UNWINDING PANDEMIC STIMULUS:

THE BANK OF CANADA'S NARROW PATH TO SUCCESSFUL POLICY NORMALIZATION

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INTRODUCTION AND OVERVIEW

Canada's monetary policy shift to contain inflation through significantly-higher interest rates was facing difficult challenges even before the Ukraine War's shocks to global inflation and growth. This paper explores issues and risks in the Bank of Canada's (BoC's) reactive policy pivot, examining lessons from its success during COVID-19's economic crisis and issues from its ultra-easy policy continuing for too long given Canada's economic rebound by 2H2021. It looks ahead at key considerations of accelerated policy rate hikes and quantitative tightening (QT) given inflation well above the BoC's target, broadening price pressures, elevated house prices, the effects of higher policy rates and the Ukraine War.

This paper uses the framework set out in Long-Term Thinking to assess BoC policy during COVID-19's economic recession, transition (recovery) and sustainable path (expansion) stages. This three-phase lens helps analyse the BoC's approach during Canada's crisis management, resolution, and prevention stages using two criteria. One is the fundamentally different policy required during economic crises versus afterwards. Extraordinary macroeconomic support was crucial during COVID-19's economic crisis, but ongoing, ultra-easy policy through the late transition stage created problems and risks. The other reflects the limits to prolonged monetary stimulus. Side effects of ongoing excessive monetary liquidity and too low policy rates included higher private and public debt levels, rising inflation risks and increasing investment distortions.

The BoC began unwinding its stimulus with a policy rate hike in March 2022, then accelerated with a larger hike in April, more forceful forward guidance regarding future rate increases, and started QT. While delayed and reactive, this shift was essential. Canada's economy reached a 46-year low in the employment rate in March with Gross Domestic Product (GDP) solidly above its pre-pandemic level. Inflation reached multi-decade highs in early 2022 with labour shortages in a range of sectors. The BoC's pivot was also important given the Federal Reserve Board's (Fed's) unwinding of ultra-easy policy that began in early 2022. For both central banks, reactive policy has increased their challenges of addressing sharply higher inflation, now aggravated by the Ukraine War, without risking a recession and, potentially, financial instability. The path to an economic soft landing for the BoC (and the Fed) has now grown much narrower.

1. DISTINGUISHING BETWEEN CRISIS POLICY NEEDS AND POST-CRISIS APPROACHES

1.1 Effective Crisis Approach – Swift, massive and broad-ranging support was critical during COVID-19's economic and financial markets crisis. Severe financial market instability and the historic economic contraction in March – April 2020 required the adoption of ultra-easy monetary policy and enormous fiscal support.[1] The BoC's rapid cuts to near-zero policy interest rates and first-ever quantitative easing (QE) bear emphasis. The BoC was highly effective as the lender of last resort to firms and financial institutions and as the buyer of last resort in debt markets. Immense government spending for individuals and firms, plus tax relief and generous credit, provided vital boosts to the economy and financial markets, and buttressed consumer and business confidence. The speed, scale and coordination of macroeconomic policy reflected well the lessons from the Great Financial Crisis (GFC). Extraordinary fiscal and monetary measures combined to "overwhelm the crisis" from the economic and financial market shocks.[2]

Huge fiscal and monetary support underpinned Canada's economy during subsequent COVID-19 waves in late 2020 and 1H2021. Fiscal demand stimulus continued beyond the economic crisis phase to support the recovery in the early and mid-transition phases. Canada wanted to avoid the fiscal mistakes of advanced economies that adopted restraint too soon after the GFC, and Japan's policy errors having enacted several mis-timed tax increases since the late 1990s.[3]

1.2 Delayed Adjustment Post-Economic Crisis – Yet, despite Canada's robust demand recovery, macroeconomic stimulus did not begin to significantly decline even after the large-size financial market, growth and jobs rebound by mid 2021. The dominance in Canadian fiscal policy of demand stimulus and projected large future deficits were major concerns by early 2021 (Towards More Balanced Fiscal Policy). Ongoing ultra-easy monetary policy was also problematic. Assessing when and how to unwind monetary stimulus was timely and vital as Canada's recovery was well established by mid 2021, and enormous fiscal stimulus continued.

Extensive analyst and practitioner literature prior to COVID-19 focused on the benefits, costs and risks of continuing ultra-low interest rates and QE after an economic and financial crisis had been resolved. While macroeconomic over-reliance on monetary policy was a reality of the post-GFC decade, critics pointed out the (i) diminishing benefits of ultra-easy policy beyond temporary boosting demand, and (ii) increasing disadvantages.[4] Side effects included soaring private and public sector debts, growing investment distortions, reduced potential growth, and increased risks of financial instability.

The limits to monetary policy in stimulating ongoing growth, achieving long-term economic prosperity and addressing sector-specific issues, and fiscal policy's relevance to interest rate and other policy settings were highlighted by the BoC in August 2020.[5] Far greater fiscal policy stimulus during the pandemic, relative to the GFC, was also a crucial difference. For near-zero policy rates, it meant that their continuation after the economic crisis phase should end as Canada's actual output approached its potential output in the late transition phase. The BoC's assessment of economic growth and of labour and product markets became very important in measuring this output gap. For QE, different criteria and a shorter timeline should have shaped its use after the economic and financial market crisis. The restoration of liquidity and sustained rebound in financial markets should be key indicators of when to conclude QE and shift to QT.

2. QE: TOO MUCH FOR TOO LONG

The BoC's QE policy evolved from emergency support during March-June 2020 into ongoing QE stimulus despite lessons from elsewhere about the limits to, and risks of, ultra-easy policy after crises. During the economic and financial crisis period, the BoC rightly engaged in immense QE to address the plunge in liquidity and severe capital markets turbulence. Buying at least $5 billion of bonds weekly and signalling the massive size of the QE program had the desired announcement and demonstration effects in bolstering debt markets (directly) and equity markets (indirectly). To help ensure that financial markets genuinely stabilized, the BoC continued enormous support in 2Q2020. It also undertook large-scale credit easing to keep credit flowing to other public and private sector issuers, buying a range of their debt and providing generous liquidity facilities to banks, firms and pension funds.

