economic impacts that may develop during the coming year, it is arguable that a further 2-point increment should not be used - unless there is an explicit analysis that concludes such a rise has a non-trivial probability of actually occurring.

- Therefore, periodic policy reviews (by OSFI, CMHC, and the federal Finance Department) should include explicit justifications of the interest rates that are to be used in the stress tests.
- As an extension of this discussion: if a 2-point increment is not appropriate at this time, then the conclusion noted above – that an increment of 0.75 point can be used to simulate a 2-point increase in 5 years – should be adjusted based on what is now a reasonable risk-analysis assumption about future interest rates. We might all agree that in the current situation, stress testing should be done at the actual contracted interest rates.
- OSFI has sometimes defended the current design of its stress test with an argument that it reduces the risk associated with job loss. To the contrary, it takes very little thought to conclude that calculating the impact of higher interest rates tells us nothing about the consequences of a severe loss of income. The OSFI argument also fails to consider the probability of job loss or magnitudes of income losses (shouldn't probability, and the probabilities associated with differing magnitudes, be prominently considered in a risk analysis?).
- Furthermore, in those statements, OSFI has implicitly argued that consideration needs to be given to prospects for income, but in its stress test policy it has been unwilling to incorporate the much-more-likely probability that incomes will rise during a multi-year period.
- 30-year amortization periods have been available in the past (and are still available for uninsured mortgages). This has improved access to ownership, has been well-accepted by consumers, and has not caused undue problems. 30-year amortization should once again be allowed for insured mortgages
- The stress testing regime that existed from early 2010 to late 2016 is a model that could be resurrected (for insured mortgages with variable rate mortgages and fixed rate mortgages with terms less than 5 years, testing was at the “posted rate” for 5-year fixed rate mortgages; for fixed rate mortgages with terms of 5 or more years, testing was at the contracted rates).
- Stress testing should not be required for mortgages that, at renewal, are switched between lenders. Movement of a mortgage between lenders does not create any new risk, it just changes the location of the risk. In this current environment, the very sharp increases in interest rates has created an elevated risk that some borrowers could become trapped and exploited by their lenders. As is discussed in the Appendix, in the section “Potential outcomes for renewals occurring now”, this risk might be present for small numbers of borrowers renewing out of 5-year terms, but for borrowers renewing out of an initial term shorter than 5 years, there is much greater risk of getting trapped.
- Similarly, mortgages that are switched between properties should not be stress tested, provided that there is no increase in the principal.
- Rental income received by home owners (for basement suites, etc.) can be included in mortgage qualification calculations, by adding part or all of it to income (usually, one-half of the rent can be included). As an alternative, allowing part of the rent to be deducted from calculated housing



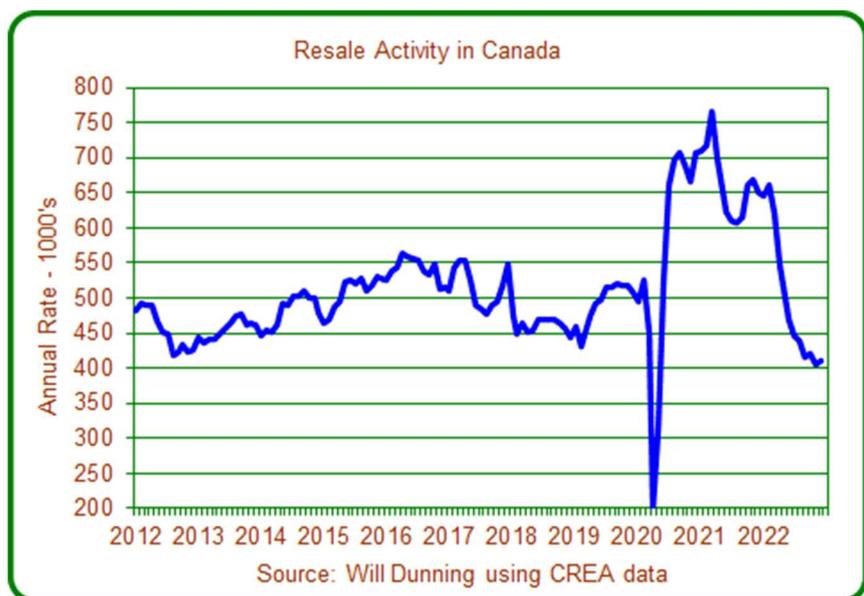
costs would do a better job of improving access to home ownership. This would also provide incentive that would expand the availability of rental housing.

- In this period of high interest rates and a greater sense of risk, some alternative lenders are losing access to funding. Therefore, there is a rising risk that some home owners will be unable to renew at reasonable, competitive market interest rates. This would be highly disruptive not just to those home owners, but also to the housing market and the broader economy. There is a need, firstly, for much better information on the alternative lending sector. Secondly, to alleviate risks to the broader economy, there should be more opportunities for existing mortgages to be transferred to insured pools.
- Data on mortgage arrears (from the Canadian Bankers Association) has implications for federal mortgage policies. As is discussed in a section below, in my opinion, that data bolsters an argument that the stress tests are adding to economic risks in Canada. I have commented in this report and elsewhere that a major conceptual flaw within the stress tests is that they fail to consider income growth that will occur by the time of mortgage renewal. This discussion about mortgage arrears points to a second major flaw: the most substantial risk to the mortgage market is loss of ability-to-pay (chiefly due to job loss, although also due to other events like family breakdown). The data on arrears indicates that the mortgage market risk associated with changes in interest rates is negligible, so long as ability-to-pay is sustained. The stress tests are testing the wrong thing, unjustifiably limiting consumer choices, and creating economic risks.

Housing Market Background

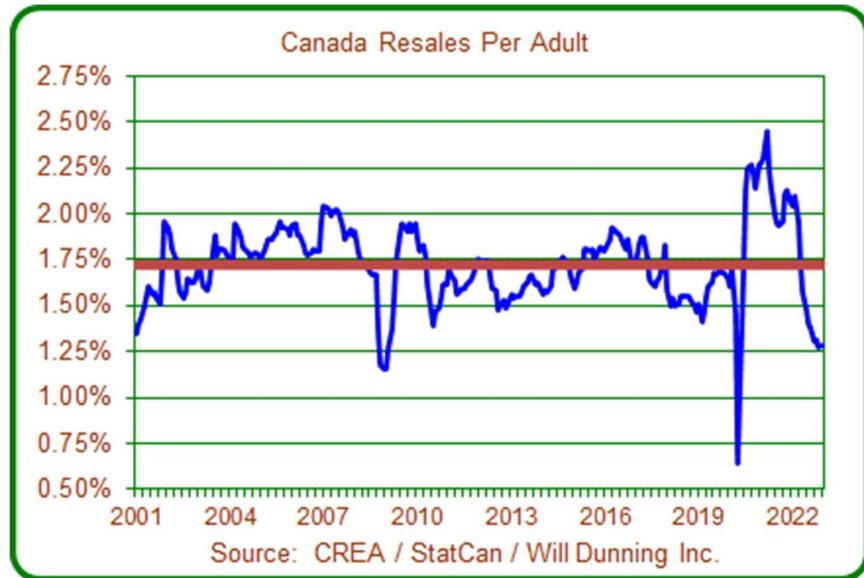
Housing market activity varies over time, often in response to economic conditions (especially movements in interest rates, as well as changes in the employment situation). Other factors can cause shifts in housing activity, such as the onset of Covid-19. It is argued in this report that changes in government policies have imposed depressive effects on housing activity during the past decade, which has impeded the broader economy.

Most recently, sharp rises in interest rates have caused a substantial downturn in resale market activity. The first chart illustrates that the annualized rate of sales has fallen to one of the lowest rates of the past decade (just 412,000 in the fourth quarter of 2022).





A further analysis starts with the expectation that home sales will trend upwards over time, because the population is growing (therefore, there are more potential buyers) and because on-going housing construction is raising the number of existing dwellings that could potentially be sold. Therefore, this chart calculates a sales rate - sales per adult in Canada. The flat, thick line is the average rate for the entire period shown.



During the past few months, the sales rate has been one of the lowest seen during this period of more than 20 years (during the fourth quarter of 2022, the population-adjusted sales rate was 25% below the long-term average).

Variations in this data can be understood as largely the consequence of economic conditions, and especially interest rates. But, there are additional variations that can be attributed to changes in mortgage regulations. In this data, it appears that there are three periods when changes in mortgage regulations were associated with sales rates considerably different than should have been expected:

- During 2006 and 2007, activity should have been close to normal, based on economic conditions, but sales were bolstered by the availability of mortgages with extended amortization periods (up to 40 years) and 0% down payments for insured mortgages.
- Subsequently, lending conditions were tightened, with the elimination of 0% down payments and maximum amortization periods were shortened, in three steps. The first two steps (to 35 years at mid-2008 and then 30 years in early 2011) did not have obvious effects on the sales rates. But, the move to a 25-year maximum (at mid-2012) did have a noticeable effect. These findings are discussed in more detail later, in the section on 30-year amortization periods.
- Activity also fell sharply in early 2018. Increased interest rates were partly responsible for this, but more importantly, the introduction of the OSFI stress test resulted in a sharp drop in the sales rate.
- There was also a drop in the sales rate early in 2017, following the introduction of new stress testing requirements for insured mortgages, but that effect was short-lived: potential buyers realized that they could avoid mortgage insurance (and thereby the required testing) by increasing their down payments to 20% and many of them found ways to acquire the down payments. When the OSFI test was added in 2018, that solution was no longer available.

