In Focus

Economics and Strategy



January 30, 2025

Tallying tariffs: Growth gaps, bruised budgets & soft(er) spreads

By Warren Lovely & Ethan Currie

Intro: Despite an inauguration-day reprieve, the threat of U.S. tariffs hangs over Canada yet. February 1st is the (latest) date most everyone has circled on the calendar north of the border. Until then (and perhaps beyond), downside risk assessment remains the name of the game.

There's much guesswork surrounding the potential fallout from a U.S.-Canada trade war. Let's concede that the precise nature of the GDP, employment and inflation impacts hinge on the magnitude, scope and persistence of any tariff hit. By the same token, the extent and nature of prospective retaliation matters much, as does the degree to which relief is rushed to consumers and affected workers/sectors. The appropriate monetary policy response is also open to interpretation. All this implies a wide range of potential economic outcomes/impacts.

Notwithstanding exceptional uncertainty, it may be informative to explore a reasonable range of potential fiscal implications for Canadian governments in a tariff scenario. As you will see, there are more than a few ways to stress-test governments. Without invalidating the following analysis, we emphasize that estimated impacts could evolve substantially and rapidly. There really is much to bear in mind...

Federal-provincial budgets are based on the prevailing consensus economic forecast (which is never static)

In putting potential tariff-related fallout in perspective, it is important to understand how much growth Canadian governments had been expecting. There was а broad-based expectation stronger/quicker GDP growth starting in 2025, which was a partial nod to the interest rate cuts the Bank of Canada delivered last year. Moreover, it is important to recognize that a government's economic planning assumptions reflect the prevailing private sector forecast. If growth ends up deviating from planning projections, it's because the consensus forecast missed the mark. (Private sector forecasters, for their part, are surely preparing to lay the blame for any downside misses in Canadian growth at President Trump's feet.)

NBC's baseline forecast still foresees modestly positive growth for Canada (although uncertainty is elevated)

Private sector forecasters haven't totally capitulated on growth. At least not yet. The consensus envisions 1.7-1.8% real GDP growth for Canada this year. The BoC's new baseline (with no tariffs) falls in this range (1.8%). The IMF, in a necent update, was a bit more optimistic. At NBC, the pre-existing baseline forecast built in 1.4% real GDP growth in 2025, followed by 1.5% advance in 2026. Even securing our sub-consensus gain (if still possible) wouldn't be the end of the world given decelerating population growth. But risks are skewed lower, perhaps materially so. Let's see how the picture evolves post February 1st, assuming there's some clarity on the tariff front.

> The 2018-19 tariff spat didn't break Canada's economy (but we're simulating something more sinister here)

There's a certain déjà vu to U.S. tariff threats. Back in 2018, President Trump (by then comfortably ensconced in the White House) wielded the tariff stick on Canadian steel and aluminum. Canada retaliated. There

was also some high-pressure negotiating tactics by the U.S. administration (remember Robert Lighthizer?) as the NAFTA was replaced by the USMCA. That new trade deal was inked in late 2018, with Canada and the U.S. agreeing to lift tariffs in spring 2019. While there were many uncomfortable days during this period, Canada's domestic economy managed to hold up reasonably well, as judged by the national employment rate and real GDP growth; well enough that the Bank of Canada continued to gradually remove monetary policy stimulus in 2018. Don't take too much comfort from this. At best, it suggests that a short-lived and narrowly focused tariff fight might not jeopardize too much growth. Without being alarmist, we are attempting to simulate a more significant and longer-lasting event.

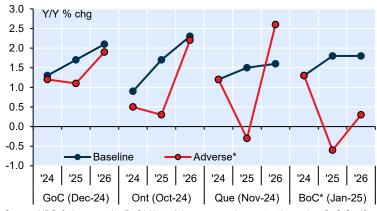
> The precise economic hit from a tariff war is hard to pin down (but the direction for GDP growth is at least clear enough)

It's tricky to pinpoint the potential damage arising from a sustained tariff war. We highlighted an earlier Bank of Canada study warning of a 6% GDP pullback from a global trade war with full retaliation. Consider this a worst-case scenario. A comparatively 'limited' trade war, with some degree of retaliation, might result in a less-egregious but still-significant hit to Canadian real GDP of somewhere around 3%-pts (jump to page 2). That weakness could be spread over a couple of years. As noted, confidence bands are wide.

