April 12, 2018

US & Canadian Monetary Policy & Capital Markets

- **The outlook for Federal Reserve policy over 2018–19 is unchanged. Two further hikes this year and two more next year are anticipated.**
- **Further Bank of Canada policy rate changes have been postponed compared to the prior forecast round. We anticipate two more hikes over 2018H2 and then three next year.**
- **Our view remains in favour of further curve flattening in both countries (charts 1–3, table 1) and a continuation of a significant Canadian rate advantage relative to Treasuries.**

BANK OF CANADA — UNCERTAIN PATH TOWARD AN UNCERTAIN ENDING

Scotiabank's house forecast calls for two more rate hikes over 2018H2 on the path toward a 2.5% rate that is forecast to be hit by the end of 2019.

There are three broad categories of uncertainty that need to be considered:

- One involves estimating the defining end-point or neutral rate for long-run policy tightening which will also inform the degree to which the policy rate may need to cumulatively adjust.
- Second involves an evaluation of the current and future steady state fundamentals in order to inform how quickly this end point could be reached. I'll briefly comment on these considerations but also refer the reader to the Canada section of this *Global Outlook* that discusses real side developments.
- Third is an assessment of trade policy and geopolitical risks that could continue to serve as overrides on the broad steady state fundamentals and the financial stability framework in ways that inform the policy rate path.

1. The Neutral Rate As Guidepost

First is the issue of where the end-point for the policy rate lies that balances longer run inflationary risks around the 2% target as the mid-point of the 1–3% policy band. The inflation-adjusted neutral rate theoretically exists at the intersection of when actual GDP equals the potential GDP level signalling no slack while operating at the BoC's 2% inflation target. One could argue that with gaps shut, we are already definitionally at said point of equilibrium such that monetary policy is behind the inflation curve. Countering this could be uncertainty toward the sustainability of operating at the point of reduced or no slack in the face of sundry risks to the demand and supply sides of the slack equation. It may also be that considerations beyond slack are driving inflation higher and there are significant question marks hanging over the durability of present inflation readings. I'll come back to the latter question marks but for now the issue is the estimation of the neutral rate itself.

The neutral rate likely sits toward the bottom half of the BoC's published range, but we await updated guidance from the BoC as this publication goes to print. This

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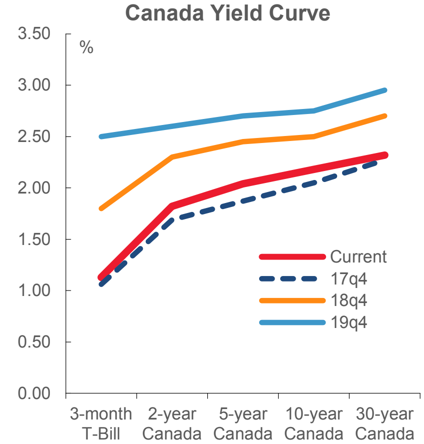
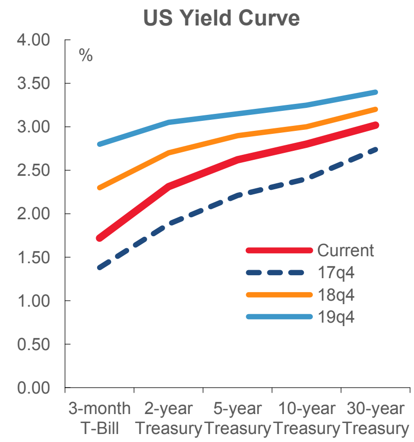
Chart 1



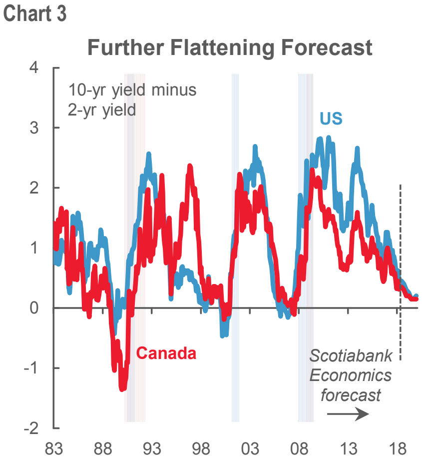
Source: Scotiabank Economics.