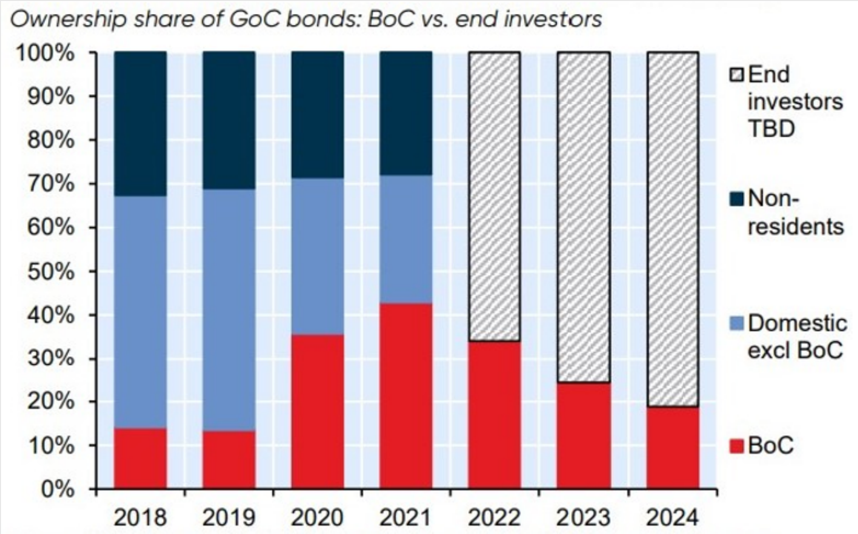
The BoC did wind back its credit easing in prudent fashion from mid 2020 through early 2021. Yet, it continued to make huge purchases of Government of Canada bonds (Canada bonds) long after debt and equity markets were clearly in a sustained rebound in 2H2020. Indeed, the BoC committed in July 2020 to the ongoing outsized buying of Canada bonds "until the economic recovery is well underway" as its QE morphed into ongoing monetary stimulus.

Sustained massive QE led the BoC's holdings to more than 40% of the total Canada bond market by mid 2021 and reached twice the size of the Fed's QE as a percentage of GDP. This stimulus was questionable on numerous grounds.

By late 2020, debt and equity markets in Canada and globally had recovered strongly. Investment dealer analysts in October 2020 contended that the BoC's QE was clearly excessive relative to the markets' need.[6] They cited the much larger relative scale of BoC purchases of Canada bonds versus the Fed's purchases of US Treasury debt, noting the Fed's bond purchases were front-loaded in the two months when the financial market stress was greatest, unlike the ongoing very large size of the BoC's QE program. These dealers advocated much smaller QE purchases, recommending reductions of $2.5 billion-plus from its $5 billion weekly pace. They stressed that excess domestic and foreign demand for Canada bonds was being diverted to other types of CDN$ debt, and also underlined the risks from the BoC owning over 40% of the total outstanding Canada bonds (Charts 1 and 2).

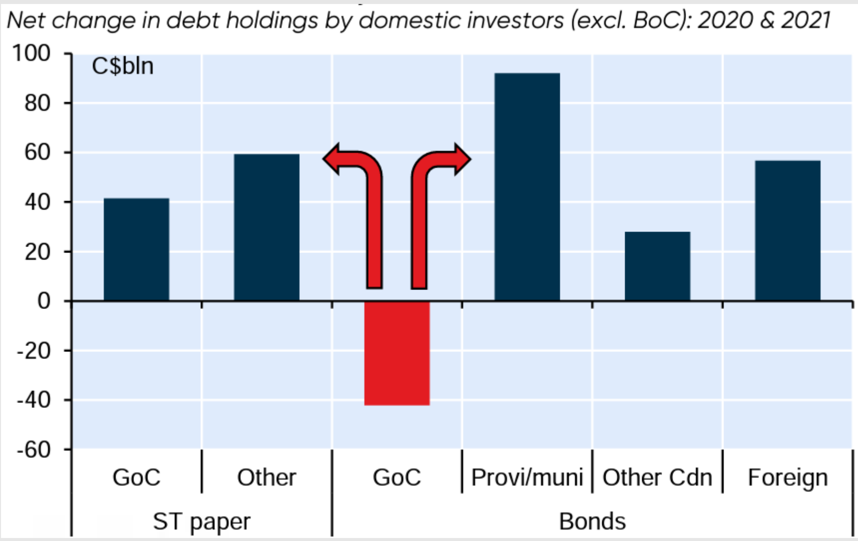
Yet, the BoC's QE continued through mid 2021, with just a modest QE decline to $4 billion of weekly purchases

Chart 1: QE's impact on domestic buying of Canada bonds



Source: *National Bank Financial (NBF), Statistics Canada, Bank of Canada*
Note 2018-21 are actuals, NBF forecasts thereafter

Chart 2: Changes in Domestic Investor Net Debt Purchases during QE



Source: *NBF, Statistics Canada*

from October 2020 through April 2021, then only moving to $3 billion weekly through mid July 2021. The gradual pace of QE reductions meant the BoC's buying of additional Canada bonds did not end until October 2021, while its reinvestment of existing holdings continued until late April 2022. The impacts of sustained QE on a large scale led to many traditional investors being "crowded out".[7] By accumulating a Canada bond market share of over 40% and waiting until mid 2022 to start meaningful unwinding, the BoC could face greater challenges, and risks, as it embarks on QT in undertaking the largest-ever bond re-distribution to CDN$ bond investors from its balance sheet holdings.

The BoC's continued QE did not sufficiently reflect the lessons of other central banks with QE (see Fed Policy in Transition). In mid 2021, Bank of England (BoE) analysis found QE had far greater impacts and merits in stabilizing financial markets and containing historic economic contractions during crises versus much less benefit in normal conditions.[8] The BoE underscored the importance of reversing QE, when recoveries are established or expansions are underway, to restore the balance sheet room and policy tools to respond to future crises.