> Upside and downside scenarios are today more common (even if the approach and definitions lack uniformity)

Owing to the level of uncertainty that has characterized economic thinking since COVID first arrived, **some Canadian governments have been presenting alternative economic scenarios** in budgets and/or updates. While informative, these scenarios are open to a degree of interpretation. They are generated at different moments in time. Nor is a wholly uniform approach adopted from one government to another. And to be clear, the adverse scenarios presented in some federal-provincial fall updates weren't designed to specifically model a Canada-U.S. trade war, as should become apparent (Chart 1).

Chart 1: Examples of alternative scenarios from fall updates
Baseline & adverse scenarios for real GDP growth: 2024 fall updates



Source: NBC, fed-prov gov'ts, BoC | Note: Adverse scenario construction varies; GoC/Ont/Que scenarios from FES; BoC is more recent tariff scenario using "benchmark calibration"



Ottawa's 'downside scenario' not consistent with a trade war (with provinces modeling sharper near-term impacts)

How much of a hit do government scenarios conceive of? It varies. Ottawa's December <u>FES</u> included a 'downside scenario' that clips 2025 real GDP by a cumulative 0.7%-pts and adds 0.4%-pts to this year's unemployment rate. This scenario incorporates lower GDP inflation, compounding the damage to nominal tax bases. While the impacts embedded in Ottawa's adverse scenario are not insignificant, the damage to real GDP could easily be more severe in a tariff war.

While not fully designed to capture a trade war, the downside scenarios laid out in some provincial updates build in more pressure... at least up front. A 'slower growth' scenario in Ontario's FES (arriving before the U.S. election) marks 2025 provincial real GDP down by 1.8%-pts vs. the planning projection (controlling for a weaker handoff). But the slowdown lasts just one year. Quebec's 'recession scenario' in a November update likewise lops 1.8%-pts from 2025 GDP vs. baseline, the damage partially recouped in 2026. Alberta's alternative outlooks (rightly) key on oil prices, where a 'low price' scenario (from Budget) put the year one hit to real GDP at 1.4%-pts, with nominal output weighed down much more seriously.

Calibrated specifically to the issue at hand, British Columbia's <u>'tariff scenario'</u> suggests provincial real GDP could contract in both 2025 and 2026. As for the Bank of Canada, a new <u>MPR</u> devotes much space to tariff-related simulations. Under a so-called 'benchmark calibration' the BoC puts the hit to real GDP at 2.4%-pts in year one, with a further 1.5%-pts lost in year two. Our own scenario analysis had earlier identified a broadly similar two-year impact (Chart 2).

Chart 2: Cumulative damage attached to varied scenarios

Cumulative change in real GDP: Baseline vs. select adverse scenarios

Source: NBC, fed-prov gov'ts, BoC | Note: Adverse scenarios are not all intended to model a trade war; BoC is "benchmark calibration"; NBC is illustration of one trade war scenario

2026

Budgetary prudence can be explicitly built in (by some and in varying forms/degrees)

Before translating potential economic damage into budgetary dollars and cents, a word on prudence. While the feds earlier abandoned the contingency reserve concept, many provinces opt for what is ostensibly fiscal insurance on a normal-course basis. This variously takes the form of GDP growth adjustments, reserves, forecast allowances, revenue buffers and/or spending contingencies.

Under normal circumstances, embedded prudence lessens downside fiscal risks for the provincial sector, though a serious tariff war would surely strain even the most conservative of planning assumptions.

> There's long-standing disclosure of select fiscal sensitivities (where interpretation is admittedly nuanced)

The federal government and some provinces have long published official fiscal sensitivities. Theoretically, sensitivities allow us to gauge what a given 'surprise' in growth, interest rates, commodity prices or the exchange rate might mean for government finances. There's plenty of nuance here, however, including the classic simplifying assumption that 'all else is equal'. In reality, the dynamic interplay between key economic variables complicates the calculus. Moreover, there may be some difficulty/risk in extrapolating a given sensitivity for a more serious stress event, since economic-fiscal relationships may not evolve in linear fashion.

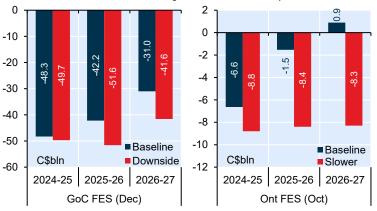
Downside budget scenarios take some guesswork out of the equation (but aren't comprehensive, with grossing up needed)

Some governments disclose what a given alternative economic scenario means for the budget balance. But since scenarios differ in their construction, so too does the interpretation of related budgetary bruising. Of note, the extent to which economic pressure persists has material bearing on the amount of fiscal scarring.

