

Tightening tendencies (Part A)

By Warren Lovely & Taylor Schleich

Market-based odds continue to be tweaked, but one thing appears clear: interest rate hikes will soon be warranted in Canada. In essence, the debate (among market participants) centres around when rate hikes will materialize, and how fast/how far the Bank of Canada will ultimately move. In other words, just how much tightening does an overheating Canadian economy need? Or rather, how much can it bear?

To add perspective to this important debate, we have compiled this special *In Focus* report. This report, which we've labeled Part A, is the first of a two-part examination of monetary tightening tendencies. There's some initial context/history around each of the BoC tightening cycles we've observed since the overnight rate was adopted as the main policy tool in the mid-1990s. But our real focus here is on the prevailing economic backdrop, specifically how current conditions compare with those observed at the onset of prior rate tightening episodes. We compare the labour market and inflation backdrop to earlier periods, although really there is no comparison. We also explore the relative exposure to higher rates in Canada, keying on the importance of interest-sensitive demand to today's economic recovery. As required, we likewise explore trends in household leverage, some of which might leave you a touch uneasy.

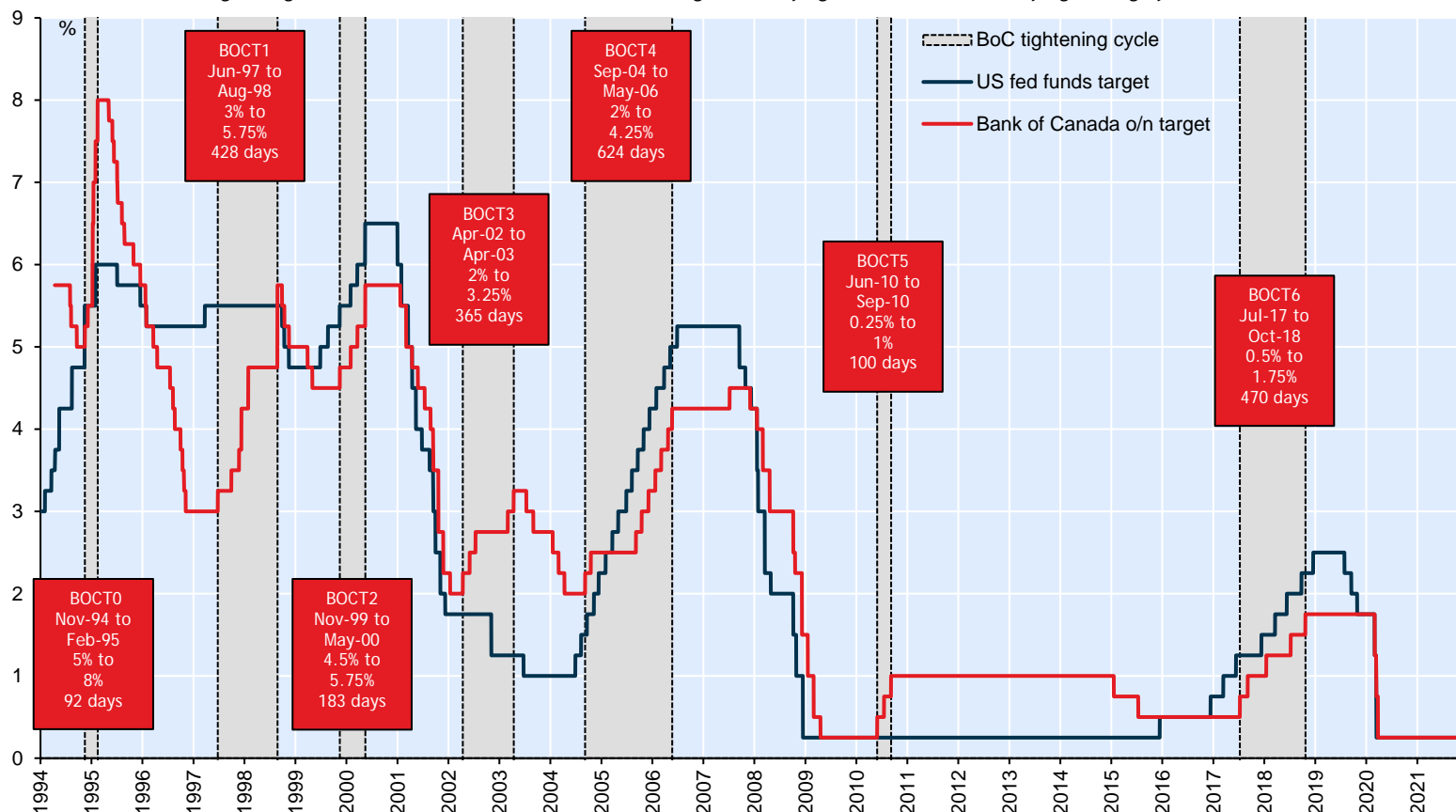
We present a series of summary conclusions on page 6, a key punch line being: the current interest rate expectations discounted in the market appear overdone. Notwithstanding red-hot inflation readings which argue for near-term liftoff (April?), we see 'a little doing a lot' when it comes to the ability of rate hikes bringing Canadian interest-sensitive activity (notably housing) to heel. We argue for a less-than-aggressive pacing and earlier termination of the tightening cycle than what some currently advocate for/believe in.

Note: A forthcoming and complementary Part B report will extend analysis to financial market behaviour during tightening cycles. Part B areas of focus include interest rates (outright, curves, cross-market), credit, equities and currencies. We examine empirical trading tendencies in the lead up to and onset of BoC rate hikes, drawing parallels (where they exist) to the current situation and controlling for the evolving U.S. policy stance. We overlay NBF's official rate hike forecasts with these historical tendencies to identify optimal entry points and expected moves. We'll likewise offer our take on how the BoC's overnight operating band is likely to evolve. Hint: A new normal may be upon us.

i) What have BoC tightening cycles looked like? Depends, with wholly consistent narrative elusive

Chart 1: A quarter-century of overnight rate targeting in North America, keying on BoC tightening cycles

Bank of Canada overnight target rate & U.S. Federal Reserve fed funds target, identifying distinct BoC monetary tightening cycles



Source: NBF, BoC, Federal Reserve | Note: Refer to Table 1 on page 2 for additional details on each of the BoC tightening cycles

Depending how you think about a late-1994/early-1995 surge in the BoC overnight rate (designed to shore up a flagging loonie), there have been six (or seven) distinct tightening cycles in Canada since the mid-1990s. The BoC has tended to tweak its key policy rate more than the Fed, with just four tightening cycles south of the border. Looking for an empirical episode when (a) both were hiking and (b) it was the BoC leading the charge? You won't find one. That's just one way that the looming policy normalization exercise looks to differ from the historical record.