Chart 2



Sources: Scotiabank Economics, Bloomberg.

Chart 3



Sources: Scotiabank Economics, Bank of Canada, Federal Reserve Board, NBER, CD Howe Institute.

piece last Fall reinforced last April's changed estimate when the BoC lowered the inflation-adjusted neutral policy rate to a range from 0.5–1.5% which was 25bps lower than in April 2016 and 50bps lower compared to its prior estimate of 1–2% in 2014 (here). By corollary, a 2% inflation target translates into a nominal neutral policy rate of between 2.5–3.5% with a mid-point of about 3%. A lower neutral rate could be motivated by demand-side uncertainties such as risks to global trade policy that sap well-being and productivity out of the longer-run growth picture.

The BoC's present 3% mid-point would rest in line with or could be slightly higher than the Federal Open Market Committee's (FOMC) revised estimate of 2.9%. Can Canada have a neutral policy rate at the Fed's level, let alone above it especially if we start to consider the upper half of the range? That seems implausible in that by corollary it partly implies that Canada would be likely to have long-run growth prospects equal to or firmer than the US economy. The US has a deeper capital stock with arguably fewer internal barriers to the movement of capital and labour and may over time continue to be more successful at incorporating newer technologies that raise the US long-run non-inflationary growth rate above Canada's and with that the US neutral policy rate relative to Canada's.

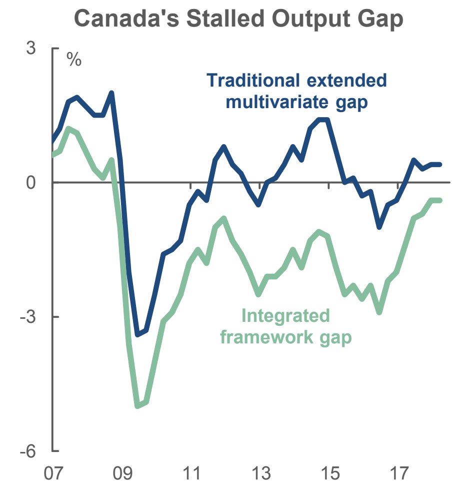
The mystery will soon be solved. BoC Deputy Governor Tim Lane recently advised "We will be providing a fuller assessment of potential growth, as well as of the neutral interest rate, in our April *Monetary Policy Report.*" Dragging out rate hikes and hence maintaining existing stimulus for longer is a risk informed by hesitation to get to the neutral rate too quickly given the limited policy response implied in a future crisis around such a low estimate. Accelerating rate hikes to get to the neutral rate carries uncertain influences upon financial stability risks by amplifying them in the nearer term but perhaps providing more market discipline to future financial decisions. The matter of where the neutral rate rests is, therefore, critically important to inform pricing of risks to the front-end and belly of the Canada curve. At a present policy rate of 1.25% and a possible neutral rate of 2.5–2.75%, monetary policy conditions are loose, but not outrageously so. This provides the BoC with some flexibility to explore the nearer-term policy risks. Nevertheless, it's reasonable to have reservations toward a tendency for central banks to revisit policy goal posts yearly as has been the recent pattern. The ability to forecast long-run potential growth—and hence the neutral rate—is very limited to begin with, so set the neutral rate once and revisit rarely.