Even in **Ottawa's comparatively limited 'downside scenario'**, \$9.4-10.6 billion gets added to the annual federal deficit in the coming two fiscal years (Chart 3). Imagine the first-order budgetary impacts if the hit to real GDP was twice (or three times) as large in a legit trade war. The underlying federal deficit could well double by 2026-27 on economic impacts alone, that is before tariff relief/redistribution effects.

Chart 3: Budgetary scenarios to extrapolate from?

Baseline & adverse scenarios for budget balance: 2024 fall updates



Source: NBC, fed-prov gov'ts | Note: Above are two examples of adverse scenarios (from fall updates) that were not fully intended to model a trade war

Rules of thumb for provincial exposure can be inferred from 'base' vs. 'shock' gaps in real GDP and budget balances. Taking Ontario, Quebec and British Columbia estimates at face value, an abrupt economic slowdown might cost the provincial sector \$7-10 billion per percentage point of real GDP (in the first full year). Being mindful of our earlier warning on extrapolation, could a 2-3%-pt hickey on real GDP rob the provinces of \$15-30 billion (vs. baseline)? Quite possibly. We're clearly weary of false precision, but serious revenue damage could accrue quickly at both levels of government.

Another simplistic approach puts federal-provincial revenue risks in perspective (if you still needed convincing)

Canada's federal and provincial levels of government collect roughly \$500 billion in own-source revenue... each (Chart 4). You obviously don't need to multiply one trillion dollars of combined fed-prov own-source revenue by a particularly large factor to create a serious fiscal hole. Governments weren't exactly planning for heroic

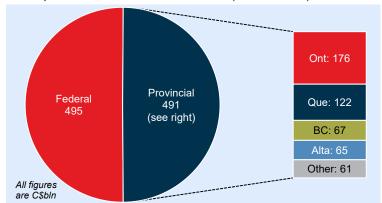
2025 (incl. base effects)



gains in own-source receipts in 2025-26; we're nonetheless mindful that past recessions and/or economic slumps often threw own-source revenue growth into a much lower gear if not into reverse.

Chart 4: Almost \$1 trillion of own-source revenue in focus

Federal-provincial own-source revenue: 2024-25 (latest estimates)



Source: NBC, fed-prov gov'ts | Note: Based on latest official updates; federal refers to total revenue; for provinces, own-source is total revenue less federal transfers

Budget scenario impacts tend to focus on the revenue hit (with interest costs also generally controlled for)

Fiscal sensitivities and alternative scenarios focus primarily on revenue impacts. That reflects the reasonably direct linkage between economic activity (jobs, income, profits, consumption) and own-source revenue streams. Beyond revenue, official scenarios also seek to control for marginal debt servicing impacts, typically employing the assumption that GDP weakness results in lower interest rates and greater debt affordability (all else equal). There's much debate over the tariff-inflation-monetary policy reaction function in a trade war. We assume that the economic destruction caused by a tariff fight would ultimately leave the BoC policy rate no higher (quite likely lower), conceding that inflation fears (if realized) could reduce central bank leeway. Regardless, revenue pressure is expected to swamp debt service impacts in a tariff scenario. Vitally though, we can't lose sight of marginal government relief to aid a distressed economy...

Expenditure impacts are a more open-ended question (though reactions to past economic shocks are telling)

Hard(er) to pin down is the outlook for non-interest expenditures in a tariff scenario. Looking back, the federal government stepped in with supports in 2018 after the U.S. applied tariffs on Canadian steel and aluminum and the country retaliated. More generally, the empirical record shows a tendency for program spending to accelerate sharply during economic slumps.

Beyond the automatic stabilizers that kick in when growth swoons, governments would seek to lessen the hurt for families, workers, businesses and industries negatively affected by tariffs. Federal and provincial leaders have signalled as much, a joint statement pledging rapid deployment of "substantial resources that effectively mitigate economic impacts". There's been no attempt to walk this back in recent days. Rather, the feds are said to be considering pandemicstyle supports should U.S. tariffs be applied, though the currently prorogued parliament could jeopardize timely delivery.