There are also challenges in unwinding QE that create the serious risk of exiting from QE too slowly and too late. The issues begin with the greater uncertainty about QT's impacts versus QE, and the imbalance in behavioural incentives for central banks.[9] Political economy issues include the larger rewards for borrowers and investors as QE beneficiaries relative to QT's costs and risks. In the U.S. case, there is also serious asymmetry in the use of QE versus QT. The Fed decisively employed QE to offset major equity market weakness while being much slower and less active in containing elevated stock market levels during 2009 – mid 2020.[10] In addition, central bank studies generally find QE to have greater benefits than does academic research, and central bank analyses portray its effects more favourably.[11]

3. REACTIVE POLICY RATE HIKES

As was the case with QE, the BoC's use of near-zero rates could also be considered to have continued for too long. Beyond shifting QE's purpose to prolonged stimulus, the BoC's July 2020 interest rate release and remarks made clear that near-zero policy rates would continue well beyond the economic crisis phase of 1H2020. It announced new forward guidance whereby the BoC's key policy rate would hold at 0.25% "until economic slack is absorbed so that the 2 percent inflation target is sustainably achieved". BoC Governor Macklem said that the recovery was going to be a "long climb back", and "interest rates are going to remain low for an extended period."

This July 2020 guidance explicitly tied the BoC's interest rates to the output gap and labour market developments. It made the BoC's assessment of the output gap even more important given its view that monetary policy must be "forward looking" in light of the usual lags of 1½-2 years for policy's full economic and inflation impacts to occur.[12] This guidance and view made it surprising that the BoC's subsequent policy decisions downplayed various economic indicators by 2H2021 supporting changed guidance and an earlier rise in policy rates.

3.1 Economic Growth and Labour Markets – Given the unprecedented uncertainty by July 2020, the BoC's Monetary Policy Report prudently set out several potential growth scenarios for Canada in 2H2020 and beyond. The lack of precise forecasts at that juncture was entirely appropriate given the extent and range of "known unknowns" (e.g., future COVID-19 variants, consumption's path given pandemic restrictions) and "unknown unknowns" for policy-making.

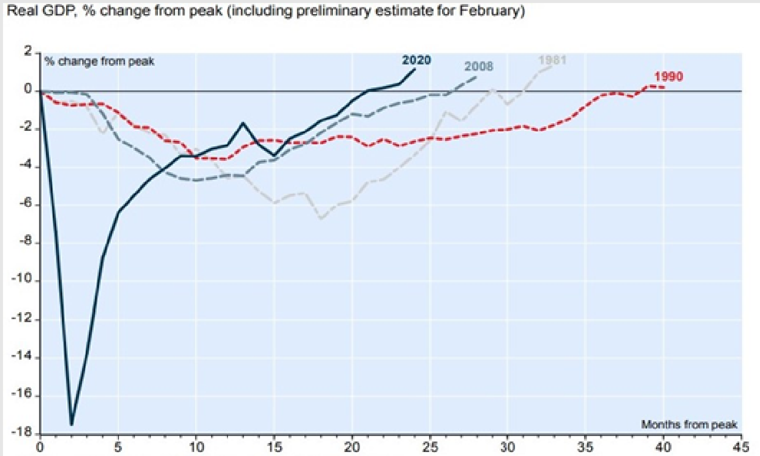
However, by late 2020, public and private sector forecasters alike were surprised by the pace and magnitude of Canada's economic rebound so soon after the historic March-April 2020 recession, especially given the GFC experience. The unknown unknown of technology advances was critical in adapting to restrictions on economic and other activities. COVID-19 dramatically accelerated multi-year technology adoption and disruption trends. Remote work, e-commerce and digital payments helped spur a faster rebound in output and jobs by mid and, especially, late 2020, albeit in lop-sided or "K-shaped" fashion. Immense direct income support programs dwarfed the historic plunge in employment income from job losses while wage subsidies helped limit job losses and decreases in work income. Fiscal and monetary support plus technology were vital to an early recovery. They boosted the economy's resiliency in subsequent COVID-19 waves in late 2020 and 1H2021 as robust growth resumed each time after restrictions eased.

By 2H2021, Canada's growth and employment recovery was faster and stronger than any rebound of the past four decades (Charts 3 and 4). Moreover, as Canada reached this mid-to-late transition phase from COVID-19's economic crisis, fundamental differences with previous recoveries were clearly evident. Key structural distinctions began with excess demand for labour in many industries. Serious worker shortages were evident in a range of sectors by mid 2021.[13] They created increasing risks of future price pressures from production constraints, rising wages and wage expectations. These risks merited emphasis given the inadequate supply of skilled labour in professional services, manufacturing, construction, healthcare and technology before COVID-19.[14]

3.2 Overheated Housing Markets – In contrast to every other post-WWII recession, housing prices rose rapidly within a few months of the acute economic crisis in March – April 2020 (Chart 5), and continued to soar through mid 2021. Surging house prices were all the more remarkable given the sharp drop in immigration with COVID-19 border restrictions in 2020. The rapid ascent in house prices also started from elevated price levels prior to the pandemic that presented significant affordability issues and excessive leverage risks for many potential buyers.