Table 1: No two BoC tightening cycles have been the same, with associated Fed policy stance having likewise varied

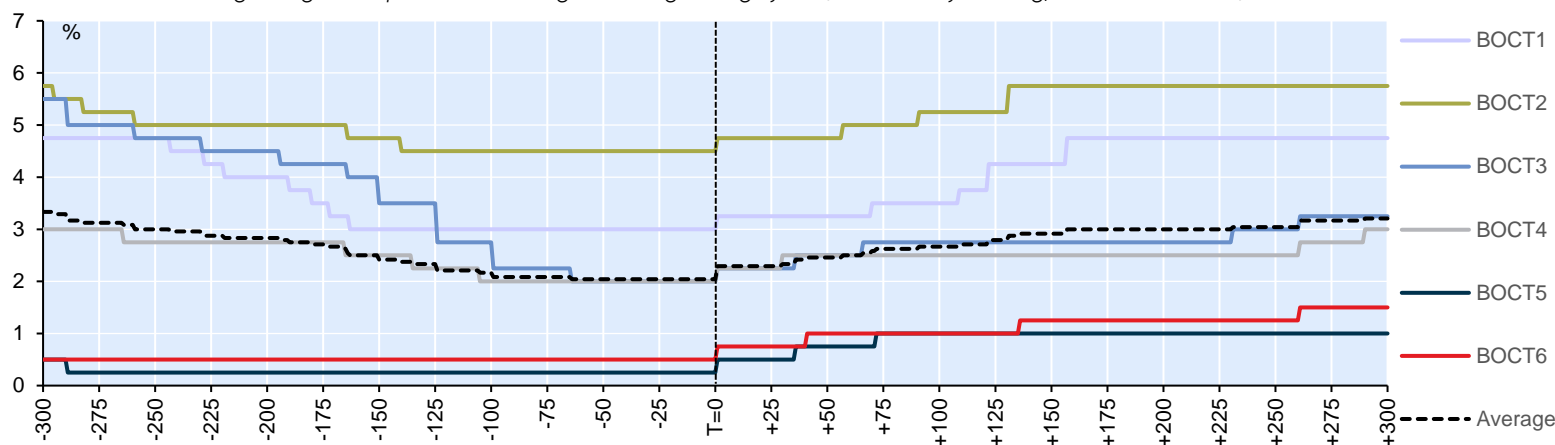
Detailed characteristics of Bank of Canada monetary tightening cycles, including relative U.S. Federal Reserve policy stance during cycle

BoC Tightening Cycles Since 1995																					
BoC Governor	BoC Cycle	Dating		Length		BoC O/N target		Change in BoC O/N target rate, initial sequencing & total hikes									Fed stance during cycle			Fed Chairperson	
		Start	End	Days	Months	Start	End	Change	Pace	Scale	1st hike	Delay	2nd hike	Delay	3rd hike	Hikes	Non-25	Tighten	Steady		Ease
Name	Id	Day	Day	#	#	%	%	bps	bps/mnth	% of start	bps	Days	bps	Days	bps	#	#	% of business days			Name
Thiessen	BOCT0	17-Nov-94	16-Feb-95	66	3.0	5.00	8.00	300	99	60%	25	15	25	23	50	7	5	83%	17%	0%	Greenspan
Thiessen	BOCT1	26-Jun-97	27-Aug-98	306	14.1	3.00	5.75	275	20	92%	25	69	25	39	25	6	3	0%	100%	0%	Greenspan
Thiessen	BOCT2	17-Nov-99	17-May-00	131	6.0	4.50	5.75	125	21	28%	25	56	25	34	25	4	1	99%	1%	0%	Greenspan
Dodge	BOCT3	16-Apr-02	15-Apr-03	261	12.0	2.00	3.25	125	10	63%	25	35	25	30	25	5	0	0%	0%	100%	Greenspan
Dodge	BOCT4	8-Sep-04	24-May-06	446	20.5	2.00	4.25	225	11	113%	25	29	25	231	25	9	0	100%	0%	0%	Greenspan*
Carney	BOCT5	1-Jun-10	8-Sep-10	72	3.3	0.25	1.00	75	23	300%	25	35	25	36	25	3	0	0%	100%	0%	Bernanke
Poloz	BOCT6	12-Jul-17	24-Oct-18	336	15.4	0.50	1.75	125	8	250%	25	40	25	95	25	5	0	100%	0%	0%	Yellen*
AVG		Avg of last 6 cycles		259	11.9	2.04	3.63	158	15	141%	25	44	25	78	25	5	1	50%	33%	17%	
MAX		Max of last 6 cycles		446	20.5	4.50	5.75	275	23	300%	25	69	25	231	25	9	3	100%	100%	100%	
MIN		Min of last 6 cycles		72	3.3	0.25	1.00	75	8	28%	25	29	25	30	25	3	0	0%	0%	0%	

Source: NBF, BoC, Federal Reserve | Note: 'BOCT1' to 'BOCT6' labels are used extensively in this report to identify distinct BoC tightening cycles; Fed chairperson changed during BOCT4 (Greenspan to Bernanke in Feb-2006) & BOCT6 (Yellen to Powell in Feb-2018)

Chart 2: The lead up to & initial stages of BoC policy rate liftoff, from 1997 (BOCT1) to 2017 (BOCT6)