British Columbia Premier Eby likewise invoked the idea of pandemic-level relief, seeing risks to the provincial economy as more serious than the 2008 recession. Ontario Premier Ford is sending provincial voters to the polls February 27th, his government seeking a clear mandate for the "tens of billions of dollars" in new investments that may be needed

(there being as many as 500K Ontario jobs on the line). This is but a taste of the action plans taking shape provincially, the situation fluid.

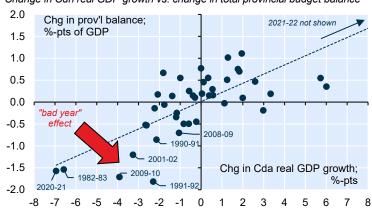
Retaliatory tariff revenue is unlikely to cover needed supports (if the 2018 episode is any guide)

Retaliatory tariffs imposed at Canada's border are set, administered and collected by the federal government. Based on the rumoured 'playbook' Canada is expected to follow in the event of U.S. tariffs, the feds could soon be collecting more excise taxes. The aforementioned federal-provincial statement indicates tariff revenue would be used to buttress damage. But **prospective revenue from retaliatory tariffs would likely be insufficient to cover needed relief**, to say nothing of the own-source revenue weakness linked to a soft(er) domestic economy. That was the lesson from the 2018 tariff fight, when Ottawa's incremental tariff revenue defrayed only a fraction of pledged action.

Revenue loss + extra spending = outsized impacts in tough economic years (this 'bad year' effect evident historically)

The combination of acute revenue weakness and counter-cyclical spending can amplify the impact on government budgets in particularly bad economic years (Chart 5). (Yes, a weakened denominator in the budget-to-GDP ratio plays a role too.) A simplified model building in this notional 'bad year' effect hints that shaving 2%-pts off real GDP rate in 2025 (for example) would not only put Canada's economy in recession but could add up to 1%-pts of GDP to the aggregate provincial deficit. Given today's ~\$3 trillion Canadian economy, we might be talking about adding up to \$30 billion to the annual shortfall in a painful tariff scenario. Note the provinces currently estimate a \$25 billion deficit for 2024-25. So we could test the pandemic-related peak for the combined provincial shortfall (\$54 billion) if things really do go badly. There are many caveats here, so treat this as an illustrative example. Beyond the GDP-revenue recalibrations outlined earlier, the extent of provincial participation in relief programming and the distribution of tariff revenue would need to be weighed.

Chart 5: Really bad years result in outsized fiscal damage Change in Cdn real GDP growth vs. change in total provincial budget balance



Source: NBC, fed-prov gov'ts, StatCan | Note: GDP growth on calendar year basis, provincial budget balances on fiscal year basis; 43Y sample inclusive of 1982-83 to 2024-25

> Any prospective federal budget impact would add to net GoC cash requirements (which were notable to begin with)

The pass through from potentially larger deficits to debt capital markets could be relatively straightforward, yet genuinely notable. Having drawn down much excess cash, the federal government was already poised to boost supply appreciably in 2025.

Absent a trade war, we had seen Ottawa's baseline fiscal projection as consistent with more than \$280 billion in gross GoC bond supply this calendar year. That's more like \$120 billion net of maturities or



nearly 4% of nominal GDP. This already hefty GoC bond program could vault higher in a tariff-induced recession scenario. For historical context, the prior high-water mark for gross GoC bond supply (calendar year basis) was ~\$320 billion when COVID landed in 2020. We could move up to (or even beyond) that level if 2%-pts (or more) of real GDP were to vanish. T-bills could serve as a funding shock absorber if cash is needed pronto. As always, notable shifts in Ottawa's borrowing strategy could have implications for the yield curve.

Up till now, non-resident investors have responded positively to Ottawa's net financing call, 2024 having delivered record foreign buying of GoC debt. With roughly 40% of GoC debt now held by non-residents, foreign attitudes are no trifling matter. Beyond the unfolding political drama in the nation's capital, a sharp budgetary erosion could force foreign investors to scrutinize the sovereign's credit profile, some of Canada's fiscal scorecard metrics already less than sterling.