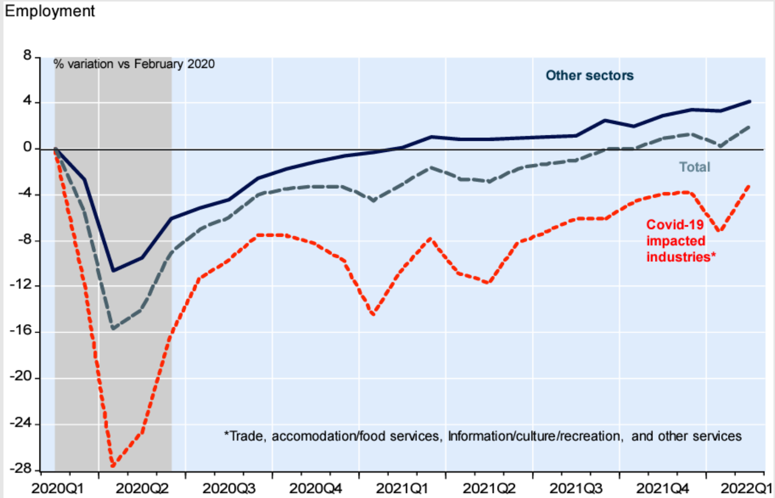
Assessing the drivers of housing demand and supply is a complex task, especially with housing's role both as an essential good in providing shelter and as an asset for owners. A diverse set of factors shape housing prices, but pandemic-specific increases to demand bear emphasis. The opportunity and need for remote work driven by

Chart 3: Canadian Real GDP Rebounds from Peak Pre-Recessions since 1980



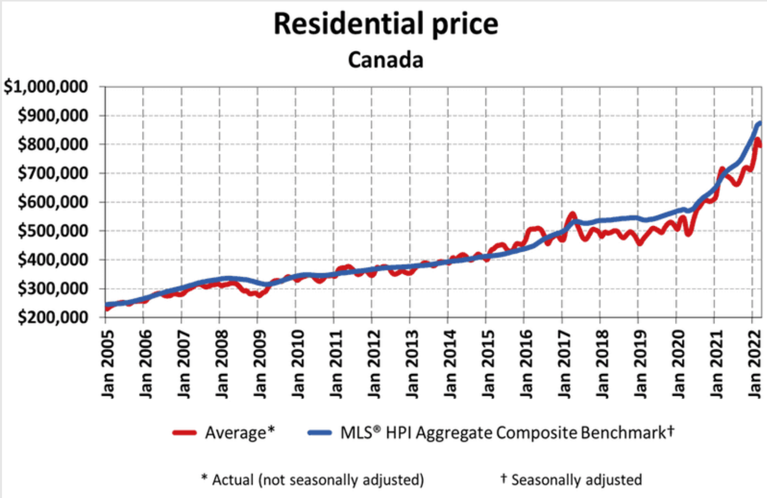
Source: *NBF Economy and Strategy (data via Bloomberg and Statistics Canada)*

Chart 4: Canadian Employment during 2020-Early 2022



Source: *NBF Economics and Strategy (data via Statistics Canada)*

Chart 5: Soaring House Prices Post-Pandemic Economic Crisis



Source: *The Canadian Real Estate Association*

COVID-19, and demand for more home space during activity restrictions, worsened the longstanding demand-supply imbalance from secular demand drivers (e.g., household formation, immigration) and existing supply-side constraints. Other pandemic-induced increases in housing demand included double-digit savings levels and the often-limited scope for consumption of expensive services such as travel in 2020 and 2021.

Near-zero policy rates and large provisions of liquidity substantially amplified these structural and pandemic-related factors. Improved affordability from ultra-low mortgage rates underpinned the unprecedented surge in house prices. As a major Canadian bank in March 2021 wrote, "Now, fuel has been poured on the [housing] fire in quantity. Record-low interest rates have lowered mortgage costs, and central bank guidance is cementing expectations that there is little to stop prices from moving higher."[15] Other leading Canadian banks highlighted that 2Q2021 saw the highest quarterly increase in mortgage credit since tracking began in 1990, and the strongest rise on record in the key household debt-to-disposable income ratio.[16] In sum, housing markets were clearly overheated by mid 2021.

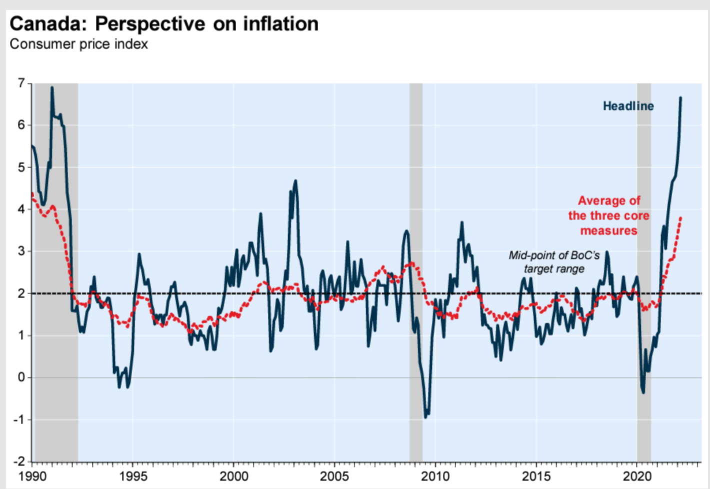
3.3 Inflation's Return – Canadian inflation had been well contained during the two decades before COVID-19, averaging less than 2 percent annually. Moreover, the severity of Canada's recession in March – April 2020 initially created the serious risk of deflation as the rapid plunge in demand substantially exceeded a simultaneous drop in supply. The early months of the pandemic were marked by lower and/or falling prices for some key goods and services.

Yet, inflation's turnaround by mid 2021 was remarkable and swift. By August, the Consumer Price Index (CPI) had surged by 4.1 percent from 12 months earlier. It was the highest rate in 18 years (Chart 6), and fourth time in five months that CPI inflation exceeded consensus forecasts.

Pandemic-specific and structural factors were drivers of inflation's return. Canada's enormous fiscal and monetary support fuelled consumer and business incomes while COVID-19 activity restrictions created much higher demand for goods and far less for many services. This reflected the global demand shift toward goods that coincided with pandemic-related disruptions to international supply chains, resulting in price pressures across an array of goods (e.g., semi-conductors) and services (e.g., shipping). Commodity prices jumped higher in 2021, led by energy and food, boosting prices directly as consumer prices rose and, also, indirectly as higher input costs in the production of other goods and services as well as transportation. With many businesses facing labour shortages and having to raise wages, this powerful mix of direct and indirect price pressures propelled inflation well above the BoC's 2 percent target.