2. Steady State Fundamentals

Second is an assessment of the fundamentals both present and forecast. Consider the following points:

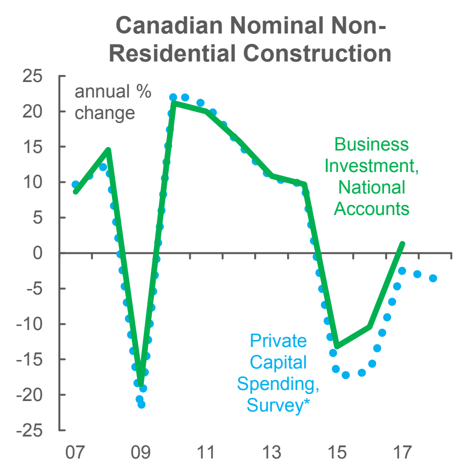
Output gaps serve as one indication of slack and they simultaneously signal little to no runway left for growth without adding to inflationary pressure while counselling caution on immediate next steps (chart 4). The average of the BoC's two output gaps is roughly closed, but the measures have not materially budged over the past three quarters during which growth has been averaging at a one-handled quarterly pace. In my opinion, the BoC has overly downplayed the fact there has been no material pressure on its output gap framework as it has alternatively chosen to emphasize full year growth rates that ignore momentum arguments. Nevertheless, we still forecast a gradual further tightening of capacity constraints. The implication is that the BoC may have reason to pause to reassess its evaluation of pressures on slack, but we think modest pressures will return.

Chart 4



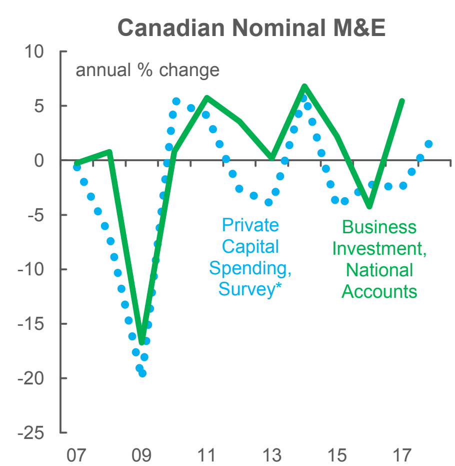
Sources: Scotiabank Economics, Bank of Canada.

Chart 5



* 2018 reflects spending intentions. Sources: Scotiabank Economics, Statistics Canada.

Chart 6



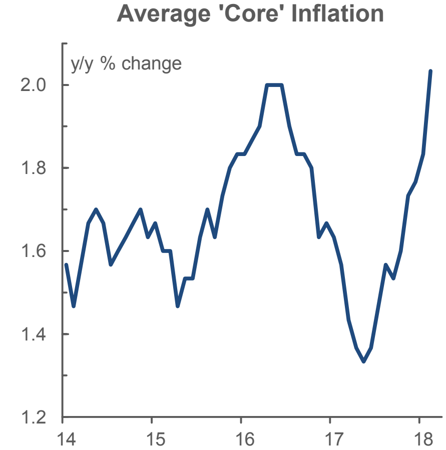
* 2018 reflects spending intentions. Sources: Scotiabank Economics, Statistics Canada.

The investment picture is uncertain but an expanding capital stock would mitigate upside inflation risks through expanding the supply side via estimates of potential GDP all else equal, while the opposite also holds true. To date, there has been a decent rebound in business investment over the past year, but recent investment intentions were soft, somewhat partly as energy investment stabilizes and NAFTA and other risks to global trade concern boardrooms (charts 5, 6). Nevertheless, the way the BoC views this was recently summarized by Lane: "...while it's also too early to tell how much additional potential output in the economy is being created, last week's strong investment figures are encouraging." How this influences BoC thinking was well put by Governor Poloz: "The bank has concluded there remains a degree of untapped supply potential in the economy. This is important, for it means that Canada may be able to have more economic growth, a larger economy, and therefore more income per person, without generating higher inflation."