Bank of Canada overnight target rate prior to & following start of tightening cycles (business day tracking, relative to first hike)

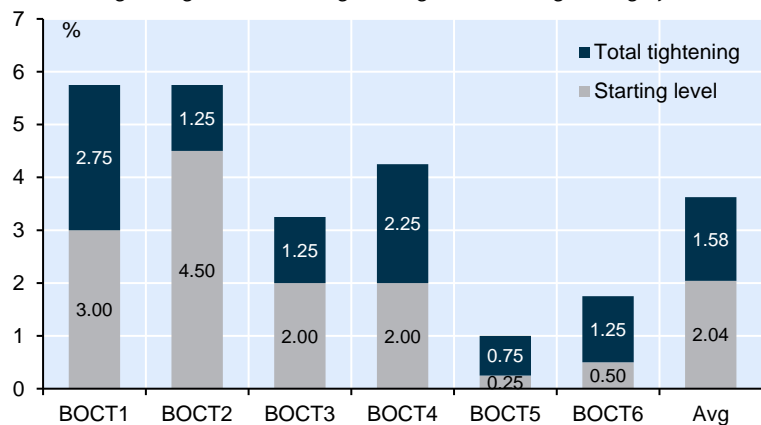


Source: NBF, BoC | Note: Business days on horizontal axis, relative to first BoC hike; refer to Table 1 for precise dates of the six BoC tightening cycles

Table 1 offers plenty of nitty gritty on past BoC tightening cycles. We've constructed a notional 'average' cycle, but don't be fooled. Structural changes in the economy and financial markets mean recent tightening cycles have differed meaningfully from the late-1990s or first half of the 2000s. The Fed's stance during BoC tightening periods is also noteworthy, being less than uniform or perfectly aligned. In three of the past six cycles, the Fed was hiking, having kicked things off sooner. Twice the Fed was on the sidelines. Once the Fed was actively cutting. In short, no two cycles are the same.

Chart 3: 'Less from lower' more recent tightening narrative

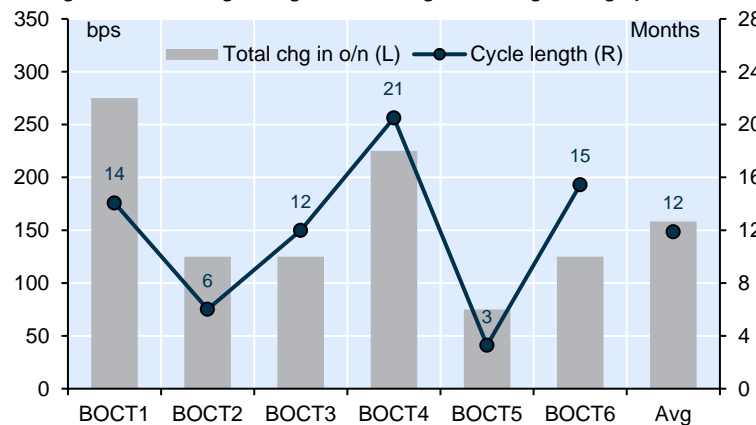
BoC overnight target rate: Starting/ending level of six tightening cycles



Source: NBF, BoC

Chart 4: Pacing of last cycle most measured of all (8bps/Month)

Change in BoC overnight target rate & length of six tightening cycles



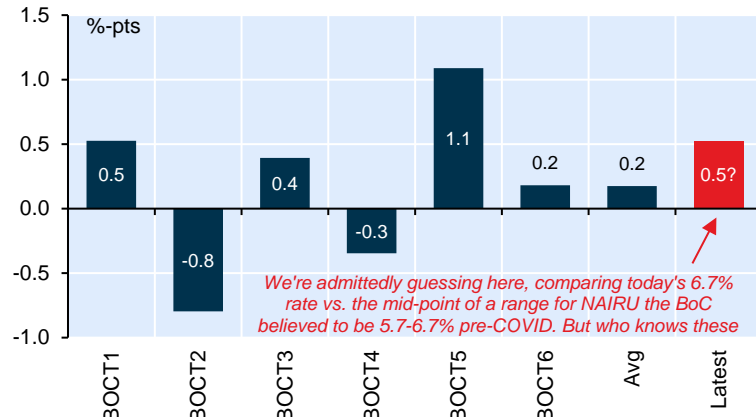
Source: NBF, BoC

There's been a clear step down in the starting and ending overnight rates during successive BoC tightening cycles. That's entirely consistent with the observed compression in potential growth and the resulting neutral policy rate. The last two cycles delivered just 75 and 125 bps of tightening respectively. BOCT5 (Jun-Sep 2010) was short/quick. Last time out, during BOCT6 (Jul-17 to Oct-18), the policy normalization pace was more deliberate than ever before. To wit, 125 bps over 15 months worked out to 8bps/month, or barely half as fast as the six-cycle average tightening pace.

ii) How do jobless & inflation rates compare to start of prior tightening cycles? They really don't!

Chart 5: Unclear how much slack really left in labour market

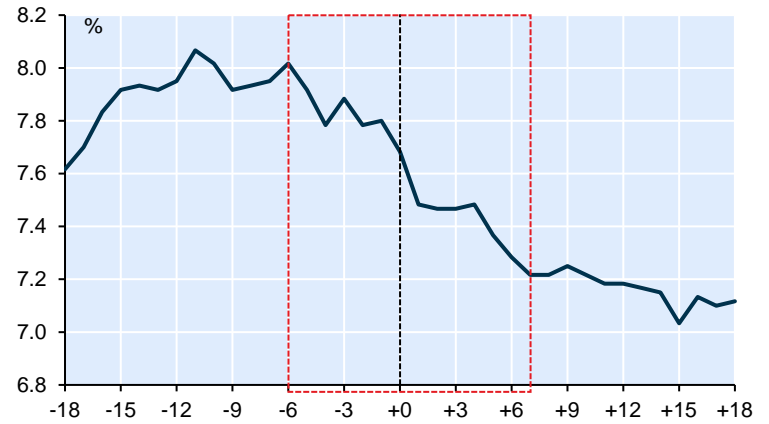
Canada jobless rate vs. NAIURU prior to tightening + latest guess for context