The BoC's interest rate announcements of late April through September 2021 labelled inflation's rise as "temporary" or "transitory". The BoC initially focused on the base-year effects of low and negative CPI readings from the corresponding months one year earlier, when various goods and services prices fell early in the pandemic. The BoC expected the effects of higher gasoline prices and pandemic-related supply bottlenecks to be short-lived with its view that significant excess capacity in the economy continued and "extraordinary monetary support" was necessary. The BoC's preferred measures of core inflation showed less pressure than the overall CPI. It forecast a return to the 1-3 percent inflation target range after temporary factors abated, and for prices

Chart 6: Canada's CPI and Core CPI Measures



Source: *NBF Economics and Strategy (data via Statistics Canada)* then to rise at the 2 percent level as economic slack was absorbed.

Yet, by 2H2021, numerous private sector economists had strongly different views of inflation's path and the associated risks. They stressed that rising price pressures were also shown by three and six-month moving averages that did not have the base-year effect problem. They cited double-digit personal savings levels, extraordinary ongoing income support programs of governments, strong employment gains in sectors not affected by activity restrictions, and increasing labour shortages in these industries. Canada's CPI was understating inflation given the absence of used-car prices in the index and other considerations.[17] As important, global disinflationary factors that suppressed price pressures during the three decades prior to the pandemic were changing. While technology advances looked set to continue to exert their long-run disinflationary impacts, observers predicted higher inflation from the structural reversal of the excess global labour supply, prospective lessening of globalization of production, and a pending end to the oversupply of global savings that characterized the 1980s through 2010s.[18]

3.4 Belated Recognition and Adjustment – The BoC's description and view of inflation changed in October 2021, stating the "main forces pushing up prices – higher energy prices and pandemic-related supply bottlenecks – now appear to be stronger and more persistent than expected." While "closely watching inflation expectations and labour costs to ensure that the temporary forces pushing up prices do not become embedded in ongoing inflation", the BoC reiterated its view of the economy's ongoing excess capacity, and the need for "considerable monetary policy support" to continue.

It merits highlighting that analysing the post-pandemic recovery was far from straightforward given the challenges of using historical experience with economic rebounds and the unique nature of historic shocks like the pandemic. Yet, the 2021 dichotomy between the BoC and many private sector economists over the timing and duration of these actual and prospective inflation trends supported the merits of caution in forecasts and policy stances. The policy question is why (i) inflation's rise to 2 percent-plus for core measures and 4 percent overall in mid 2021 and (ii) its forecast of only an eventual return to 2 percent did not prompt the BoC to reassess the need for further immense stimulus. Near-zero interest rates were amplifying ongoing labour shortages, overheated housing markets and the effects of continued huge fiscal demand stimulus. Given its goal of forward-looking policy and long lags in the impacts of policy changes, prudent policy risk management suggested starting in late 2021 to communicate a pending move to higher policy rates, and subsequently undertaking at least modest rate hikes.

One bank's recent study of BoC policy and inflation expectations concluded "as of late 2021, the Bank's priority should have been squarely on inflation", finding that inflation expectations had been completely de-anchored from the [BoC's] 2% target since late 2021". It concluded that the BoC "will need to be more aggressive to bring inflation back to target."[19] In the fall 2021, other analysts also recommended less monetary stimulus, highlighting the weaknesses of available quantitative measures of inflation expectations for policy given little evidence of their usefulness in signalling the trend of inflation expectations.[20] Concerns about the lack of clear indicators of inflation expectations and good theories about inflation pre-dated COVID-19. In late 2017, one former Fed Governor cited these issues in contending that policy should focus on observable data on wages and prices, and if inflation began to rise, raise rates more quickly.[21]

By January 2022, the state of the economy, housing markets and inflation were supportive of ending near-zero interest rates and the overdue move to QT. Many financial market economists, as well as leading think tanks such as the C.D. Howe Institute, called for this reversal of stimulus to start.[22] Yet, the BoC's January 2022 interest rate decision maintained the near-zero policy rate despite its press release stating that a broad set of measures indicated, "economic slack is absorbed". While it removed its ultra-low rate forward guidance since July 2020, the BoC understatedly noted that rates "will need to increase", with "the timing and pace of those increases guided by the Bank's commitment to achieving the 2% inflation target." It deferred QT. The BoC waited until early March 2020 to raise its policy rate by 25 basis points (bps), yet cited CPI inflation at 5.1 per cent, and said that "economic slack has been absorbed" while housing activity was more elevated. Its gradual tone in messaging in early March 2022 included that the timing of QT was still being considered. Moreover, while stating that the BoC expected that interest rates would need to rise further, it reiterated that the timing and pace would be functions of its economic assessment and its 2 percent inflation target commitment.

4. THE NARROW PATH TO SUCCESSFUL POLICY NORMALIZATION IN 2022 & BEYOND

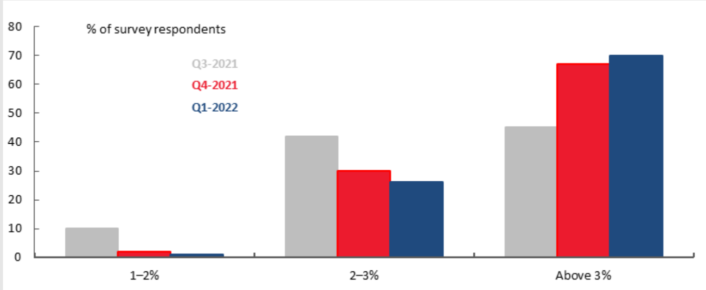
4.1 An Accelerated Pivot: Implementing QT and Increasing the Pace and Size of Rate Hikes The BoC's approach underwent a sea change in late March 2022, signalling that it was prepared to act "forcefully" to return inflation to the 2 percent target. Its messaging became more assertive in highlighting broadening price pressures, and that "inflation in Canada is too high, labour markets are tight and there is considerable momentum in demand."[23] In mid April, the BoC moved decisively from its initial gradualist approach to unwinding monetary stimulus. It raised policy rates by 50 bps, the first time in 20 years for this size of increase, and announced that QT would begin in late April. The BoC's pivot to a faster reversal of stimulus included strong guidance reiterating that "interest rates will need to rise further", and pointedly stating the economy is "moving into excess demand" and inflation is "persisting well above target."