Sales activity dropped by an exceptional amount at the onset of Covid-19, but then rebounded very strongly, and sales rates were exceptionally strong until early 2022. This was due to three powerful factors, which reinforced each other:



- Interest rates were at exceptionally low levels.
- A lot of us decided to change our housing situations.
- There was catch-up for sales that should have happened earlier but didn't (because of the OSFI stress test).

Looking at the combined period from the start of 2018:

- Up to March 2022, the average sales rate was 3% above the average for 2001 to 2017. So, sales for the total period since the start of 2018 were reasonably close to the long-term average.
- But now, adding in the collapse of sales that started last spring, the average for 2018 to the present is almost exactly equal to the long-term average.
- With interest rates now very much higher than previously, and expected to remain elevated for some time, we should expect that total sales will remain quite weak, and total sales for the period 2018 to the present will increasingly move into deficit compared to the historic average.

Furthermore, resale activity from the start of 2018 until early 2022 should have been above average, given the existence of highly favourable economic conditions (low interest rates and a high level for employment). Therefore, actual activity that was close to average should be seen as an under-performance. This is to some degree the result of the tightening of mortgage regulations. Additionally, a later discussion (the comparison of Canada and the US) implies that the downturn seen this year has been worse than it should have been, reflecting that mortgage regulations, especially the design of the stress tests, are adding to the impacts of higher interest rates.

An additional and important consideration is trends in new housing activity. In Canada, we have data on housing starts. But, that data can show us only the delayed consequences of sales activity (since it takes time for pre-construction sales to result in construction activity). Unfortunately, we don't have data on new home sales for Canada. Data is available for the Greater Toronto Area, and it shows that new home sales have slowed very



sharply: during the second half of 2022, sales were at annualized rate of just 13,400, which is far below the levels that are needed to accommodate population growth (in excess of 50,000 per year. This will ultimately result in reduced housing starts during 2023 (for low-rise dwellings) and more likely in 2024 for apartments (which have longer pre-construction periods).

The rapid house price growth that has been seen during the past decade sent a signal that more new supply is needed (and that it would be profitable for builders to provide more supply). There has been a



supply response (as is illustrated in the chart above), but that response occurred too slowly, and has been weaker than is needed. The consequence has been that during the past decade, the housing supply has not kept up with the requirements that result from our growing population. And now, as the consequence of high interest rates, layered onto elevated prices, housing starts are likely to slow considerably during the next two years - total housing supplies will fall even farther behind the requirements.

Several researchers (including this analyst) have created estimates of the magnitudes of the existing housing deficits, in total for Canada and for provinces and cities. Those estimates vary, but there is consistency in concluding that we need to see much more housing construction.

With a pending downturn in construction, the housing supply crisis in Canada is highly likely to worsen during the coming half-decade.

This analyst has listed factors that have contributed to our housing shortages¹. Tightening of mortgage regulations is one of these major factors:

- Naturally-occurring physical constraints.
- Land-use plans that limit uses of land that has development potential.
- Delayed approvals.
- Delayed installation of infrastructure.
- Costs imposed by governments on new construction (from a large list of fees and charges), which have increased very rapidly over time. Builders have to delay, so that attainable prices can catch-up to their increased costs.
- Decisions by land owners about whether to take actions – to sell or develop their lands. (This issue gets very little attention, but it ought to be investigated.)
- Mortgage regulations that suppress home buying: these reduce sales of new housing, which impairs future supplies.
- Labour supply: commentary from several communities suggest that housing construction is being constrained by shortages of skilled trades. A related concern is that in places where large increases in construction are needed, the local cost of living makes it difficult to attract labour.
- Looking forward, given the need to increase housing starts by a large amount, supplies of building materials and equipment could emerge as challenges.

Economic Impacts of High Interest Rates and Reduced Housing Activity

This section discusses three ways in which higher interest rates and reduced housing activity will increasingly weigh on the Canadian economy.

Housing activity creates a lot of jobs in Canada – not just in the front lines, but also within industries that provide supportive goods and services.

¹ This list can be found on pages 24 and 25 of this report, which discusses housing shortages across Canada: https://www.wdunning.com/_files/ugd/ddda71_58e2ddb75914a1188a6377e71c696c1.pdf



At various times, the Altus Group has created (for the Canadian Real Estate Association) estimates of the numbers of jobs that result from resale market activity. Those estimates have shown impacts in the area of one-third of a job (“person year”) for each dwelling unit sold. On that basis, the impact of typical year resale activity is in the area of 200,000 jobs. With sales now about one-quarter lower than usual, the impact is likely to be about 50,000 fewer jobs.

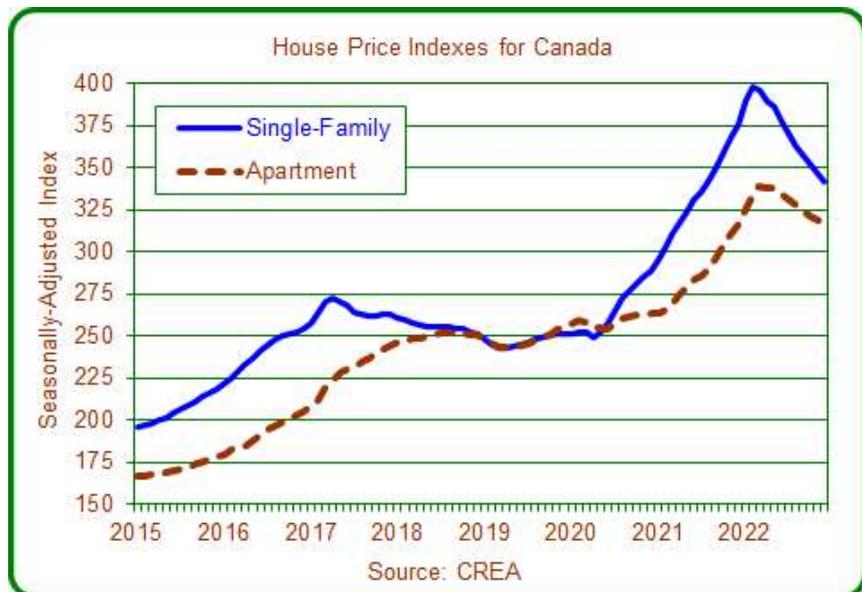
This analyst has created estimates (for the Canadian Home Builders Association) of the numbers of jobs generated by residential construction (including new dwellings, renovations, and repairs). For 2021, the total impact (including direct jobs and jobs in supporting industries) was in the area of 1.4 million. If housing starts also fall by one-quarter, that would eventually reduce employment by as much as 150,000. We should expect that there will additional losses related to reduced renovation activity, with a similar magnitude.

The developing slowdown in the resale sector will soon begin to affect employment in Canada. The effects within the construction sector will be slower to materialize (because of the lengthy time lags that are involved). Related job losses will slowly accrue during 2023 and subsequent years.

The second way that higher mortgage costs will affect the economy is that Canadians will have to reduce their discretionary spending. (For some of us, there will be increasing difficulty in meeting basic needs.) This reduced spending will affect employment in many sectors of the economy.

Thirdly, reductions in home values will result in lower consumer confidence, which may also result in reduced spending and associated job losses.

- To this point, house prices have more-or-less reversed the outsized increases that occurred during late 2021 and early 2022. Because those gains were quite recent, that reversal probably won't have very much of an economic impact.



- But, if there are further drops in housing values, and that should not be ruled out, there may be incremental impacts on confidence, and the “negative wealth effect” could result in some job losses.
- Obviously, there is great uncertainty about the future for housing values.
- But, there is also uncertainty about how much prices have fallen. Much of that discussion relies on CREA’s House Price Indexes. Some informed observers believe that the indexes aren’t yet

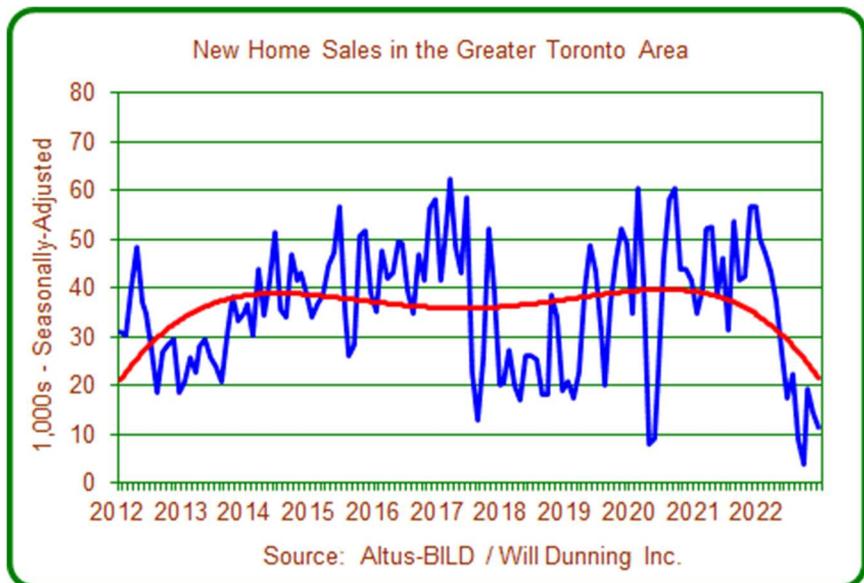


fully measuring actual price declines. That uncertainty is adding to the challenge of anticipating economic effects.