Perhaps not surprisingly, the closure of slack has put some upward pressure upon the average of the three central tendency inflation gauges (chart 7). On both headline CPI and the central tendency measures, the BoC is already at its inflation target. There are solid reasons—both durable and transitory—why the central tendency measures may have accelerated toward target. The Phillips curve model of Scotiabank's René Lalonde has performed well at calling the gradual rise in core inflation over the past year (charts 8). The economy is expected to go into mild excess demand conditions (chart 9). Core inflation has risen a little more quickly than anticipated of late and probably for transitory reasons (see here for a review). The BoC targets an inflation range of 1–3%, however, and it is unclear whether the economy will materially slip into excess aggregate demand that threatens the upper bound of the inflation target range. Our forecast is that it will not but our forecast embeds further modest policy tightening this year with lagging effects on inflation.

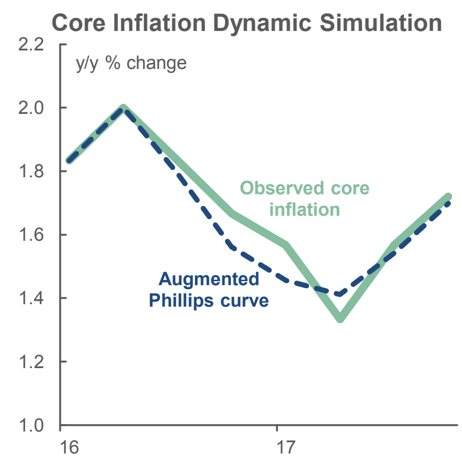
Strong labour markets have coincided with improved wage growth. The BoC's preferred measure is the wage-common metric (here). It is not made public on a regular basis but two of its components have risen significantly of late including the more heavily weighted measure from the payrolls survey that is wickedly volatile (chart 10). Some of this acceleration is likely transitory and reflects the impact of minimum wage hikes across several provinces and with more to come over the

Chart 7



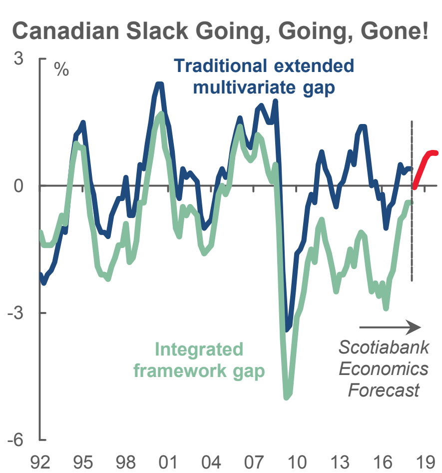
Sources: Scotiabank Economics, Statistics Canada.

Chart 8



Sources: Scotiabank Economics, Statistics Canada.

Chart 9

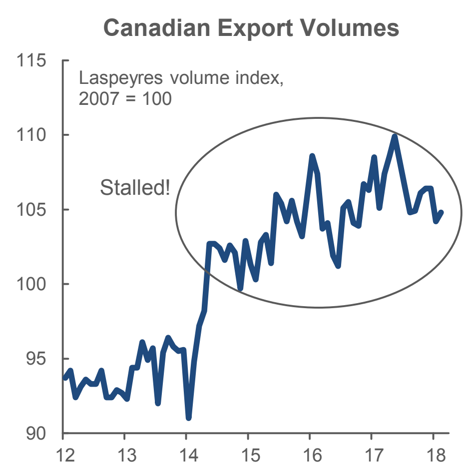


Sources: Scotiabank Economics, Bank of Canada.

Chart 10

* Weighted hourly earnings of salaried and hourly employees. Sources: Scotiabank Economics, Statistics Canada.

Chart 11



Sources: Scotiabank Economics, Statistics Canada.

remainder of this year. Other possibly transitory upsides include shaking off the prior wage disinflation of the commodity shock. Regardless, labour market slack continues to tighten as a more durable rationale for possible future wage inflation.

It's not just growth that concerns the BoC. It's the composition of growth amid the long hoped for rotation away from excess reliance upon inflated housing markets and consumer spending toward more constructive sources of longer-run growth and living standards, namely exports and investment. On that count, there has been very little durable progress (chart 11).

Chart 12

Sources: Scotiabank Economics, Bank of Canada.