The BoC's accelerated shift to front-loading rate hikes included signalling the potential for large future increases of 50 bps or more to enable policy rates to better contain inflation and inflation expectations.[24] Significantly, the BoC raised its estimate of the neutral nominal policy rate (the rate at which the economy is supported at maximum output or full employment without inflation accelerating) to 2.0 – 3.0 percent. It left the door open to take policy rates above this level to bring supply and demand back into balance and inflation to its target.

With accelerated policy rate hikes and more forceful guidance, the BoC faces numerous and wide-ranging issues and risks in engineering a soft landing. They begin with the reality that the two policy rate hikes and modest QT through April have only lessened the BoC's highly stimulative monetary setting. While the BoC's, and especially the Fed's, forward guidance led to a rapid and volatile back-up in bond yields in early 2022, much higher policy rate levels and potentially greater QT will be required to actually tighten policy. It may be necessary to exceed the long-run neutral rate to reverse the undesired impacts of prolonged stimulus and help contain inflation and house prices. Various major headwinds to growth are arrayed against these upward pressures. They create the risk of excessive tightening, while others generate material uncertainty. Taken together, the BoC has a narrow path to successful policy normalization.

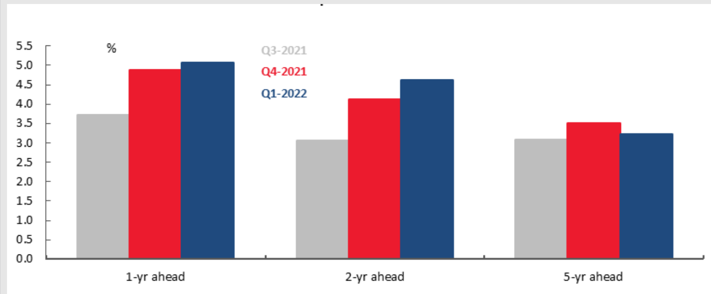
4.2 Upward Rate Pressures – Canada's annual CPI **inflation** reached 5.7 percent even before the Ukraine War began, and soared further to 6.7 percent in March 2022. Broadening inflation pressures in March included service prices rising 4.3 % and the CPI, excluding food and energy, up by 4.4% from one year ago. The overall CPI and the BoC's preferred core inflation measures have decisively broken out of their low absolute ranges of the past two decades (Chart 6). Existing supply constraints continued to push up prices in early 2022 while the Ukraine War has caused energy and food costs to surge. With Canada's output gap closing, wage and price pressures are rising. Robust demand continues with employment and GDP above pre-pandemic levels, and high levels of personal savings. **Inflation expectations** in the BoC's business outlook and consumer surveys (Charts 7 and 8) confirm corporate and consumer views that prices will remain well above the 2 percent target during 2022 and 2023. Front-loading rate hikes and QT are vital to prevent wage and price expectations from increasing well above the 3 percent level on a prolonged basis.

Chart 7: Canadian Businesses Expect Inflation to Surpass BoC's Target



Source: *Scotiabank Economics, Bank of Canada*

Chart 8: Canadian Consumers Expect a Sustained Inflation Overshoot

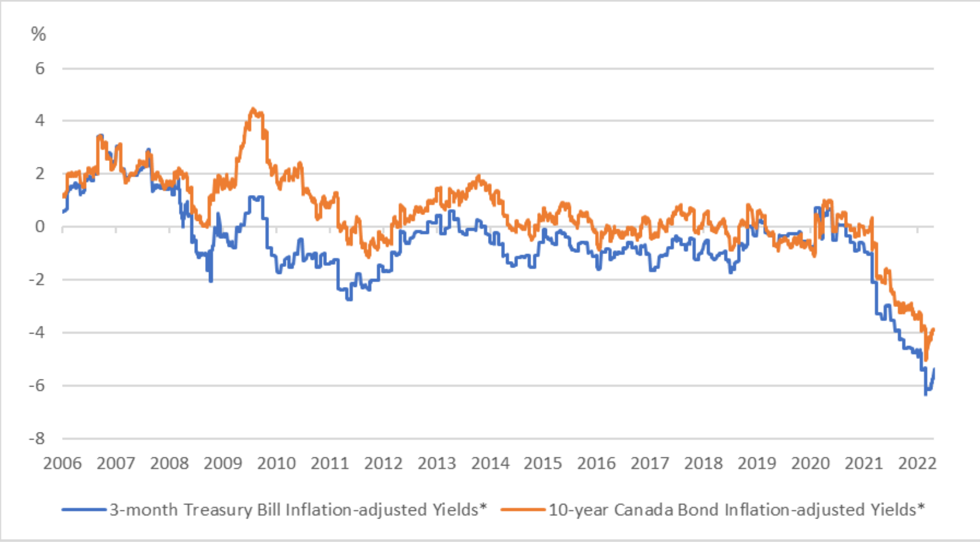


Source: *Scotiabank Economics, Bank of Canada*

BoC policy in early 2022 remained highly stimulative with policy rates in real terms (policy rates minus inflation or inflation expectations) at deeply negative levels (Chart 9). Policy rates will need to rise substantially to achieve positive **real yields**. In debt markets, even as nominal bond yields surged to multi-year highs with the sharp selloff through April, inflation-adjusted Canada bond yields also continued to be negative. The BoC's start of QT will mean maturing Canada bond holdings will not be reinvested but the runoff of its holdings will still leave the BoC's balance sheet well above pre-pandemic levels (Chart 10). Part of this higher ongoing level of holdings reflects the BoC's secular need for larger Canada bond positions to enhance debt markets' functioning and liquidity. Yet, it is an open question as to what the optimal balance sheet level will be for BoC's future holdings in normal economic and market conditions. Other issues include what policy rate and Canada bond holdings are conducive to supporting sufficient term premiums for investors in medium and longer-maturity Canada bonds. This would help address the inadequate premiums and intertemporal distortions to investment since the GFC.