Source: NBF, BoC, StatCan | Note: For BOCT1-BOCT6, based on level for month immediately prior to first hike; latest is Oct-2021; uses mid-point of BoC NAIURU range

Chart 6: Joblessness trends down for half a year (or more)

Average path for Canada unemployment rate relative to tightening cycles

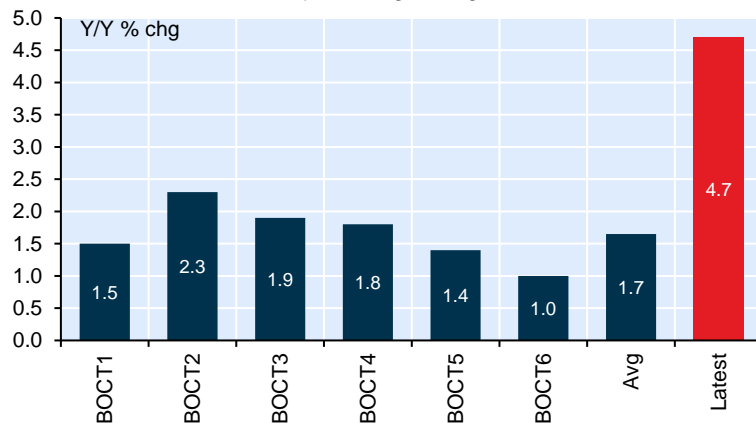


Source: NBF, BoC, StatCan | Note to Chart 6, 8, 10: Average for six tightening cycles; months on horizontal axis, relative to first hike

We'll tread cautiously on a labour market assessment, DepGov Schembri recently lamenting uncertainty here. Today's jobless rate would look to be half a percent above pre-COVID NAIURU, but full employment is harder to nail down these days. The u-rate will likely be a few ticks lower before the BoC gets rolling, labour markets tending to hold up ok during the first half year plus of tightening.

Chart 7: Which of these inflation rates doesn't belong!?

Canada all items CPI inflation prior to tightening + latest level for context



Source: NBF, BoC, StatCan | Refer to Chart 5 note

Chart 8: In past, headline inflation peaked after ~12M (on avg)

Average path for Canada all items CPI inflation during tightening cycles

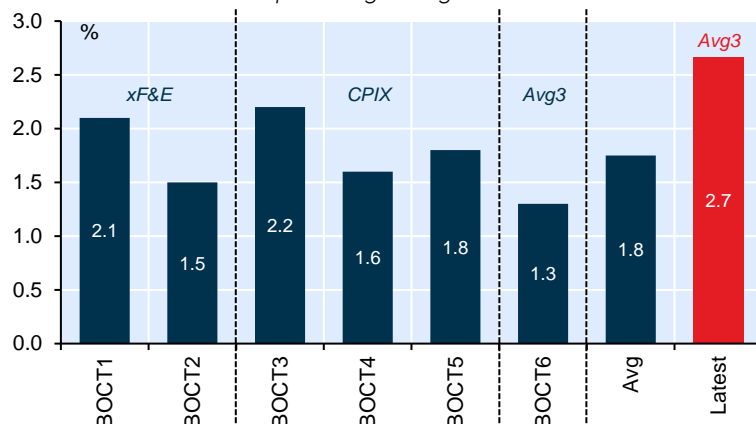


Source: NBF, BoC, StatCan | Refer to Chart 6 note

When it comes to headline inflation, there's nothing even remotely close to what we're seeing today. In the past, all items CPI inflation was averaging 1.7% prior to lift-off. You could argue policy was more forward looking in the past, as it often took 12 months for inflation to peak after the onset of tightening. Given where we'll likely be starting from, here's hoping we get more immediate relief.

Chart 9: BoC behind the curve on core curve? (Respectfully, yes)

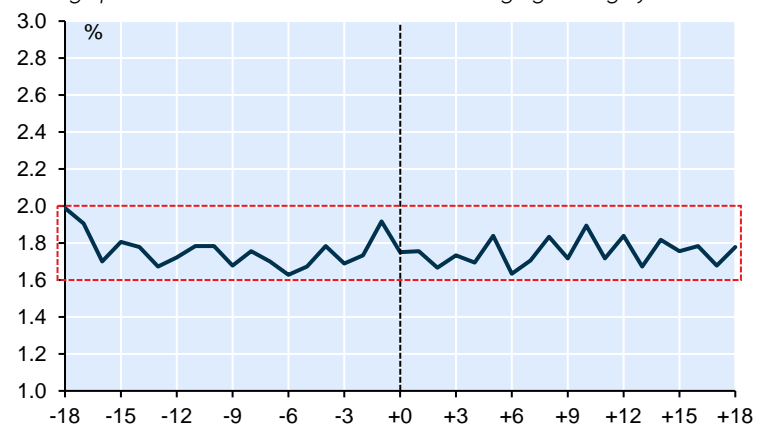
Canada core CPI* inflation prior to tightening + latest level for context



Source: NBF, BoC, StatCan | Refer to Chart 5 note | Note: Core measure is labeled

Chart 10: Historically narrow band for core inflation

Average path for Canada core CPI* inflation during tightening cycles



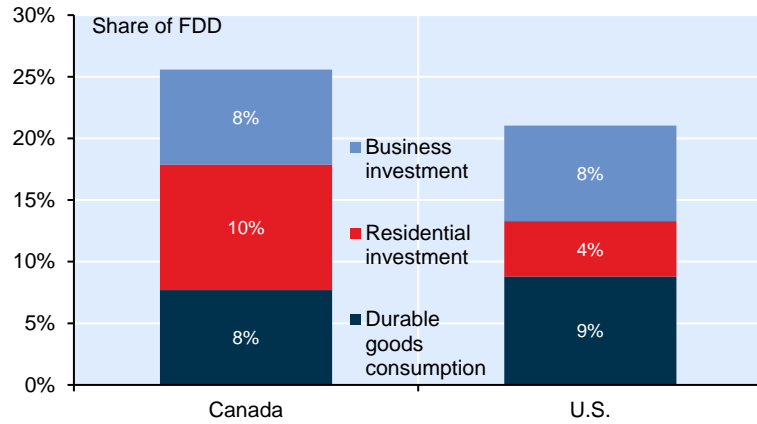
Source: NBF, BoC, StatCan | Refer to Chart 6 note | Note: Core measure varies over time

While not as extreme as the current headline rate, core consumer price inflation is steamy too, running far above the level that traditionally triggers rate hikes. On the face of it, exceptionally brisk inflation could argue for near-term and rapid rate normalization, lest the BoC fall further behind the curve and/or inflation expectations become more permanently unanchored. However... [read on]

iii) How much exposure to higher rates? A lot, with more seemingly at risk in Canada than U.S.