Part of the current story about housing market trends is that a lot of potential buyers and sellers have withdrawn from the market – there has been a large drop in sales, but also in the numbers of homes that are available to be purchased. So, the market is roughly “in balance”. That might change, if economic pressures (unaffordable rises in mortgage costs and/or job losses that impair ability-to-pay) force more property owners to need to sell. That could result in more downward pressure on prices, which could increasingly cause a negative wealth effect that results in job losses. That in turn would weigh even more on sales, adding to downward pressures for pricing and for the broader economy.

This analysis is not drawing any specific conclusions on how the economy will change during the coming year, but is noting that the risks are weighted towards an economic downturn.

Residential construction is a powerful generator of jobs (directly in the construction process and in industries that provide goods and services to the process). Unless there is soon a bounce-back, the sharp drop in sales in the Toronto area can be expected to result in a loss of about 50,000 jobs once construction activity fully adjusts to the lower sales. About one-half of the employment losses might accrue by the end of this year, and most of the remainder by the end of 2024.

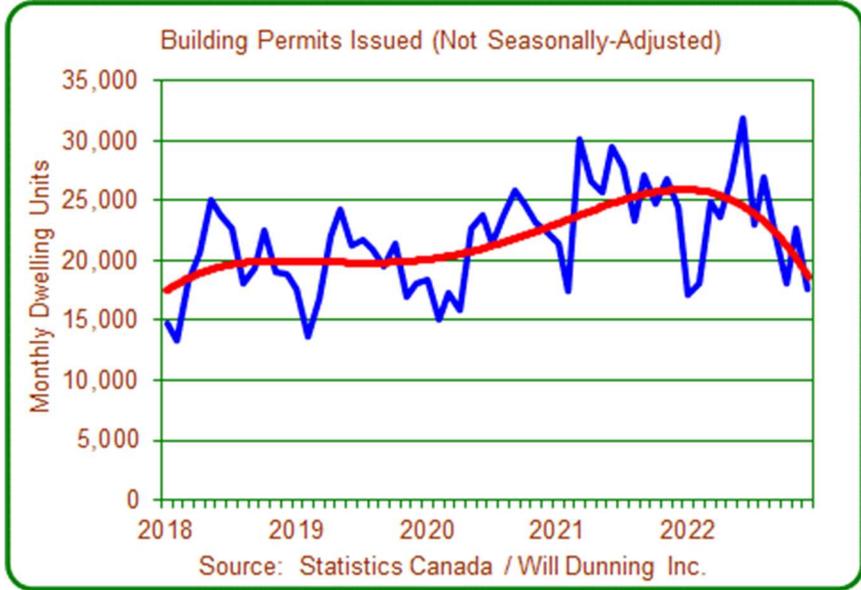


This is the impact of current elevated interest rates in just one industrial sector, in one (albeit the largest) community in Canada. There will be further job losses elsewhere in Canada, and in other sectors. Plus, there will be job losses in the renovation sector.

Unfortunately, we don't have data on new home sales for all of Canada. But, data from two other sources hints that a downturn is now developing.



Data on issuance of building permits for new housing construction (from Statistics Canada’s Table 34-10-0066-01) is a bit difficult to interpret, because it is lumpy (it shows a lot of variation from month-to-month), is not seasonally-adjusted, and the data series is quite short (it starts in 2018). For the last four months of available data (up to December), the number of dwelling units is 22% less than a year earlier.²



Secondly, on January 31, the Canadian Home Builders Association reported that in a survey of its membership, the respondents expect starts in 2023 to be 28.5% lower than in 2022.³

The volume of housing under construction in Canada is currently exceptionally high (which is resulting in a high level of employment in construction and related industries, as well as shortages of labour in the construction industry). Looking forward, the sharp downturn of new home sales that is now developing can be expected to result in a gradual slowdown in housing starts during the coming months. This in turn will lead



to a gradual reduction in the under construction inventory, likely starting during the second quarter of the year. During the second half of the year, it will increasingly become apparent that employment related to construction is falling, and the reductions will continue into 2024.

Current high interest rates have not yet materially affected employment in Canada, but it is highly that they will cause escalating job losses during the coming two years.

² There is an earlier version of this paper in (limited) circulation that has data only up to November.

³ The CHBA report on its survey can be found here: <https://www.chba.ca/hmi>



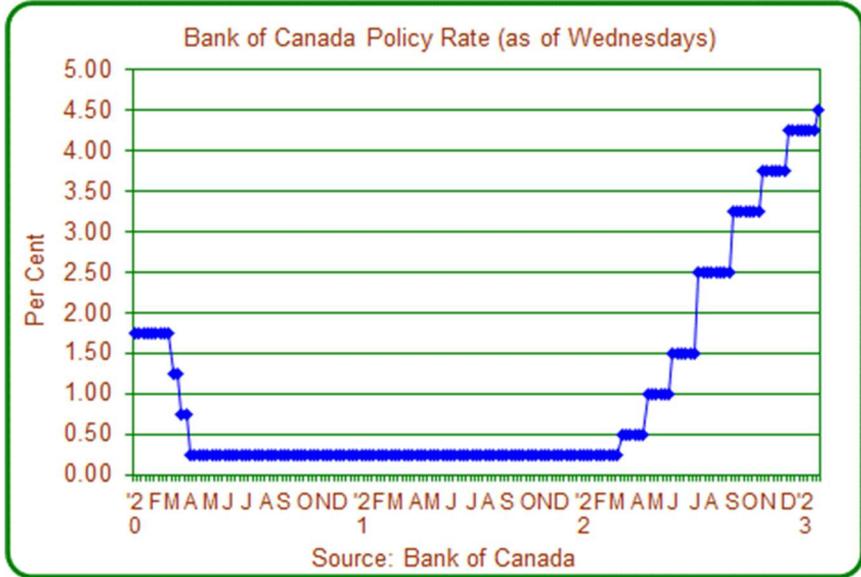
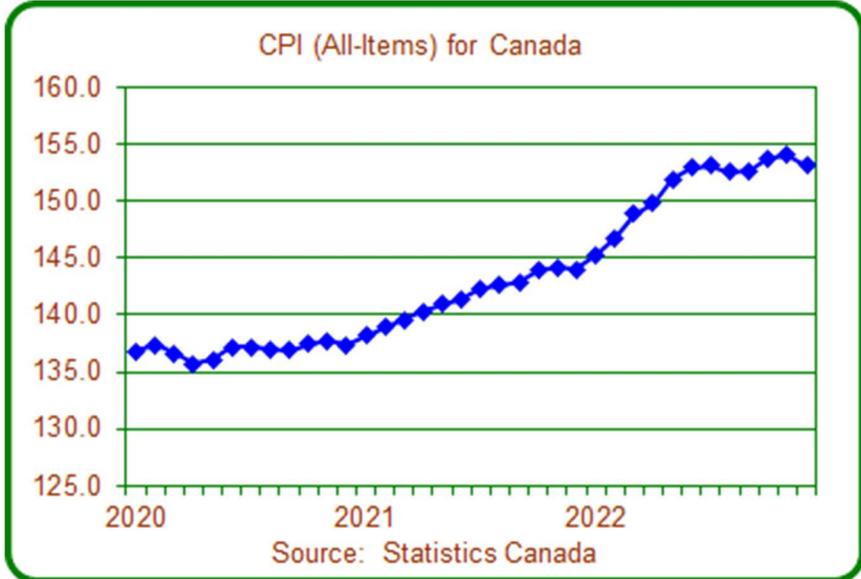
Excessive Inflation Has Ended and Interest Rates Are Too High

Canada experienced a brief period of excessive inflation, beginning at the start of 2022. But, that period lasted for just six months, ending at mid-2022. Year-over-year inflation remains high (6.3% as of December), but this masks what is happening now: during the past six months, the annualized all-items inflation rate averaged just 0.3%. This sharp slowdown occurred despite the reality that economic indicators remained robust during that period: the slowdown in inflation is not the result of high interest rates. The deceleration occurred because the excessive inflation was largely due to supply-side issues and those issues have lessened. High interest rates will not fix supply-side issues – it will make them worse, by inhibiting investment.