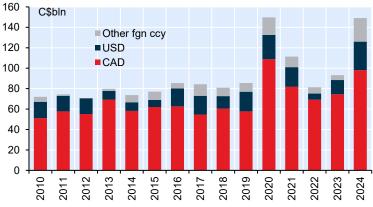
> A tariff war could mean record provincial issuance (bond supply not far from the high-water mark in 2024)

With a smaller aggregate deficit and less debt to roll over, provincial funding needs have been more contained vis-à-vis the feds. Assuming no trade war, underlying cash requirements might have been consistent with ~\$120 billion of gross provincial bond supply in calendar 2025 (all else equal). With the equivalent of \$80 billion maturing this year, the estimated increase in the provincial bond stock was to be a fraction of net GoC bond issuance. Saying that, budgetary damage linked to a tariff scenario would mean marginal borrowing in the provincial sector. Even if not fully calibrated to a trade war, Ontario's 'slower growth' scenario reinforces the close connection between extra budgetary red ink and incremental long-term borrowing needs.

The calendar year record for gross provincial bond supply? As with the feds, that was set in 2020, when the provinces jointly secured just under \$150 billion from all markets (domestic and international). A pre-funding push meant provinces came close to breaching that level last year (Chart 6). Either by extrapolating Ontario's borrowing scenario or by leveraging the broader fiscal impacts outlined previously, a sustained tariff fight could set the stage for unprecedented provincial bond supply as early as this calendar year. And provinces have not been shy to get the issuance ball rolling early in calendar 2025...

Chart 6: Perspective on provincial bond supply

Gross provincial bond supply by currency of issue: Calendar year basis



Source: NBC, BBG | Note: Gross marketable issues, converted to CAD at prevailing FX rate

Given the balance of risks, the rapid provi issuance pace we've seen makes sense (more than a few opting to pre-fund)

Taking advantage of heretofore-favourable market conditions and evident investor demand (at home and abroad) a number of provinces have wisely opted to pre-fund. The result has been a <u>record-setting</u>

pace of provincial issuance to start the new calendar year. We see this as a defensible risk mitigation strategy, given Canada's geopolitical, economic and fiscal world could be upended as early as February 1st. Should an adverse scenario play out, some of the extra cash that provinces would need might already be on board.

Normally, provinces tap international markets when borrowing needs pop up (but foreign attitudes could shift)

Provincial governments have historically leveraged international markets when borrowing needs step up notably/quickly. This is a provincial-specific extension of the shock-absorber theory advanced earlier. (Refer to Chart 6 again.) Diverting supply south or overseas can insulate the domestic market. But the corollary also holds. Serious erosion in the breadth and depth of the foreign bid for Canadian risk could require domestic investors to pick up extra slack (for provis sure but also perhaps our corporates).

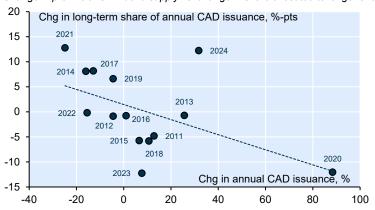
It's conceivable that foreign investor sentiment could shift in a sustained tariff fight, many apt to see Canada as having relatively more to lose through its outsized export sector and overt orientation towards the U.S. Given the composition of foreign currency outstandings, **the attitudes of U.S. dollar investors (wherever they reside) will be particularly important to monitor**. We have fielded a range of investor queries on Canada public sector risk since the U.S. tariff threat materialized.

Extra borrowing may require a pragmatic approach to bond placement on the curve (with scope to shorten if necessary)

In the same way that elevated provincial borrowing needs often result in a larger foreign currency funding share, **outsized requirements can** (in a defensive market) require more issuance to be placed in short(er) tenors (Chart 7). We saw this in 2020, when a record domestic bond crop saw longer-term deals account for their smallest share of new supply in the post-GFC era. In our opinion, **provinces have ample scope to shorten the weighted average term of new issuance (if necessary)**. After all, the established practice, in normal times, of locking-in much new debt for longer has left refi risk comparatively modest. Just look at how much domestic supply was successfully placed out the curve last year. So even in an adverse tariff scenario, provinces should retain a degree of borrowing flexibility, steering new issue supply where demand is deepest (even if it results in a temporary shortening of term and re-pricing of some credit curves). When brings us to the spread outlook...