Chart 11: More interest-sensitive activity in Canada

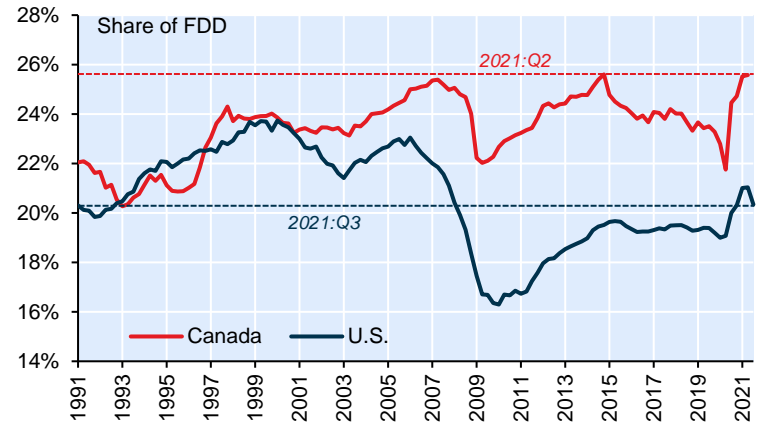
Interest-sensitive share of Final Domestic Demand (FDD): 2020:Q2



Source: NBF, StatCan, BEA | Note: Based on same quarter to improve comparability

Chart 12: Record share of Cdn demand interest-sensitive

Interest-sensitive share of Final Domestic Demand (FDD)

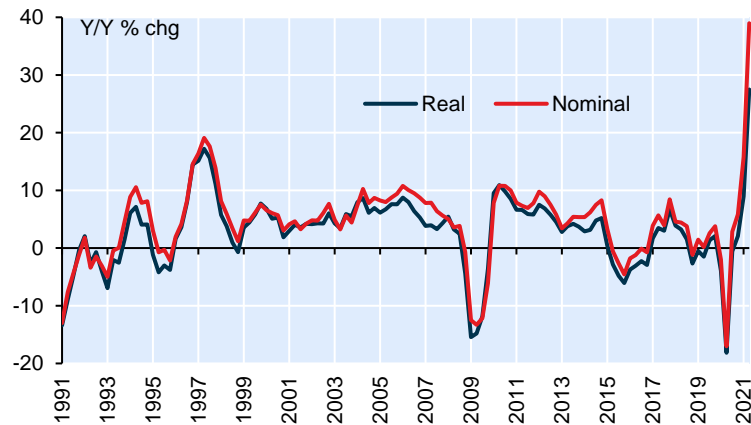


Source: NBF, StatCan, BEA | Note: Cdn data lagged one quarter (latest=2021:Q2)

While inflation argues for the removal of stimulus, spare a thought for the level of interest-sensitive demand in Canada. One standard approach counts more than 25% of final domestic demand coming from interest-sensitive private GDP components. This relative exposure is not only near a record level but is more extreme than in the U.S.—fully attributable to Canada's outsized reliance on housing.

Chart 13: ISD has exploded higher in Canada...

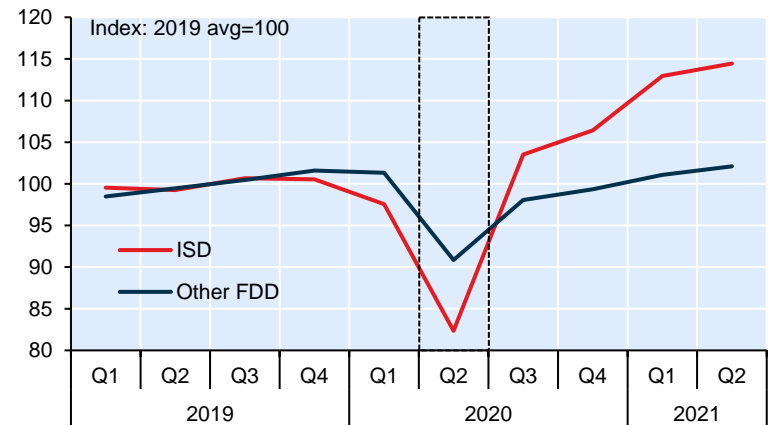
Growth in Canada interest-sensitive demand



Source: NBF, StatCan

Chart 14: ... driving outsized share of COVID recovery

Index of Canada interest-sensitive demand vs. rest of FDD: Current dollars

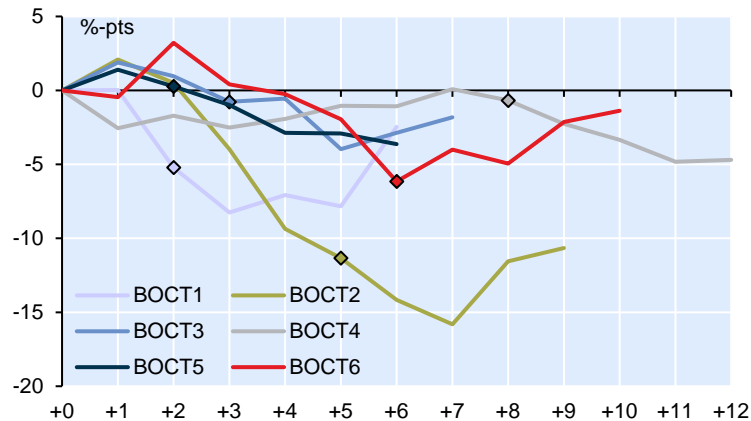


Source: NBF, StatCan

As with inflation, breakneck growth in interest-sensitive demand captures a prior-year base effect when activity was savaged by COVID-related restrictions. Still, interest-sensitive sectors have made an outsized contribution to Canada's recovery, in real and nominal terms. The latter picks up lofty housing prices, which have in turn keyed wealth creation and stellar national income growth.