But, there is a coming economic impact from the interest rate rises that have happened during the past year, which will develop during the coming year, and likely well into 2024. That economic pain will be unnecessary. It is time for the Bank of Canada to declare victory and reduce its policy rate to the neutral level, which it estimates to be 2.5%.

Current federal government policies (in terms of interest rate decisions by the Bank of Canada, reductions in spending by the federal government, and the application of the mortgage stress tests on top of high interest rates) are all pointing in the direction of economic contraction. It is possible that during the second half of 2023, there will be a 180-degree turn in official opinions, towards discussion of government actions that will support economic recovery. Review of mortgage regulations (and the urgent need to reduce interest rates) should certainly be part of those discussions.

Those discussions should be happening now, not when an economic crisis has started.





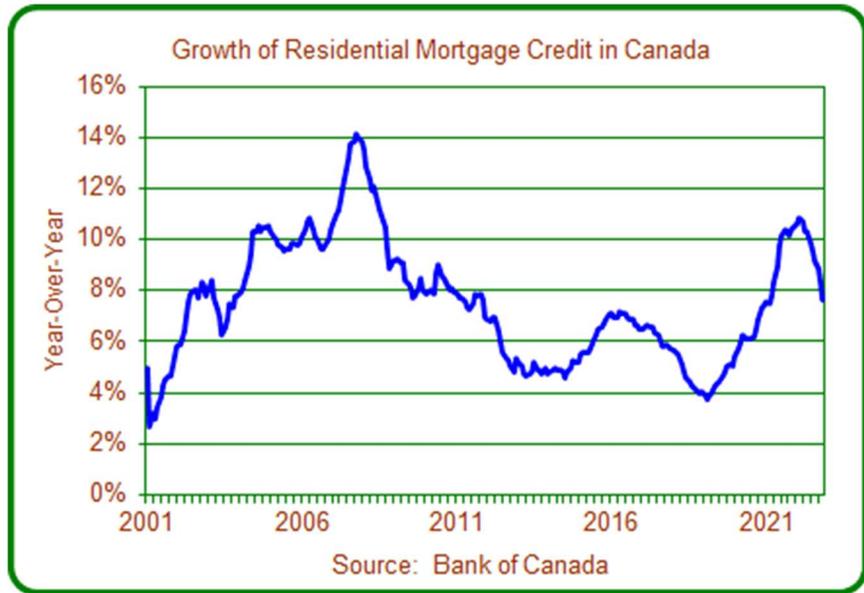
Mortgage Market Trends

During the past decade, mortgage credit in Canada has grown at an average rate of 6.4% per year, which is less rapid than in the prior decade (9.0% per year). This slowing was partly the result of the suppression of buying activity that was caused by tightening of mortgage regulations.

But, new housing supply has also been impaired, with the consequence that the total housing supply is less than is required by our growing

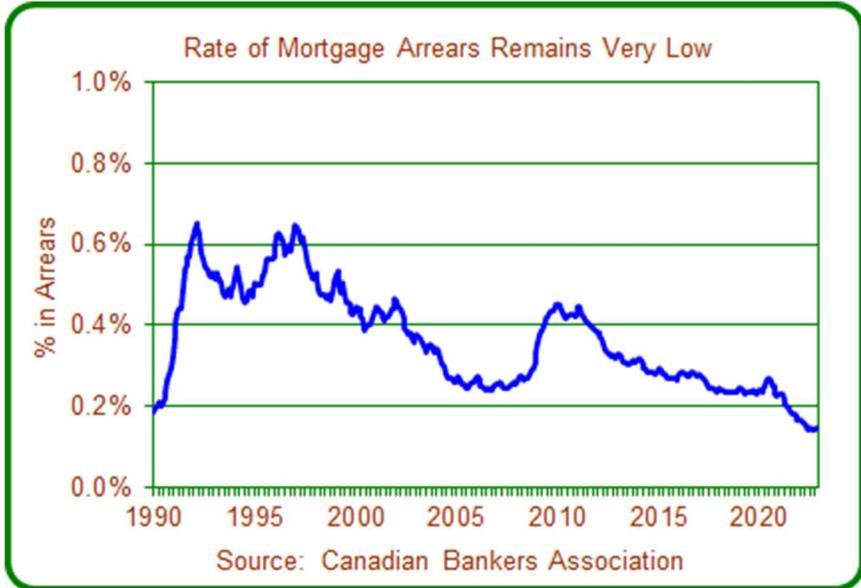
population. Increased competition among buyers has caused housing prices to grow very rapidly during the past decade. When home buying strengthened during the Covid period, the increased sales, layered onto higher prices, resulted in a resumption of very rapid growth of mortgage indebtedness.

As is shown in the chart above, the growth rate for mortgage credit is now slowing. It is still early in the adjustment of mortgage demand to higher interest rates. In the most recent data (for November) the year-over-year growth rate for mortgage credit is 7.6%; for the past three months, the annualized growth rate is slower, at 4.5%. The growth rate is likely to slow some more in the coming months, due to sharp drops in the dollar volume of resale activity (fewer sales, at lower prices). Even so, there are large amounts of housing under construction at present. As that housing is completed and finance is obtained by the new owners, there will be continuing large amounts of new mortgage finance, and this process will limit the slowdown for mortgage credit.



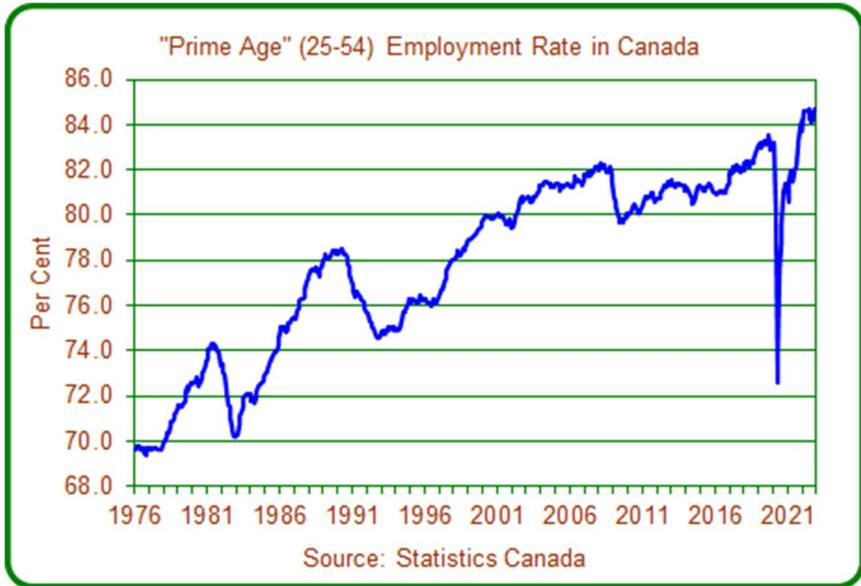


Mortgage arrears remain very low. Data from the Canadian Bankers Association shows that as of October, just 0.15% of mortgages were three or more months in arrears. In multiple reports, I have concluded that arrears rates are mainly influenced by changes in the employment situation, and changes in interest rates are much less consequential. This is discussed in more detail in a later section (“What can we learn from data on mortgage arrears?”).



The employment situation in Canada remains very healthy, although there is uncertainty about the outlook. It is possible that a year from now, the employment situation will be worse, with the consequence that the arrears rate will be considerably higher.

There are multiple statistics that can be used to portray the employment situation. One of those is the share of adults who have jobs, and especially for the “prime working age” of 25-54 years (which also happens to be the prime age for home buying). That ratio is now at a record level. This economic strength has provided great impetus for housing demand and the expansion of mortgage credit, and has supported reductions in the arrears rate.



It is not an accident that the arrears rate is at an all-time low when the employment rate is at an all-time high.