Chart 7: Provinces could go short(er) if cash needs jump

Change in provincial CAD bond supply vs. change in share allocated to longer end



Source: NBC, BBG | Note: Based on gross marketable issues in CAD only; long-term defined as greater than 10Y; covers post GFC period (2010 to 2024 inclusive)



Economic, fiscal and borrowing uncertainty is not helpful for Canadian credit spreads (with 2018 again worth remembering)

Currency markets betray a degree of uneasiness towards the Canadian dollar. By comparison, Canada's high-grade credit spreads have been relatively well supported. But mounting uncertainty and tariff anxiety is hardly a tonic for credit investors. In short order, **provincial credit spreads could be destabilized by a serious trade war**. Granted, the extent, speed and duration of any pressure would be scaled to the economic/fiscal hit likely to be sustained. **Canadian corporate risk, notably for banks/financials, could also be re-assessed quickly.**

Reflecting on the 2018 experience—where the economic damage to Canada was, in the end, fairly contained—tit-for-tat tariffs and America's high-pressure negotiating tactics injected volatility into Canadian credit spreads. Starting 2018 inside of 60 bps, Ontario's 10-year constant maturity spread vs. the GoC curve traded in a ~12 bp range (60-72 bps) from March through September—a most contentious period for Canada-U.S. trade relations (Chart 8). Given the prevailing risk assessment, Ontario spreads came under relatively more pressure than the 10-province average during this window. The eventual USMCA deal failed to usher in tighter spreads. Rather, growing risk aversion saw credit markets weaken meaningfully in the waning stages of 2018, as anxiety over Fed policy mounted and as America took its trade fight to China. By the close of 2018, Ontario 10s (and a key U.S. 5-year credit index) topped 90 bps before a degree of calmness eventually returned.

Chart 8: Provi spreads during narrow 2018 trade fight

Ontario 10Y spread vs. GoC & relative basis to all other provinces



Source: NBC | Note: Based on daily NI indications; basis spread to Ont is simple average of remaining 9 provinces (where falling values imply relative spread tightening to Ont)

Be then prepared for non-trivial spread volatility should headline risks continue to buffet credit investors. Moreover, a comparatively larger trade fight could amplify the noise. Since tariff exposures/risks vary on both an inter- and intra-sector basis, there could be fresh scope for relative re-pricing. Liquidity could also become more highly valued if economic strain ultimately were to morph into financial system stress. And given the generalized utility of credit ratings as a valuation tool, rating agency opinions and analysis should be monitored closely. Rating agencies may well desire to 'rate through the cycle', but the prospective road ahead could be too bumpy to ignore. Food for thought.

There are more than a few other things to bear in mind (but off the top of our head...)

We repeat: **Much of this analysis is speculative in nature.** U.S. tariffs have not yet been applied; Canadian retaliation is (at this juncture) a hypothetical discussion. By design, this report is part of a risk assessment exercise. Moreover, the precise nature of the economic hit sustained by Canada in any tariff scenario is debatable; so too are the resulting fiscal impacts. We can't stress this enough.

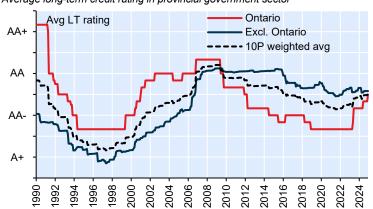
We're anxious (or is it nervous?) to see what February 1st brings on the tariff front (if anything). Saying that, the tough talk from President Trump (and his team) could well extend beyond the start of the month, presumably to be dialed up as the USMCA re-negotiations kick off in earnest. This is not the most favourable climate for attracting much-needed business investment to Canada, but we digress.

While our analysis has focused on the federal and provincial levels of government, the broader economic/fiscal/financial condition could have bearing on Canada's other public sector entities. Moreover, with potentially serious economic impacts (including job loss, income destruction, reduced spending/investment) there could be serious impacts for Canadian corporate risk too. This is beyond our intended scope but clearly important to bear in mind.

When it comes to potential budgetary fallout, the fiscal starting point for Canadian governments presumably matters. Even if the current federal administration has committed to a structural deficit, the long-term outlook for Ottawa's debt burden has been less worrisome (relative to some). The provincial sector, meanwhile, had been placed on a more sustainable footing in recent years, the weighted average provincial credit rating stronger today than it was before the pandemic (Chart 9). Certain provinces could then enter a prospective tariff-induced slowdown in relatively better shape than past recessions.