Chart 15: Rate hikes have impacted ISD reasonably quickly

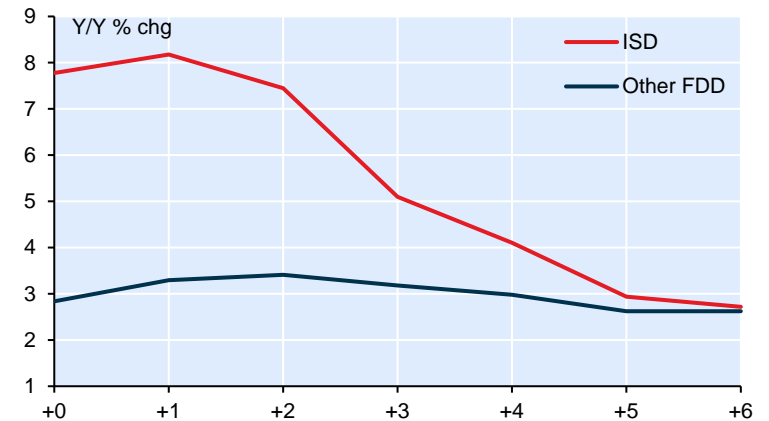
Cumulative change in Canada ISD growth (Y/Y) during BoC tightening cycles



Source: NBF, BoC, StatCan | Note: Change in Y/Y growth in real ISD for each cycle

Chart 16: ISD typically brought to heel within 4-6 quarters

Average growth in Canada ISD vs. rest of FDD during BoC tightening cycles



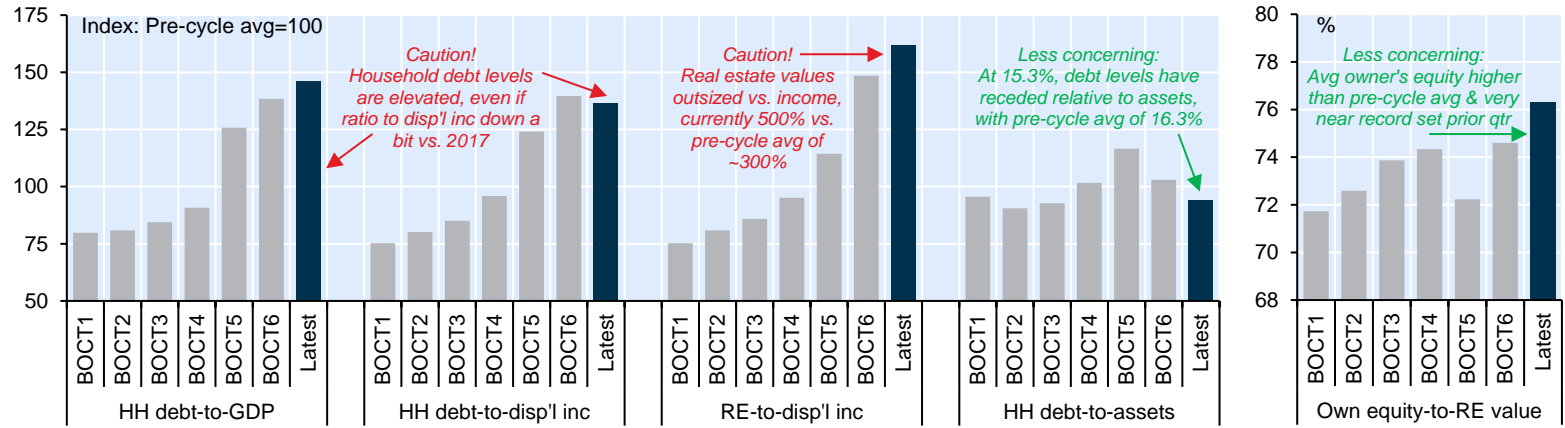
Source: NBF, BoC, StatCan | Note: Average growth trajectory for real ISD over 6 cycles

With a record share of activity (and disproportionate amount of growth) coming from interest-sensitive sectors, it stands to reason that rate hikes will leave a mark. They have in the past. Trend growth in interest-sensitive demand has reacted to hikes quickly in the past, generally brought to heel within 4-6 quarters. That's largely consistent with the 12-month length for the average tightening cycle.

iv) Canada's household sector / housing market understandably under the microscope

Chart 17: Plenty of household leverage metrics to watch... some concerning, others less so

Comparison of key household financial indicators: Latest reading vs. level observed prior to six earlier BoC tightening cycles

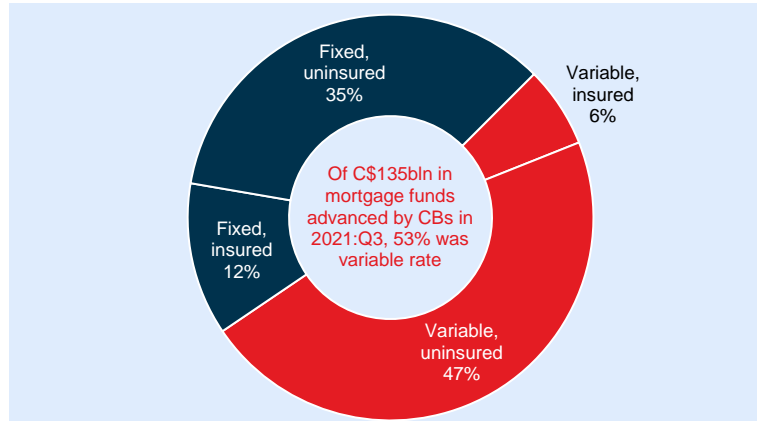


Source: NBF, BoC, StatCan

Simply put, Canadian households are carrying a lot of debt. Leverage is far above the average for past tightening cycles and more-or-less equivalent to the start of the last cycle (BOCT6), where a modest/gradual tightening served to cool things off. Real estate values are clearly elevated. Less concerning, Canadians have a fair amount (even more) equity in their homes these days.