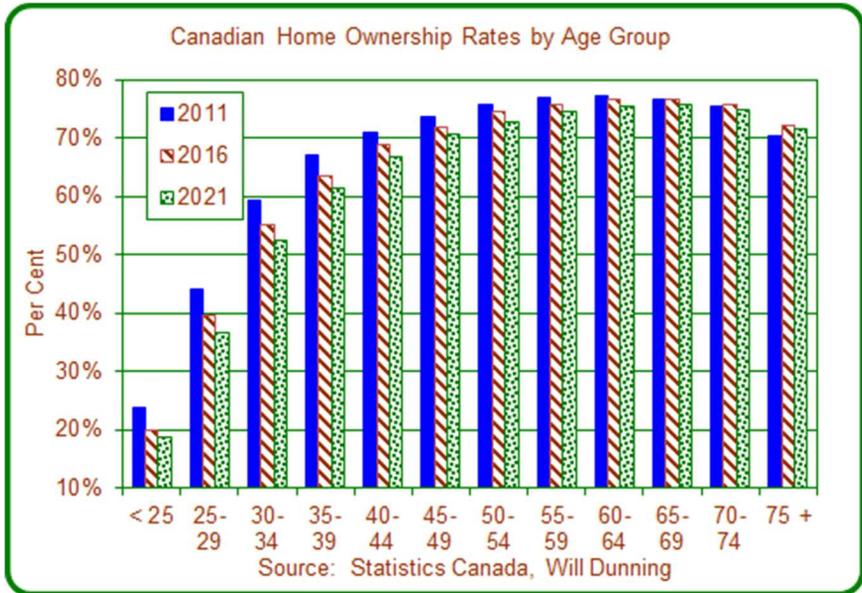
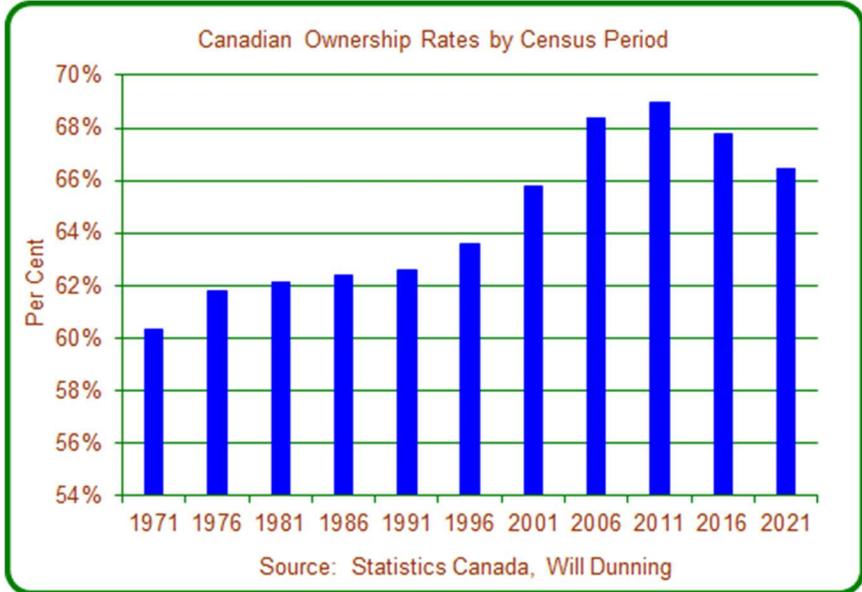


Mortgage Regulations

During the past 14 years (starting in July 2008) a series of mortgage regulations has made it increasingly difficult to qualify for mortgage financing and thereby reduced access to home ownership⁴.

The home ownership rate in Canada climbed rapidly during 1991 to 2011. However, the ownership rate peaked in 2011 and then fell in both 2016 and 2021. As is illustrated in the second chart, the drops in home ownership rates have been quite sharp for younger age groups.

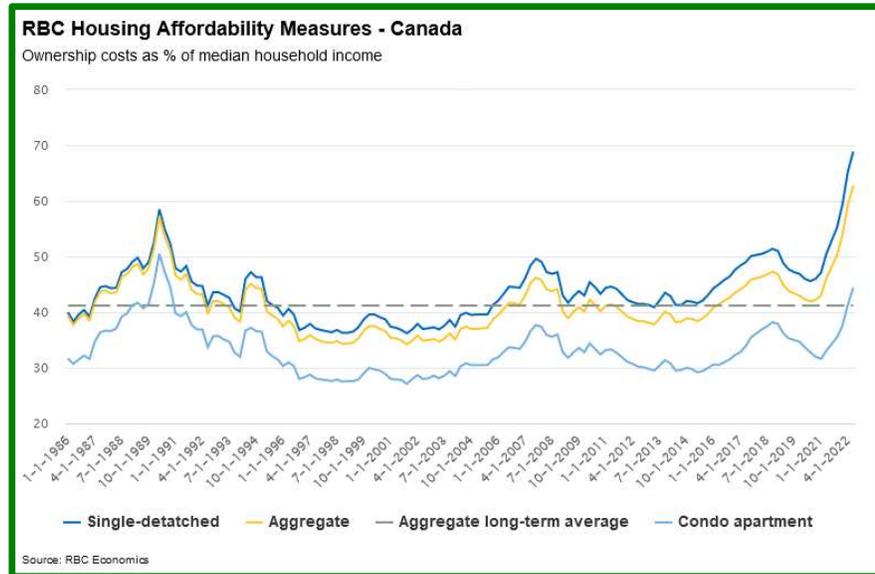
During 1991 to 2011, factors that contributed to the rising ownership share included increased educational attainment (which resulted in higher percentages of the population having higher incomes), falling interest rates, and increasing availability of lower-cost housing options for which ownership is more accessible (especially town homes and condominium apartments, as well as homes with basement apartments).



⁴ A good history of mortgage rule changes (initially compiled in early 2018, with updates up to mid-2021) is available here: <https://www.ratespy.com/history-of-mortgage-rule-changes-03255560>



It is tempting to think that the drop in the ownership rate since 2011 must be due to rapid growth in house prices. But, at the same time as prices were rising, interest rates were falling. Affordability indexes, such as the Royal Bank index⁵ (shown here), indicate that during the period of falling ownership rates (2011 to 2021) affordability was not very different than it had been during the earlier period of rising home ownership (1991 to 2011). It has only been during 2021 and 2022 that affordability has moved outside of its historic range.



In addition to the favourable affordability situation, the economic environment (notably, strong job creation and a sustained high level of employment) was a positive factor that should have provided continued support to home ownership during the past decade.

One significant change is that mortgage regulations were tightened multiple times, and it seems likely that the increased difficulty in obtaining mortgage financing contributed to the falling ownership rate.

The changes in mortgage regulations during the past 14 years have varied in the intensity of their impacts. Some of the changes have had negligible consequences, including:

- Elimination of 0% down payments and 40-year (both in 2008) and 35-year amortization periods (2011) for insured mortgages.
- 10% down payment requirement for the portion of the value over \$500,000 (early 2016).
- Starting in 2010, an early version of stress testing applied to insured mortgages that had variable rates or rates with terms shorter than 5 years. Testing was at the posted rate for 5-year fixed rate mortgages. During that period, fixed rate mortgages with terms of 5 or more years continued to be tested at the contracted interest rates. There is no indication in the market data that this policy change had a significant impact on sales. Moreover, this policy provided additional incentive for new buyers to use fixed rate financing with terms of 5 years or longer, which reduced risks to themselves and to financial institutions.

But, at least two of the changes to regulations have had major (negative) effects. These include:

- Reduction of the maximum amortization period for insured mortgages to 25 years from the prior 30 years, in the summer of 2012.

⁵ The most recent edition of the RBC index is dated December 19, and can be found here: <https://thoughtleadership.rbc.com/homebuyer-blues-dreadful-affordability-gets-worse-in-canada/>



- Stress testing for non-insured federally-regulated mortgages (start of 2018), at the greater of the posted rate for 5-year mortgages or the contract rate plus 2 points.
- The application of stress testing to all insured mortgages (fall of 2016) at the greater of the posted rate for 5-year mortgages or the contract rate plus 2 points had a short-lived impact that dissipated quickly. But, when the test for all federally-regulated mortgages was added in 2018, the combined impact was very substantial.

Impact of changes in maximum amortization periods

In a long-ago analysis, I was able to work with a large database of actual mortgages (about 59,000) that were issued in 2009 and 2010. That database was used to simulate the consequences of three changes in maximum amortization periods, from 40 years to 35 years, then to 30 years, and then to 25 years. The analysis was published in the Fall 2012 “Annual State of the Residential Mortgage Market in Canada”. The simulations indicated that the moves from 40 to 35 and then 35 to 30 years would have had relatively small effects on actual mortgage qualifications, and some of the potential impacts could be reasonably cured by increasing down payments. But, when the maximum amortization period was further reduced to 25 years (as of July 2012), the simulations showed a large potential impact. The negative impact was visible in data on sales.

In the sales data, it is difficult to see how durable that negative impact was, because there are multiple factors that affect sales: shortly thereafter, interest rates were reduced, and this generated a sales rebound. That rebound led many observers to conclude that the impact of the policy was short-lived.

There is an alternative interpretation, that the depressive effect of the policy change continued, but it was masked by the drop of interest rates.

One way to illustrate this interpretation is to compare sales data for the US and Canada.

Housing markets in Canada and the US are subject to economic influences that are quite similar, in terms of the two main drivers of sales - interest rates and employment trends. The population of Canada is equal to about 11% of the US. Therefore, the chart to the right scales the Canadian data (on the right side) at 11% of the US. From the start of 2008 to mid-2012, resale activity in Canada was quite close to 11% of the US figures, and averaged 10.7%





(the next chart shows the ratios). But, since mid-2012, the ratio has been substantially lower than 11% most of the time, and for the entire period from July 2012 to the present, the ratio has averaged 9.6%.

As shown in this chart, there was a brief period when the ratio exceeded 11%: this was during mid-2020 to mid-2021, when the incidence of Covid-19 in the US was three times worse than in Canada, and Covid's economic impacts were considerably more severe in the US than in Canada. During the second half of 2022, the ratio averaged 9.5%.