Chart 9: Provincial sector had put itself in better position

Average long-term credit rating in provincial government sector



Source: NBC, S&P, Moody's, DBRS | Note: Based on average of 3 credit rating scores for each province, controlling for 'positive' & 'negative' outlooks; population used to weight 10P avg

Even if a trade war is avoided, fiscal pressures on Canadian governments could nonetheless mount. For one, there's a sizeable fiscal price tag attached to Canada's NATO pledges. We'd note the growing calls to accelerate action on defense spending, partly to placate America. More detailed work on an accelerated military spend is needed, including an examination of how potential benefits could be maximized, along with how (and where) larger/accelerated outlays fit within existing fiscal frameworks.

While we're at it, structural reforms to restore Canada's relative tax competitiveness are another vital priority. Transformative, productivity enhancing and ideally nation-building infrastructure investments might also require government intervention (and financing). Good thing Canada's general government sector is better positioned than many advanced peers.

Tariffs or no, Canadian government leaders will have much to navigate in the days, weeks, months and years ahead. With so much at stake, voters surely need to have their say on the chosen path going forward. But in the meantime, it's over to you Mr. Trump.



Subscribe to our publications: NBC.EconomicsStrategy@nbc.ca - To contact us: 514-879-2529

Conoral

This Report was prepared by National Bank Financial, Inc. (NBF), (a Canadian investment dealer, member of CIRO), an indirect wholly owned subsidiary of National Bank of Canada. National Bank of Canada is a public company listed on the Toronto Stock Exchange.

The particulars contained herein were obtained from sources which we believe to be reliable but are not guaranteed by us and may be incomplete and may be subject to change without notice. The information is current as of the date of this document. Neither the author nor NBF assumes any obligation to update the information or advise on further developments relating to the topics or securities discussed. The opinions expressed are based upon the author(s) analysis and interpretation of these particulars and are not to be construed as a solicitation or offer to buy or sell the securities mentioned herein, and nothing in this Report constitutes a representation that any investment strategy or recommendation contained herein is suitable or appropriate to a recipient's individual circumstances. In all cases, investors should conduct their own investigation and analysis of such information before taking or omitting to take any action in relation to securities or markets that are analyzed in this Report. The Report alone is not intended to form the basis for an investment decision, or to replace any due diligence or analytical work required by you in making an investment decision.

This Report is for distribution only under such circumstances as may be permitted by applicable law. This Report is not directed at you if NBF or any affiliate distributing this Report is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that NBF is permitted to provide this Report to you under relevant legislation and regulations.

National Bank of Canada Financial Markets is a trade name used by National Bank Financial and National Bank of Canada Financial Inc.

Canadian Residents

NBF or its affiliates may engage in any trading strategies described herein for their own account or on a discretionary basis on behalf of certain clients and as market conditions change, may amend or change investment strategy including full and complete divestment. The trading interests of NBF and its affiliates may also be contrary to any opinions expressed in this Report.

NBF or its affiliates often act as financial advisor, agent or underwriter for certain issuers mentioned herein and may receive remuneration for its services. As well NBF and its affiliates and/or their officers, directors, representatives, associates, may have a position in the securities mentioned herein and may make purchases and/or sales of these securities from time to time in the open market or otherwise. NBF and its affiliates may make a market in securities mentioned in this Report. This Report may not be independent of the proprietary interests of NBF and its affiliates.

This Report is not considered a research product under Canadian law and regulation, and consequently is not governed by Canadian rules applicable to the publication and distribution of research Reports, including relevant restrictions or disclosures required to be included in research Reports.

UK Residents

This Report is a marketing document. This Report has not been prepared in accordance with EU legal requirements designed to promote the independence of investment research and it is not subject to any prohibition on dealing ahead of the dissemination of investment research. In respect of the distribution of this Report to UK residents, NBF has approved the contents (including, where necessary, for the purposes of Section 21(1) of the Financial Services and Markets Act 2000). This Report is for information purposes only and does not constitute a personal recommendation, or investment, legal or tax advice. NBF and/or its parent and/or any companies within or affiliates of the National Bank of Canada group and/or any of their directors, officers and employees may have or may have had interests or long or short positions in, and may at any time make purchases and/or sales as principal or agent, or may act or may have acted as market maker in the relevant investments or related investments discussed in this Report, or may act or have acted as investment and/or commercial banker with respect hereto. The value of investments, and the income derived from them, can go down as well as up and you may not get back the amount invested. Past performance is not a guide to future performance. If an investment is denominated in a foreign currency, rates of exchange may have an adverse effect on the value of the investments. Investments which are illiquid may be difficult to sell or realise; it may also be difficult to obtain reliable information about their value or the extent of the risks to which they are exposed. Certain transactions, including those involving futures, swaps, and other derivatives, give rise to substantial risk and are not suitable for all investors. The investments contained in this Report are not available to retail customers and this Report is not for distribution to retail clients (within the meaning of the rules of the Financial Conduct Authority). Persons who are retail clients should not act or rely u

This information is only for distribution to Eligible Counterparties and Professional Clients in the United Kingdom within the meaning of the rules of the Financial Conduct Authority. NBF is authorised and regulated by the Financial Conduct Authority and has its registered office at 70 St. Mary Axe, London, EC3A 8BE.