Chart 18: Variable mortgage bonanza adds exposure

Share of CAD mortgage funds advanced by Cdn chartered banks: 2021:Q3

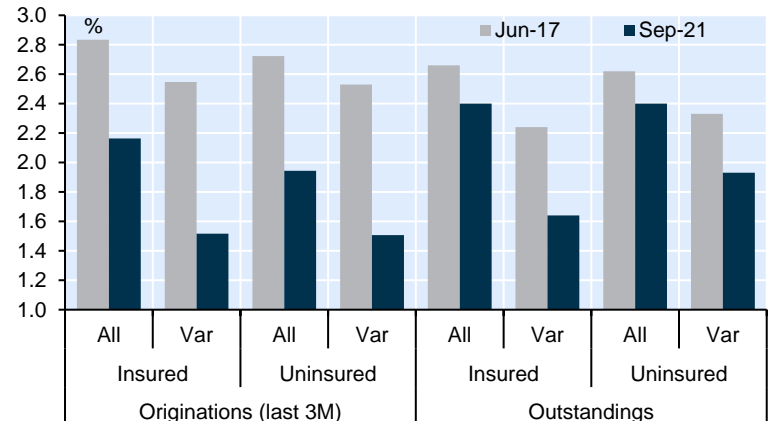


Source: NBF, StatCan | Note: Based on CAD funds advanced by chartered banks

The mortgage market warrants a stand-alone piece, and that's something we aim to come with. For now, note that the majority of recent originations have been of the ultra-cheap variable rate variety. Importantly, associated payments are fixed, limiting the shock to consumers. But with the mortgage stock and flow bearing the lowest-ever average rate, rate hikes and refs will gradually bite.

Chart 19: Mortgage rate adjustment expected to weigh

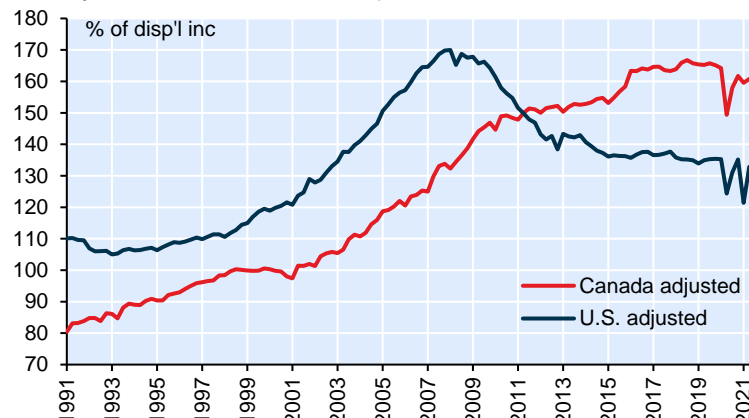
Prevailing rate on new & outstanding mortgages: Sep-2021 vs. prior cycle



Source: NBF, StatCan | Note: Based on CAD funds advanced by Cdn chartered banks

Chart 20: Canadians more heavily indebted than Americans

NBF-adjusted household debt-to-disposable income: Canada vs. U.S.

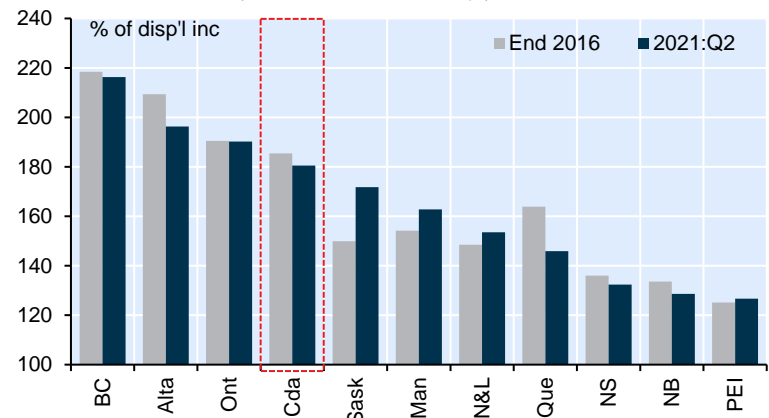


Source: NBF, StatCan, BEA, Federal Reserve | Note: Adjusted to aid comparability

Canada's household debt load is not only historically elevated but remains above that of the U.S. This suggests a given amount of tightening could exert a relatively greater dampening effect north of the border compared to down south, as we believe was the case back in 2017-18. For another relative perspective, consider the ongoing divergence in household indebtedness across the provinces. British Columbia, Alberta and Ontario still have debt levels above the national average. Quebecers are relatively less levered, household finances having been consolidated since the last tightening.

Chart 21: Regional debt exposure varies notably (like last time)

Household debt-to-disposable income ratio by province



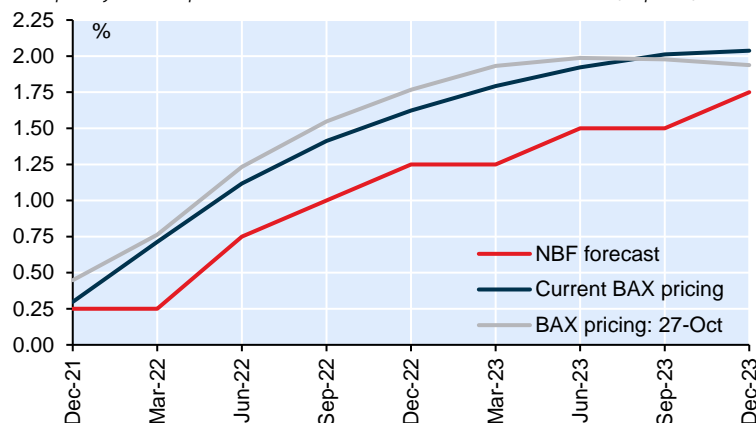
Source: NBF, StatCan | Note: Descending order based on latest data (2021:Q2)