Difficult-to-assess credit conditions are a combination of forward-looking risks and backward-looking assessments of the drivers. Some of the measures—like Bloomberg's Canadian high yield index—remain very elevated. Other measures like household credit growth are of little use, in my opinion. It's natural to expect credit growth to come off relative to the strong market last Spring (chart 12). In month-ago terms, we have little to go by as the mortgage figures speak to the dead zone called Canada's Winter. In any event, growth in booked mortgage balances outstanding reflects decisions made after pre-approvals and rate commitments were made in late 2017. There is no public information on how the Spring season is shaping up as of yet but pre-approvals are the key. Booked mortgage data will only reflect what happened in the Spring season by the time Summer rolls around. Among other matters, it's premature to judge whether non-bank lenders can fill the void.

3. Forecast Overrides

The third issue concerns NAFTA and other geopolitical risks. Insofar as it informs BoC policy risks, there is little to go by at the time of publishing that would suggest the BoC should move toward materially reducing negative forecast judgement from its outlook because of NAFTA or global trade policy uncertainties. This could change abruptly in either direction. The willingness to negotiate is there on all sides which tilts the balance of probabilities toward the more constructive side, but material differences persist and all three legislative bodies in the US, Canada and Mexico would have to pass a NAFTA 2.0 agreement. Before the BoC has conviction that the trade policy risks are shaping up more favourably, it's premature to expect the BoC to alter forecast judgement at this juncture. This issue will be revisited in subsequent forecast rounds and as new information arises, but for now, it's likely that the BoC continues to shave NAFTA-related forecast growth prospects for trade policy uncertainty in the April forecast round. Whether that means they should reduce negative judgement applied to growth forecasts because of global trade policy developments will remain uncertain.

FEDERAL RESERVE — MARKETS ADD TO POLICY TIGHTENING

Scotiabank's house forecast calls for two more hikes from the Federal Reserve this year and two more next year on the path toward a nominal policy rate of 2.75% by the end of 2019. Somewhat tightened financial conditions, trade policy uncertainties, late cycle considerations, fiscal policy effects on bond markets, intensifying Fed balance sheet reductions and the possibility that improved inflation readings are partly driven by transitory considerations are among the issues that lead to notable uncertainty and why at present we are undercutting the consensus call for a 3% target rate by the end of next year. At this point, we are cognizant of the economic momentum and the application of fiscal stimulus to the outlook, but hesitant to add to forecast tightening at this juncture given too many unknowns by way of financial market vulnerabilities and trade policy uncertainties. These risks will be informed into our next forecast round. Our four more hikes through the end of 2019 is one short of the Bloomberg consensus and notably lighter than the highest forecasts from shops that anticipate seven hikes over this time period at about a once-per-quarter pace.

I'll explore three broad sources of uncertainty as they inform the forecasts.

1. Policy Guideposts

First is mild uncertainty with respect to the Fed's overall policy framework and ultimate goal posts and how they may change. The appointment of John Williams to head the NY Federal Reserve is dovish at the margin and in ways that may signal a desire for more diverse perspectives on monetary policy around Chair Powell's table. The regional board made the decision no doubt informed by many sources but approved by the Fed's Board of Governors.

Williams supports near-term Fed policy goals but has tended to be more publicly open-minded toward a lower nominal neutral policy rate of 2.5% than the FOMC consensus of 2.9%, a higher inflation target that implies a yet lower real neutral rate and consideration of alternative policy frameworks such as price level targeting or NGDP targeting. Congress sets the mandate and it took years to move toward a dual mandate over four decades ago so Williams will not have immediate effect upon the framework, but the Fed sets the parameters within the framework including its inflation target and neutral rate. Williams may very well speak from a higher pulpit on such matters. If he still believes in a 2.5% neutral rate then his is the second lowest dot on the Fed's longer-run dot plot within a range of voices from 2.25–3.5%. The NY Fed's permanent voting status at the table therefore just became at least as dovish as under its successful predecessor, Bill Dudley, and quite possibly more so.