This data implies that during the past decade, sales of existing homes in Canada

have been about one-tenth lower than they should have been: sales should have totalled about 6.0 million during July 2012 to the present, but actually totalled about 5.4 million, for a shortfall of about 600,000 sales. Tightening of mortgage regulations has been a major contributor to that shortfall.

This data applies to resale market activity. There has very likely been a policy-induced reduction in sales of new homes, which has constrained housing supply. If the one-tenth reduction also applies to new homes, then during the past decade new housing construction in Canada was likely in the order of 200,000 dwelling units lower than it should have been, as the consequence of changing mortgage regulations.

The current maximum amortization period of 25 years for insured mortgages, layered onto other regulations, is clearly an impediment to home ownership, which prevents Canadians from making housing choices that they believe are in their best interests. In addition, this policy has contributed to the housing shortages in many communities of Canada. In that respect, this policy (and others) has ultimately contributed to excessive house price growth in Canada.

On the other hand, can it be demonstrated that when 30-year amortization periods were available for insured mortgages, there were increased risks to the stability of the financial system or the broader economy?

Data from consumer surveys has consistently shown that each year about one-third of mortgage borrowers make lump sum payments on their mortgages or voluntarily increase their payments. This results in actual amortization periods that are considerably shorter than contracted.

Conclusion - allowing 30-year amortization periods for insured mortgages appears reasonable.



Stress testing for new mortgages

As was mentioned previously, an early version of stress testing for insured mortgages was used for mortgages that had variable rates or fixed rates with terms shorter than 5 years: testing was at the posted rate for 5-year fixed rate mortgages (this started in February 2010). During that period, fixed rate mortgages with terms of 5 or more years continued to be tested at the contracted interest rates. Based on the data in the charts above, this requirement does not appear to have materially affected sales, and there was very little discussion of impacts at the time. *In fact, it might be said that this was a quite successful policy, as it encouraged first-time buyers to select a long-term fixed rate mortgage, and discouraged them from taking the risks associated with variable rates and shorter fixed-rate terms.* After that initial term, when borrowers' changing circumstances (income growth and increased home equity) reduce their personal risks, shorter term mortgage options become less risky as choices, and actual choices made at renewals were less affected by mortgage regulations.

During late 2016, a policy change required stress testing for all insured mortgages. This had a substantial but short-lived negative impact: many borrowers discovered that they could avoid the stress tests by getting uninsured mortgages – by increasing their down payments to 20% (or more).

Then, at the start of 2018, the Office of the Superintendent for Financial Institutions, through its Guideline B-20, introduced a requirement for stress testing of all residential mortgages issued by federally-regulated financial institutions. The combination of the two stress tests (insured and OSFI) has had a substantial and prolonged effect on home buying in Canada. This is additional to any effects arising from earlier policy changes. The combined negative impacts of multiple policy changes have been quite large, as can be seen above in the charts that compare sales in the US and Canada.

Discussion of the stress tests needs to recognize that they do analysis in the present for an event (mortgage renewal) that will occur in the future. The design of the stress tests considers only the possibility that interest rates will be higher in future, but does not take account of three additional considerations that will influence the impact of that future renewal (principal repayment, income growth, and increased home equity).

It can be calculated that the use of a 0.75% rate increment above the contracted rate simulates the effect of a 2-point rise five years in the future (this is based on a moderate assumption about income growth). The Appendix to this report explores that conclusion in detail. In fact, it is concluded that this increment of 0.75% is more than adequate to simulate the effects of a 2-point rate increase in five years.

- Furthermore, it is concluded that the rate increment should be sensitive to the length of the term of the mortgage (the time-to-renewal).
- Recommended increments are shown in the table on the next page.
- In addition (and for future discussion) it is arguable that the test parameters should be sensitive to the borrowers' equity positions.

Conclusion – if the purpose of the stress tests is to assess the future effects of a 2-point rise in the mortgage interest rate, the increments shown in the table below should be employed. However, that assumption of a 2-point rise may be inappropriate in the current high-rate environment.



Indicated Interest Rate Increments (Above Contracted Interest Rates), to Simulate the Effects of a 2-Point Rate Rise at Renewal	
<i>Initial Term</i>	<i>Increment</i>
5 years	0.75
4 years	1.00
3 years	1.25
2 years	1.50
1 year	1.75
Variable Rate Mortgage	2.00
Source: calculations by Will Dunning Inc.	

Stress testing for mortgage switches and transfers

The OSFI Guideline B-20 creates a requirement that when a mortgage is renewed and moved to a different federally-regulated lender (labelled here as a “switch”) or the mortgage is moved from one property to another (a “transfer”), the mortgage must be stress tested.

It has been commented in the past that this requirement could cause some borrowers to become trapped at their current lender, which could prevent them from negotiating the best-possible interest rate. The Bank of Canada and the federal regulator (the Office of the Superintendent of Financial Institutions, or “OSFI”) both have data resources that could be used to investigate this. Both have commented that interest rates for all renewals are not materially different than rates for new mortgages, and therefore this does not appear to be a real issue. However, in the past when interest rates were changing by relatively small amounts and meanwhile incomes were growing, there would be few renewing borrowers who would fail the stress test. Consequently, analysis of interest rates for all renewers would have been unlikely to spot any problems for that small number of borrowers. The proper test would look only at renewing borrowers who would fail the stress test, and what happened to their interest rates.

Now, with interest rates much higher than previously, there will be very large numbers of renewing borrowers whose interest rates had been in the range of 2% to 3.5%, will renew at 5% to 5.5%, and will be stress tested at 7% to 7.5%: there is a much greater likelihood that renewers will fail the stress test and could become trapped (and therefore potentially exploited) at their current lenders.

Stress testing is intended to reduce risks at the financial institutions, including federally-regulated lenders and the mortgage insurers. The requirements for stress testing of mortgages that are transferred to a federally-regulated lender doesn’t reduce overall risk within the financial system, because the mortgages already exist and therefore risks already exist: at best, all this policy does is influence where the risks are located.

But, this requirement creates risks for the borrowers that they could be trapped at their current lender, and therefore be exploited by that lender. This adds to the aggregated risk among consumers, and therefore it adds to risks for the broader economy.

Conclusion - stress testing should not be applied for mortgages that are moved between lenders, so long as there is no increase in the mortgage principal.



Policies related to sizes of mortgages

Since June 2012, homes that are valued at more than \$1 million are no longer eligible for mortgage insurance. With subsequent growth of prices, there is an increased number of homes that are ineligible for insurance and are therefore inaccessible to buyers who have down payments of less than 20%.

It might be rare for people to want to buy and be able to afford a home valued at more than \$1 million, but have down payments less than 20%. This would require household incomes in the area of \$250,000 and higher. But, there is a very large number of households with such incomes (data from the 2021 Census shows that 1.47 million households - almost one-tenth of all households - had incomes of \$200,000 and above - this is the highest income range shown in the available data). It is reasonable to expect that there are many Canadians who could buy homes priced above \$1 million, and be able to meet their payment obligations, but are unable to because of the \$1 million ceiling for mortgage insurance.

There are communities within Canada in which entry level prices are \$1 million and higher for ground-oriented homes that are suitable for families, and even for family-sized apartments. There are likely large numbers of potential entry level buyers (and even second-time buyers) who could afford those homes, but have been unable to accrue 20% down payments. Despite their economic conditions and prospects, regulations prevent them from meeting their reasonable and affordable housing needs.

The additional down payment requirement for homes priced above \$500,000 (the excess portion requires a minimum 10% down payment) does not appear to have materially affected home buying, and therefore this review does not suggest any related policy actions.

Conclusion – the \$1 million price ceiling for insured mortgages should be revisited.

Treatment of rental income

For decades, renting out part of a home has often been part of the first-time purchase strategy. Under current lending rules (including mortgage insurance), from 50% to 100% of the rent can be added to income for qualification purposes. However, CMHC staff indicate that 100% inclusion is “quite rare”, and in most cases the inclusion rate is 50%. Applying a 50% inclusion rate to a maximum GDS ratio of 39%, rental income is essentially credited at 19.5%.

But, the rents received could be treated as a deduction from housing costs, and therefore make a much bigger contribution to access to ownership.

Conclusion - if some part (50% or 75%) of the rent was deducted from costs (instead of being added to income), in addition to improving access to ownership, this would provide additional incentive to provide “accessory” rental space within existing structures, which is badly needed in many communities. Furthermore, this would increase the population density of communities, which would usually have environmental benefits.



Bulk insurance/securitization

This analyst has little familiarity with this topic area, and this discussion is acknowledged to be only partial.