NBF is not authorised by the Prudential Regulation Authority and the Financial Conduct Authority to accept deposits in the United Kingdom.

EU Residents

With respect to the distribution of this report in the member states of the European Union ("EU") and the European Economic Area ("EEA") by NBC Paris, the contents of this report are for information purposes only and do not constitute investment advice, investment research, financial analysis or other forms of general recommendation relating to transactions in financial instruments within the meaning of Directive 2014/65/EU of the European Parliament and of the Council of 15 May 2014 ("MiFID 2"). This report is intended only for professional investors and eligible counterparties within the meaning of MiFID 2 and its contents have not been reviewed or approved by any EU/EEA authority. NBC Paris is an investment firm authorised by the French Prudential Control and Resolution Authority __ ("ACPR") to provide investment services in France and has passported its investment services throughout the EU/EEA under the freedom to provide services and has its registered office at 8 avenue Percier, 75008 Paris, France. "NBC Financial Markets, a subsidiary of National Bank of Canada" is a trade name used by NBC Paris S.A.

NBF is not authorised to provide investment services in the EU/EEA.

U.S. Residents

With respect to the distribution of this report in the United States of America, National Bank of Canada Financial Inc. ("NBCFI") which is regulated by the Financial Industry Regulatory Authority (FINRA) and a member of the Securities Investor Protection Corporation (SIPC), an affiliate of NBF, accepts responsibility for its contents, subject to any terms set out above. To make further inquiry related to this report, or to effect any transaction, United States residents should contact their NBCFI registered representative.

This report is not a research report and is intended for Major U.S. Institutional Investors only. This report is not subject to U.S. independence and disclosure standards applicable to research reports.

HK Residents

With respect to the distribution of this report in Hong Kong by NBC Financial Markets Asia Limited ("NBCFMA") which is licensed by the Securities and Futures Commission ("SFC") to conduct Type 1 (dealing in securities) and Type 3 (leveraged foreign exchange trading) regulated activities, the contents of this report are solely for informational purposes. It has not been approved by, reviewed by, verified by or filed with any regulator in Hong Kong. Nothing herein is a recommendation, advice, offer or solicitation to buy or sell a product or service, nor an official confirmation of any transaction. None of the products issuers, NBCFMA or its affiliates or other persons or entities named herein are obliged to notify you of changes to any information and none of the foregoing assume any loss suffered by you in reliance of such information.

The content of this report may contain information about investment products which are not authorized by SFC for offering to the public in Hong Kong and such information will only be available to, those persons who are Professional Investors (as defined in the Securities and Futures Ordinance of Hong Kong ("SFO")). If you are in any doubt as to your status you should consult a financial adviser or contact us. This material is not meant to be marketing materials and is not intended for public distribution. Please note that neither this material nor the product referred to is authorized for sale by SFC. Please refer to product prospectus for full details.

There may be conflicts of interest relating to NBCFMA or its affiliates' businesses. These activities and interests include potential multiple advisory, transactional and financial and other interests in securities and instruments that may be purchased or sold by NBCFMA or its affiliates, or in other investment vehicles which are managed by NBCFMA or its affiliates that may purchase or sell such securities and instruments.

No other entity within the National Bank of Canada group, including National Bank of Canada and National Bank Financial Inc, is licensed or registered with the SFC. Accordingly, such entities and their employees are not permitted and do not intend to: (i) carry on a business in any regulated activity in Hong Kong; (ii) hold themselves out as carrying on a business in any regulated activity in Hong Kong; or (iii) actively market their services to the Hong Kong public.

Copyright

This Report may not be reproduced in whole or in part, or further distributed or published or referred to in any manner whatsoever, nor may the information, opinions or conclusions contained in it be referred to without in each case the prior express written consent of NBF.