2. Financial Stability

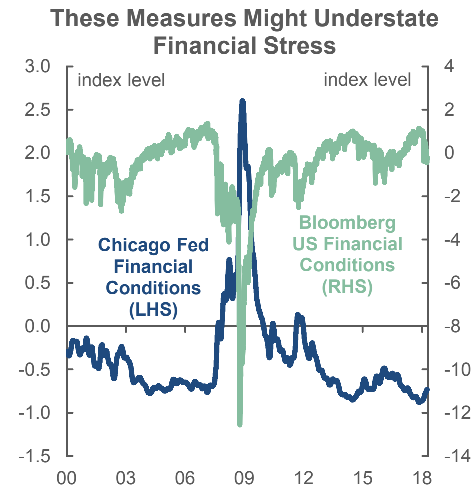
Broad financial conditions remain stimulative, but significantly less so amid uncertain risks. This counsels caution at the Fed which, in my opinion, shaves the policy risks to our base case call for two more hikes this year against more hikes than forecast. Indeed, judged by some measures such as the LIBOR-OIS spread, the US may have already had the equivalent of an extra Fed hike this year. Work such as this piece from the NY Fed effectively demonstrates the policy focus upon risk management surrounding growth forecasts and the role that uncertainty toward financial conditions can play.

It's important to emphasize the most informative measures of financial conditions. Overly broad measures like the Chicago Fed's national financial conditions index mix over one hundred variables together of varying frequencies and freshness (chart 13). Lending officers' opinions, for instance, are factored in quarterly and hence in seriously lagging ways. Bloomberg's measure (also chart 13) includes equities that are skewed toward the top earners. At the margin, I'd have preference for measures derived from debt and FX markets that speak more closely to mainstreet economic conditions through repricing debt carrying costs.

Widened LIBOR-OIS spreads are influenced by uncertain drivers but from the standpoint of LIBOR-linked debt markets have nevertheless appeared to impose the equivalent of two extra rate hikes beyond what the Federal Reserve has done with a 25bps hike so far this year. Clearly not all debt is LIBOR-linked, however, and we figure that about 30% of US household and business loans and debt securities are linked to LIBOR. The roughly 50bps widening of LIBOR-OIS spreads since November therefore equates to under one additional Fed rate hike delivered through this channel on top of the March Fed hike. For the 'four hike' camp, there should be some comfort that money market developments add to the Fed's three hikes in 2018 including the March hike. Obviously the effects are more significant to firms with debt linked to LIBOR but it's not a large impact, although worth monitoring going forward given marked uncertainty over the drivers.

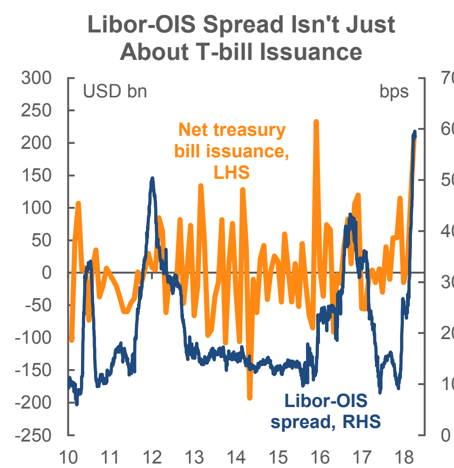
On the drivers, a rise in T-bill issuance is only a part of the story through depressing their prices and raising required rates of return because a) the historical connection

Chart 13



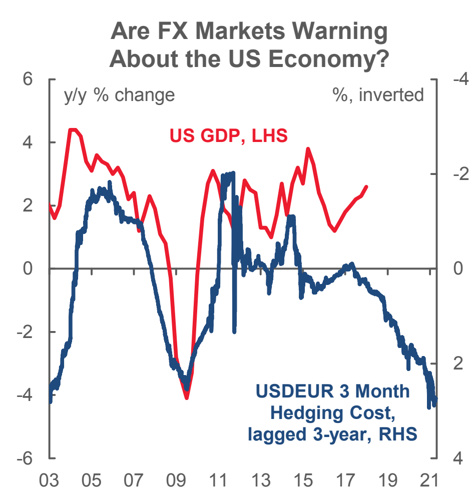
Sources: Scotiabank Economics, Bloomberg.