Summary conclusions (Part A)

- First a caveat: There's plenty of commentary on the real economy here, as we've sought to provide important economic context for a looming interest rate tightening exercise. This report does not, however, advance NBF's forecasts for GDP growth, jobs or inflation. Our detailed economic forecasts and underlying rationale are nicely presented in our *Monthly Economic Monitor*, accessible [here](#).
- There have been half a dozen BoC monetary tightening cycles in the past quarter century. While one can theoretically construct a 'representative' or 'average' cycle, no two tightening episodes have been the same (in magnitude, duration, pacing and location). Structural changes mean more recent cycles differ meaningfully from the late-1990s or first half of the 2000s. A step down in the starting/ending level for the overnight rate is consistent with a compression in potential growth and neutral policy rates. The last two BoC cycles delivered just 75 and 125 bps of tightening respectively. Last time around, policy normalization was more deliberate than ever before.
- The corresponding posture from the U.S. Federal Reserve has varied. You won't find an example where Canada led the U.S. in a coordinated tightening exercise. Typically, when both central banks are aligned on the need to remove stimulus, it's the Fed that gets the ball rolling and sets the overall tone. So there's a first time for everything.
- The economic backdrop is unlike anything seen at prior policy rate lift-offs. Labour market uncertainty makes it hard to determine how much slack remains. That might be an argument for keeping the labour market out of the BoC's official policy mandate. Regardless, the jobless rate will likely be a few ticks lower before the BoC gets hiking, labour markets tending to hold up relatively well during the first half year (or more) of tightening.
- We're already far beyond the level for inflation that traditionally sets off rate hikes. In the past, when monetary policy was arguably more forward looking, it was typically a year into the tightening cycle before headline inflation peaked. Given inflation is running closer to 5%, here's hoping we get more immediate relief. Note: NBF's official forecast sees year-over-year inflation moderating to ~2½% by the end 2022, lending some credence to the 'transitory' narrative still espoused by the central bank.
- While red-hot inflation argues for the removal of stimulus, spare a thought for the >25% of final domestic demand that is interest sensitive. Relative rate exposure is near a record level and more extreme than in the U.S., reflecting Canada's outsized reliance on housing. Interest-sensitive sectors have made a disproportionate contribution to the recovery, so there's a lot at stake. History shows rate-sensitive demand generally brought to heel within 4-6 quarters, largely consistent with the 12-month length for the average BoC tightening cycle.
- Elevated household leverage likewise argues for a measured tightening pace. Canadians have feasted on ultra-cheap variable rate mortgages, but credit looks be notably re-priced as tightening commences. Canada's mortgage stock and flow now bear the lowest-ever average rate, so rate hikes and refs will gradually bite. The BoC appears attuned to these risks, as evidenced by earlier communications. E.g. from Tim Lane: *"Canadian households are very heavily indebted... The implication of that is that raising interest rates actually has a larger negative effect on economic activity than it does when households are less heavily indebted. Now that's something that, of course, we would have to take into account when we're gauging what's the appropriate pace and timing of raising interest rates."*
- With a heavier household debt burden in Canada, a given amount of tightening should exert a greater dampening effect north of the border than in the U.S., as we believe was the case back in 2017-18. So the BoC may move first but won't necessarily outgun the Fed when all is said and done. The currency (and thus export prospects) remains sensitive to rate differentials, which argues against getting too carried away vis-à-vis the Fed. Regionally, household indebtedness varies notably. British Columbia, Alberta and Ontario have debt levels above the national average. Quebecers are less levered, household finances having been nicely consolidated since the last cycle.
- Wild cards? There are a few. The global outlook remains uncertain, recent virus developments somewhat worrisome. The trajectory for key variables (unemployment and inflation) is far from assured. Fiscal policy is hardly static, in Canada or the U.S. Canadian households will need to contend with the removal of extraordinary COVID-related supports. Federally and provincially, however, fresh stimulus looks to be on offer, the resulting fiscal impulse ultimately consistent with a moderate degree of monetary policy tightening. Finally, for the first time ever, BoC balance sheet management will feature in a tightening cycle, with that particular playbook having yet been written.

Chart 22: NBF's BoC policy rate call...

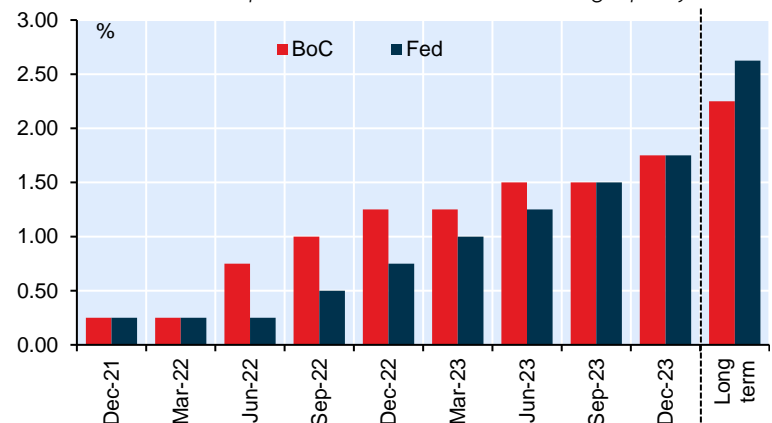
BoC policy rate expectations: NBF forecast vs. futures market (implied)



Source: NBF, Bloomberg | Note: Current as at 19-Nov, while 27-Oct was post-BoC

Chart 23: ... and how monetary policy may unfold vs. Fed

Current NBF forecasted path for BoC & Federal Reserve target policy rates



Source: NBF, BoC, Federal Reserve | Note: Long-term is implied neutral rate (mid-point)



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