Before the current bulk insurance/securitization rules took effect, there had been greater possibilities for buyers to start in the alternative lending sector, and to migrate to a mainstream lender once their situation had improved sufficiently that they could qualify (such as improved credit ratings, improved employment history, higher incomes resulting in reduced GDS/TDS ratios, and lower loan-to-value ratios). With tighter rules, there has been concern that because of limitations on bulk insurance and securitization (including loan-to-value limits and ineligibility of refinances), borrowers are more likely to become trapped in the alternative lending sector, and face prolonged periods of paying interest rates much higher than they might be able to obtain from a mainstream lender.

Recently, there has been some anecdotal commentary about alternative lenders being unable to renew mortgages (because of withdrawals of funding by investors and depositors). Impacts on the borrowers may include: default on the mortgages, renewals at much higher interest rates, and forced sales.

In recent times, there has been increased utilization of alternative lenders, in part because of the increasingly onerous regulations for insured mortgages and federally-regulated uninsured mortgages.

These factors combine to create a potentially large risk related to alternative mortgage lending. Although the dimensions of those risks are unknown, they might be quite substantial, and expanding rapidly.

Most of the risks are borne by the borrowers and the lenders, and it might be tempting to hold *laissez faire* attitudes. However, to the extent that the borrowers (and investors) may experience extreme adverse consequences, there is a potential for substantive impacts within the broader economy.

There is a need for much more (and timely) information on evolving conditions within the alternative lending sector, which should be addressed jointly by provincial regulators, OSFI, the Bank of Canada, and CMHC.

More broadly, current bulk insurance and securitization policies have likely reduced competition in mortgage initiation (by hobbling the ability of smaller lenders to obtain loanable funds). Increased competition would benefit consumers.

Conclusion – There should be research and discussion about whether there is a need for policies to reduce risks arising from existing alternative mortgage loans.



What can we learn from data on mortgage arrears?

Some very useful economic data comes from non-government sources. One of those is the data on mortgage arrears that is collected and published by the Canadian Bankers Association.⁶ At this time, the most recent data shows that at the major Canadian banks, mortgage arrears remain at exceptionally low levels (just 0.15% as of October). This is despite the very rapid rise in interest rates that occurred during 2022 (see the next chart).

The lack of reaction of arrears to rising mortgage costs has attracted some discussion. I have noticed some opinions to the effect that this shows that the mortgage stress tests “seem to have worked”. Other commentary suggests that it takes time for arrears to rise (because of the gradual process of mortgage renewals) and that the arrears rate is due to begin rising during this year -there may be some truth to this argument. Even so, the data in this chart shows that the relationship between interest rates and the arrears rate is very weak.



I suggest a different interpretation of the data on arrears, which I have discussed in other reports (for more than a decade): people can very often adjust to changes in mortgage payment costs so long as they have stable incomes (in other words, they have stable employment situations). Therefore, the arrears rate is strongly influenced by the employment situation, and this is much more impactful than changes in interest rates.

⁶ Available on this page: <https://cba.ca/mortgages-in-arrears> and a table with historic data is available here: https://cba.ca/Assets/CBA/Documents/Files/Article%20Category/Spreadsheets/stat_mortgage_oct2022_en.xls



This chart shows the relationship between the percentage of people who have jobs (the employment-to-population ratio) versus the arrears rate. Just below, a slightly different version of this chart inverts the order in which the employment rate is shown. In that chart it is clear that there is a strong relationship between arrears and the employment situation.

Statistical analysis can be used to look at these two “explanatory” variables (interest rates and the employment rate) in combination. “Simultaneous analysis” of these two variables does a very good job of explaining changes in the arrears rates: in that analysis, the employment rate is much more powerful than interest rates.

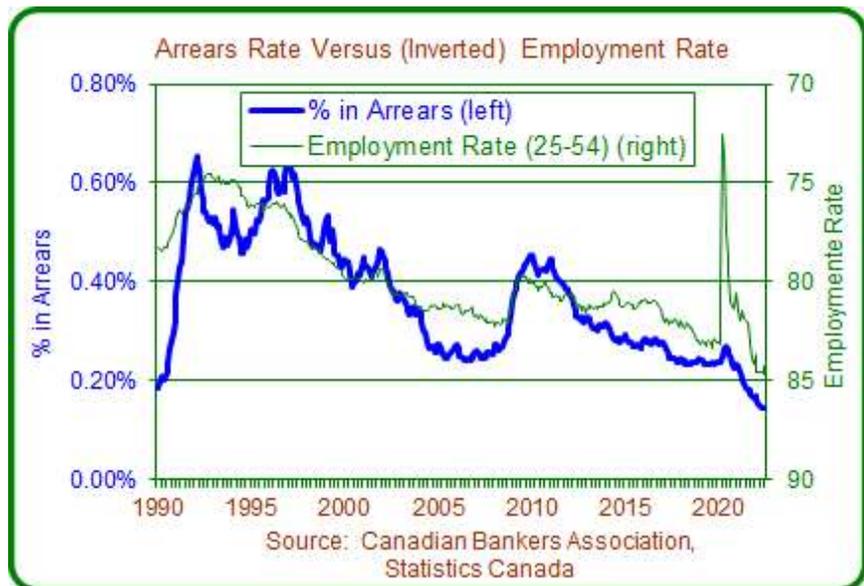
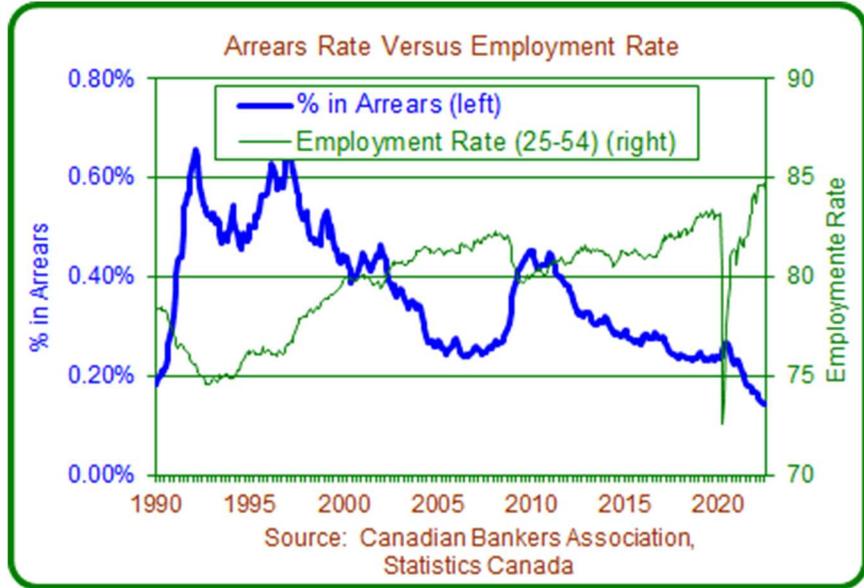
At present, the strength of the employment situation is tending to reduce the arrears

rate, and this effect is by far outweighing the effect of higher interest rates. But, if it should happen during the coming year that the economy is weakened by higher interest rates (reducing the employment-to-population ratio), then that evolving combination (weaker employment and higher mortgage costs) could result in a notable rise in the arrears rate. If on the other hand, the economy remains strong, any increase in the arrears rate should be muted.

The implication of this discussion is that the very low level of the arrears rate (and its lack of increase) does not tell us anything about the effects of the mortgage stress tests.

To the contrary, the data and analysis imply that the stress tests have not materially affected the arrears rate, because arrears are primarily driven by changes in the employment situation, not by changes in mortgage costs.

I argue that the mortgage stress tests have added to economic risks, because:





- They have caused more people to take mortgages from alternative lenders,
- And in several ways the stress tests have caused the level of employment to be lower than it would be otherwise: by
 - Contributing to more-rapid growth of rents,
 - Becoming one of the multiple factors that have constrained construction of new homes (which means that there is less employment than there could be in construction and in industries that provide goods and services to the process), and
 - Reducing volumes of home sales reduces employment and incomes from real estate sales and in other spin-off activities).
- An extension of this argument is that the stress tests have added to the risk that the employment situation will deteriorate this year. Through these effects, the mortgage stress tests might contribute to a rising arrears rate during this year.

Other issues

Other discussions occasionally touch on issues that require attention. This review is not exploring those issues, due to lack of data (and my lack of familiarity with the substance of the issues). These issues include:

- Mortgage fraud.
- Money laundering in the housing and mortgage markets needs to be addressed.
- Improved transparency around beneficial ownership of housing is an important need.

About the Author

Will Dunning has been analyzing housing markets since 1982.

In September 2000, he opened his own consulting company (Will Dunning Inc.), which specializes in analysis of housing markets. Clients include a wide range of industry associations, governments, non-governmental organizations, financial institutions, home builders, investors, and asset managers.

His prior experience includes various positions in economic and housing market analysis with Canada Mortgage and Housing Corporation (1982 to 1997).

Will's website – www.wdunning.com – provides a variety of reports on housing markets, including “Housing Market Digest”. The two monthly versions of this report discuss market trends for Canada and the Greater Toronto Area.

Will has a BA in Economics (McGill University) and an MA in Economics (University of British Columbia).