The price surge of over 50% (Chart 5) in **house prices** since the pandemic's economic contraction makes higher financing costs important to restrain future debt leverage and change house price expectations. Mortgage rates in late April 2022 in the 3.25-to-3.75 percent area for two-to-five year terms remained below current inflation and consumer inflation expectations. Household debt levels on an absolute basis (Chart 11), and as a percentage of disposable income, reached new heights in early 2022

Chart 9: 3-month Treasury Bill & 10-year Canada Bond Inflation-Adjusted Yields

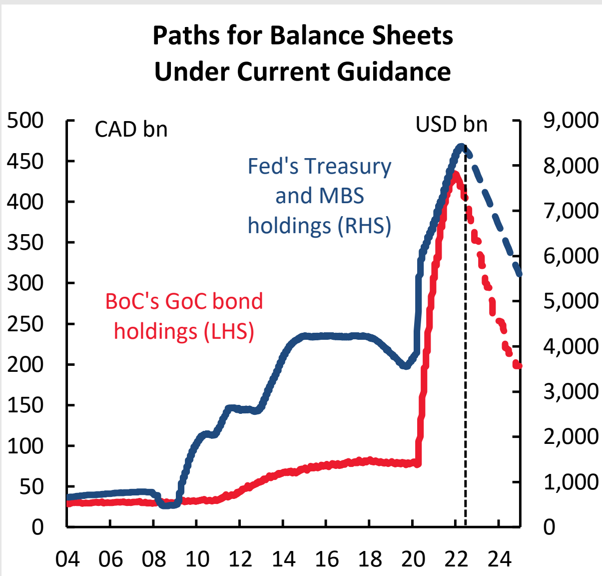


Source: *Bank of Canada data*
**The monthly all-item CPI percentage change from 1-year ago is used to derive inflation-adjusted yields. Last data: April 27, 2022*

(Chart 12) from levels already warranting policy measures. Expectations of ongoing large price increases, including the "Fear of Missing Out", fuelled buying excesses through early 2022. From a longer-term growth and productivity perspective, the merits of ending negative real mortgage rates with higher BoC policy rates are notable. They include the impact of ultra-low mortgage costs as one of the policy distortions that led residential investment to a higher GDP share than business capital spending.[25]

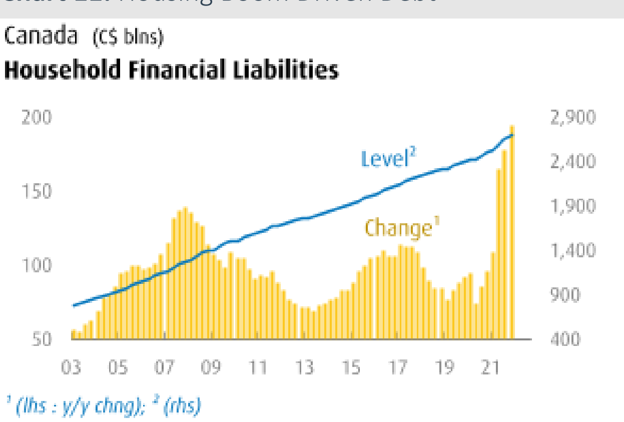
Forward guidance of the BoC and, especially, the Fed was impressively effective in resetting **investor expectations** in early 2022. Substantially higher government bond yields, a flatter yield curve, and wider credit spreads have resulted. Equity market sectors dependent upon ultra-low

Chart 10: Bank of Canada QE and Projected QT



Source: *Scotiabank Economics, NY Federal Reserve, Bank of Canada*

Chart 11: Housing Boom Driven Debt



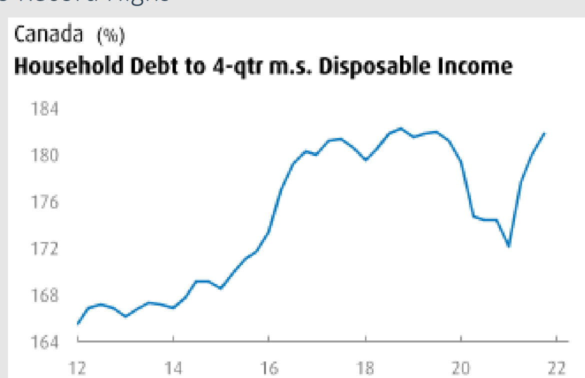
Source: *BMO Economics, Haver Analytics*

yields have been re-valued in volatile fashion. Yet, many investors still expect both central banks to succumb to future equity market weakness and other asset value pressures before policy rates reach much higher yields. The benefits of the BoC (and the Fed) staying the course with policy rate hikes and QT include helping address market perceptions and the risk to financial stability that policy will always offer uber liquidity and minimal or negative real yields

Front-loading rate hikes and QT will also help **reduce Canada's vulnerability to future shocks,** and preserve the BoC's interest rate and balance sheet room to counter future downturns and/or recessions. While few in the west predicted the Ukraine War, greater susceptibility to adverse economic developments is among the repercussions of delayed reversal of monetary stimulus. It also risks the premature reliance upon ultra-easy policy when shocks occur, with increased side effects. Accordingly, effective policy normalization includes restoring the interest rate room and QE capacity to address future periods of economic stress and/or severe financial market strains. Among the lessons of the pandemic was the inadequate room to cut interest rates to support growth and financial markets when the economic shock occurred. The starting policy rate level of 1.75 percent meant the rapid reduction of 150 bps in March 2020 was insufficient to bolster debt markets and meet other credit needs.