Appendix – Simulation of Stress Test Scenarios

This Appendix starts with a scenario for stress testing that might have occurred five years ago (December 2017).

For simplicity, this analysis excludes the non-mortgage housing costs that would be included in the calculation of GDS and TDS ratios. Therefore, the GDS and TDS ratios that would be calculated by a lender would be higher than the numbers shown below, usually by more than 5 percentage points.

Assumptions that might have been used as of December 2017 include:

- The contract interest rate is 3.25% (which at that time was a typical “special offer” rate for a fixed rate mortgage with a 5-year term).
- The mortgage amount is 4.5 times the borrower’s income, which is the threshold that federal government officials consider elevated.
- In this analysis, the income is assumed to be \$100,000 per year.
- The amortization period is 25 years. It is assumed that no additional payments are made by the borrower (although consumer surveys have found repeatedly that each year about one-third of mortgage borrowers take actions that shorten actual amortization, including making lump sum payments and/or voluntarily increasing their regular payments to more than is required).
- At the end of the first 5-year term, 14.1% of the mortgage will have been repaid (and more if the borrower has made any additional payments).

The calculations show the following:

- The initial mortgage payment (\$2,187.75 in this calculation) will be equal to 26.3% of the borrower’s income.
- The stress test analysis (at 2 points above the contract rate, or 5.25% in this case) will calculate a mortgage payment of \$2,675.81, which is equal to 32.1% of the borrowers’ income.
- But, in five years (at December 2022), a renewal at a rate of 5.25% would result in an actual monthly payment of \$2,591.99. So, the stress test would over-estimate the rise in the payment, by 3.2% (\$83.82 per month in this example). Correspondingly, the stress test would over-estimate the ratio-to-income: in this example, the ratio should be 31.1%, rather than the 32.1% that would be calculated.
- This is a relatively small error, which might affect the qualification of a few potential borrowers.
- A larger consideration is that it very likely that during the 5-year term, the borrower’s income will have increased.
- Data from Statistics Canada’s Labour Force Survey shows that the average weekly income in Canada rose by 27% (2.42% per year) during the 10 years from 2007 to 2017.
- That factor could have been applied in this analysis. If the borrowers’ initial income was \$100,000, by the time of renewal in 5 years, it would be about \$113,000.
- A stress test that made reasonable assumptions about the renewal (the future remaining principal and amortization period, and the future income), at the same interest rate that was used in the stress test (5.25%, or a 2-point increment above the contract rate), would produce the following estimates.



- At renewal, the monthly mortgage payment would be \$2,599.91.
- The borrowers' income would be \$112,699.99.
- The expected future mortgage cost ratio would be 27.6%.
- The stress test would have calculated a much higher ratio (32.1%).
- The failure of the stress tests to consider incomes at the time of renewal would unduly disqualify a large number of potential borrowers.

These undue results could be corrected in at least two different ways:

1. In addition to using the qualifying rate at 2 points above the contract rate, the calculation should be based on the future remaining mortgage principal and a reasonable expectation about the borrower's future income. As is discussed above, in this scenario, the expected future cost-to-income ratio would be calculated as 27.6%, which would be a small increase from the initial ratio of 26.3%.
2. Adjusting the qualifying rate that is used in the calculation, in a way that incorporates all three relevant variables: a 2-point rise in the interest rate, as well as the effects of income growth and principal repayment.

This second analysis can be structured as a calculation of the interest rate increment that could be used at the start of the mortgage, to result in the same cost-to-income ratio that is expected for the date of renewal, at a rate that is 2 points higher (in this example, the 27.6% calculated above).

Using the same assumptions as above, these calculations result in an increment of 0.47 percentage points above the initial contracted interest rate. Earlier, it was commented that an increment of 0.75 points would approximate the effect of a 2-point rise in 5 years. In fact, this analysis indicates that the increment could be even smaller, at about one-half of a point.

This analysis is based on an initial mortgage term of 5 years. Other initial terms would result in different results.

Calculations for a shorter initial term

Taking the same approach as above, for a purchase made in December 2020, but with the renewal to occur in two years (December 2022), the calculations provide quite different results. Taking the same assumptions as before that the initial mortgage was 4.5 times the borrowers income, at a 2.0% interest rate, the initial mortgage-cost-to-income ratio would be 22.9%. Applying the mortgage stress test (using as the qualifying rate the posted rate of 4.79% that existed at the time), the ratio would have been calculated as 30.7%. After non-mortgage costs were added, the stress test would have disqualified a substantial share of potential buyers. But, if it is assumed that income would increase by the rate seen over the prior 5 years (3.03% per year, as of 2020), the future cost-to-income ratio would have been calculated as 28.4%, versus the 30.7% that would have been calculated by the in-force stress tests. This amended stress test would have continued to disqualify some potential buyers, but the impact would be less severe.



Potential outcomes for renewals occurring now

To repeat a point made previously: if interest rates do indeed increase by a substantial amount, then in all likelihood the economy will be considerably stronger and incomes will have increased more rapidly than previously. This argument has been borne-out in what is happening now. During the past five years, the average weekly wage rate in Canada has increased by 23.7% (an average of 4.35% per year, far above the 2.42% rise that is used in the initial calculations above). While interest rates have increased sharply, that has occurred because the economy is very strong, and this has resulted in strong wage growth.

Today, a typical special offer rate for a 5-year fixed-rate mortgage is 5.10% (slightly below the 5.25% rate that the stress tests would have been assumed 5 years ago). At that 5.10% interest rate, in our example, the actual new mortgage payment would be \$2,560.47 per month. But, the current annual income is higher than had been expected, at \$123,740. The new ratio of mortgage cost to income would be 24.8%, actually lower than the initial rate of 26.3% that would have been calculated five years ago.

On this basis, the revised stress testing protocol that is suggested here would have provided more-than-ample protection against renewal risk.

If the borrower wanted to move the mortgage to a different federally-regulated lender, the mortgage would be stress-tested at a rate of 7.1%. For the borrower used in these examples (renewing after an initial term of 5 years), the result is a mortgage-cost-to-income ratio of 29.1%, versus the actual ratio of 24.8% that is calculated above. The stress test might result in some of these borrowers being unable to move their mortgages.

For a borrower that started with a 2-year term, the outcome of the renewal stress test is more severe. The initial mortgage-cost-to income ratio was calculated earlier as 22.9%. The actual ratio, based on a renewal at 5.1%, but with income growth of 10.8% (which was the actual average growth rate over this period of 2 years) would be 28.0%. Among borrowers in this situation, substantial numbers might find the cost increase quite challenging. Some of them will, so long as their employment situations are stable, be able to make adjustments so that they can continue to meet their mortgage obligations.

An important consideration is that the stress test (based on an interest rate of 7.1%) would calculate a ratio of 33.3%, and the calculated GDS ratios will be even higher when taxes and utility costs are included. These borrowers are at risk of being trapped at their current lender. In earlier times, interest rates were much lower and much more stable, and there was much less risk of borrowers failing the stress tests at renewal and becoming trapped.

Mortgages attainable in the current environment

A further analysis looks at a purchase that might be contemplated today. This analysis applies the stress test in the present, based on the current interest rate (5.10%) plus a 2-point increment. Assuming once again that the mortgage amount is equal to 4.5 times the borrower's income, the initial ratio of mortgage-cost-to-income would be 31.7% (and the GDS ratio would be even higher). This largely explains the sharp reductions for sales of new and existing homes.



At a 2-point increment above the actual contract rate, the current stress test would calculate a ratio of 38.1%. The actual GDS ratio (once costs for taxes and utilities are added) would be even higher, and it is unlikely that this purchase could be funded today via an insured mortgage or a federally-regulated lender.

But, adjusting the calculations to include income growth and repayment of principal:

- Based on the same assumption of modest income growth (2.42% per year): at a renewal in 5 years at an assumed rate of 7.10%, the future cost-to-income ratio would be 32.9%, slightly higher than the initial 31.7%.
- The interest rate increment that would take account of income growth and principal repayment is calculated as 0.39 point.
- As an alternative, if incomes continued to grow at the rate seen during the past 5 years (4.35% per year), the ratio at renewal would 30.0%, which would be lower than the initial 32.8%.
- ***In this analysis of the current situation, making the calculations using an increment of 0.75 point above the contract rate would, once again, adequately anticipate the effects of a 2-point rise in the rate.***

To conclude: to simulate the impact of a future 2-point rise in rates at renewal, an increment of 0.75 points above the contracted interest rate would be adequate for a 5-year fixed rate mortgage. For each year that the term is shorter than 5 years, the increment could be raised by a quarter point, and for each year that the term is longer than 5 years, the increment could be reduced by a quarter point.

Indicated Interest Rate Increments (Above Contracted Interest Rates), to Simulate the Effects of a 2-Point Rate Rise at Renewal	
<i>Initial Term</i>	<i>Increment</i>
5 years	0.75
4 years	1.00
3 years	1.25
2 years	1.50
1 year	1.75
Variable Rate Mortgage	2.00
Source: calculations by Will Dunning Inc.	