The BoC's accelerated monetary restraint is occurring when the competitiveness risks of CDN$: US$ exchange rate appreciation are much less. Soaring commodity prices have led to surging revenues and exports for

Chart 12: Household Debt to Disposable Income Back to Record Highs



Source: *BMO Economics, Haver Analytics*

Canadian resource firms. Yet, the Canadian dollar, in early 2022, remained far below what the dramatic improvement in the terms of trade would traditionally have generated in increases versus the US dollar.[26] If the BoC had started normalizing policy in late 2021, as outlined above, the potential for a rising Canadian dollar could have been material given the sharp divergence versus the Fed's stance. Over the course of early 2022, however, the Fed's forward guidance became more forceful, signalling the potential for multiple rate hikes, and willingness to raise the Fed Funds rate above the neutral setting if necessary to contain U.S. inflation. In early May, the Fed hiked by 50 bps and announced large-scale QT. The Fed's tougher messaging, larger rate hikes and QT have lessened the CDN$ appreciation risk.

***4.3 Growth Headwinds and Risks of Excessive Tightening* –** In seeking a soft landing to contain inflation, the BoC's accelerated policy shift in early 2022 began in an environment of excess demand, high personal savings levels, improved wage gains since mid 2021, and solid incentives for business investment to meet short term (inventory) and longer-term needs (e.g., digital, supply chains). With commodity sectors comprising a significant share of its GDP, Canada has growth and terms of trade advantages that neither Europe nor the US have. Despite these factors, the BoC has a narrow path to rein in inflation starting with the risks of a downturn/recession from global headwinds, and impacts of higher inflation and interest rates.

International headwinds begin with the seismic shift in geopolitics and the severe repercussions for global growth and inflation from the **Ukraine War**. The leap upwards in the prices of oil, natural gas, food and other commodities where Russia and Ukraine are leading or major producers creates the serious risk of recession in Europe. It prompted the World Bank and the International Monetary Fund in mid April to lop nearly a full percentage off their respective global growth forecasts for 2022. The Ukraine War's shock waves have combined with global supply chain problems and financial market volatility to cause a marked loss of overall growth momentum in composite indices that track advanced and emerging economies.[27]

In Canada, international and other factors are reducing **household purchasing power** and **consumer confidence**. Surging food and energy prices were equivalent to 75 bps of policy rate hikes in terms of reduced disposable personal income by April 2022.[28] Higher inflation, rising interest rates, and uncertainty about the Ukraine War's impacts, led Canadian consumer confidence, while still strong, to a 14-month low in March 2022.[29] High levels of household indebtedness in absolute terms and relative to disposable income mean that the BoC will want to avoid raising borrowing costs to levels that trigger large decreases in consumption outlays of indebted households and substantial declines in house prices. In **financial markets**, the BoC's ongoing monitoring for indicators of stress will be important as it tightens to help prevent abrupt deteriorations in conditions if the desired soft landing threatens to become a hard fall.

All of this presumes that there are no additional and/or greater economic and other shocks from the Ukraine War, a new COVID-19 variant, or other sources of systemic challenges from known or unknown unknowns.

***4.4 Uncertainty in Modeling the Economy, Inflation Expectations and Neutral Policy Rates* –** the fundamental challenges of economic models in measuring and predicting inflation expectations and neutral policy rates further complicate the BoC's narrow path to successful policy normalization. Among the pandemic's most important lessons are the difficulties of forecasting and increased need to incorporate caution in central bank outlooks during crises. The limits of modelling accuracy and policy certainty in times of shocks have been increasingly evident since the GFC.[30] Crises compound the increasing uncertainty in modelling economies and financial markets as complex, adaptive systems in recent decades.[31] Unstable relationships among key variables are a recurring problem in macroeconomics.[32] For its part, the BoC has acknowledged modelling and forecast difficulties from global and domestic supply chain problems, and technology's advances in boosting demand during COVID-19.[33] Leading analysts have recommended more humility in gauging inflation expectations specifically, and in presuming the success of prolonged ultra-low interest rates and QE generally.[34]

Finally, caution is also warranted in modelling and predicting future neutral policy rates. The difficulty in gauging neutral rates is that these cannot be observed, but must instead be inferred. The BoC's April 2022 increase in its projected range of neutral policy rates reflects its assessment of higher global neutral rates that have raised Canada's neutral rate. The risk is that this upward adjustment is insufficient given the structural changes in global inflation factors and much greater Canadian demand for funds versus the supply relative to the 1990s-2010s.

Changes in fundamental international factors may raise the neutral rate above, potentially significantly, the BoC's new higher range. These structural changes include seismic geopolitical shocks (Ukraine War), deep strains in global finance (sanctions on Russia), ongoing serious trade issues (U.S.-China disputes), reduced globalization of production overall and its reversal in selected key industries, and the end to the excess labour supply globally of the previous three decades. In terms of the supply of funds, critical global trends include the end this decade to the excess global savings that helped keep interest rates low during the 1990s through 2010s.

Domestically, upward pressure from the expected much greater demand for funds warrants emphasis and brief elaboration. Canada entered the pandemic having underinvested in its physical infrastructure for several decades and, more recently, with inadequate outlays on its digital infrastructure. Adverse climate, health, and military events together with new social equity goals in 2020 and 2021 have dramatically escalated public sector investment requirements. These new public sector funding pressures include those for much greater government support for adapting to and mitigating climate change, addressing capacity and resiliency issues in healthcare, increasing security spending in the wake of the Ukraine War, and expanding social safety net policies. Additional demand pressures are projected from business investment to address long-term supply chain issues, and to meet increasing digital and physical capital needs. The greater need for investment-- and consequent much larger projected borrowing by governments and corporations to fund these outlays-- will increase the upward pressure on the neutral policy rate.

CONCLUSION

This paper examined Canadian monetary policy during the pandemic to help assess the issues and risks in the BoC's policy normalization from extraordinary pandemic stimulus. The BoC's impressive and vital success with massive support during Canada's acute economic crisis was followed by too much QE and then maintaining QE and, more important, near-zero interest rates for too long. The BoC shifted markedly in late March-April 2022 from its gradual and reactive policy approach to a more active stance with accelerated policy rate hikes, more forceful forward guidance and QT. Yet, its path to successfully unwind ultra-easy policy is narrow and challenging. Achieving a soft landing will require sufficient rate hikes and QT to address multi-decade highs in inflation and housing prices without increasing rates excessively such that a sharp downturn or recession is triggered.

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