Chart 14



Sources: Scotiabank Economics, SIFMA, Bloomberg.

Chart 15



Sources: Scotiabank Economics, Bloomberg.

between the spread and issuance has been imperfect, b) the spread is at a ten year high but T-bill issuance certainly is not (chart 14), and c) T-bill issuance is already plummeting and everyone expects this to continue so why isn't the spread reacting?

Other drivers of the LIBOR-OIS spread may keep it elevated for some time. The Tax Cuts and Jobs Act is likely a contributor. Previously, earnings were taxed at a single statutory rate of 35% but foreign tax liabilities could be indefinitely deferred. Now companies must pay taxes on profits wherever sourced but the 21% rate applied to domestic earnings drops to about half that and possibly less for liquid assets returned from abroad. This is a liquidity shift to pay the tax bill that essentially involves selling liquid holdings and by corollary putting upward pressure on money market rates. If repatriation is the influencing factor, then a sizeable portion of the just under $3 trillion in earnings held abroad could, under the TCJA provisions, be subject to conversion for an extended period. The widened LIBOR-OIS spread may also reflect other influences, including as a signal about counter-party risks in a world of escalating trade tensions amid financial asset vulnerabilities and late cycle considerations. If this latter set of influences is the driver, then one would probably wish to be conservative and not ignore prospects for further spread widening over our forecast horizon and use this assumption to inform Fed expectations.

In addition to higher Treasury yields this year and pass-through to mortgage rates, widened foreign exchange hedging costs are an added consideration. The EURUSD hedging costs have not been this high since before the global financial crisis while hedging costs out of yen into dollars are also wide. A portion of this is the currency basis which serves as the plug to covered interest parity. While FX markets may at times be overly reactive to headline risk, they are still the most efficient broad marketplace and may be signalling future risks to currency market developments that may have a tie back to fundamentals. Lag out EURUSD hedging costs and note its ability to call turns in US GDP growth (chart 15).

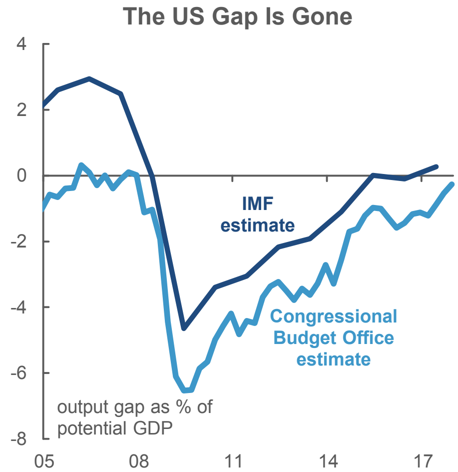
3. Fundamentals

The US growth, inflation and wage dynamics are constructive by way of lending a hand to a picture of further monetary policy tightening. More on the US outlook is available in the US section of the *Global Outlook* so I'll focus upon why concern about faster tightening than projected must be tempered by possibly transitory influences upon the wage and prices complex.

The US output gap is signalling the closure of spare capacity (chart 16). Output gaps are a crude guide to forward-looking inflation risks but our baseline view assumes actual GDP growth with a fiscal policy assist will outpace the economy's noninflationary speed limit and thus incrementally push the US economy into excess aggregate demand conditions over 2018–19. Hence our baseline forecast for 100bps of hikes between now and the end of 2019. Over time, however, the fiscal impulse will drop out and expose softer underlying growth that may well fall back to potential growth if not undershoot. Fed policy today has to be mindful of such risks in light of long and variable monetary policy lags.

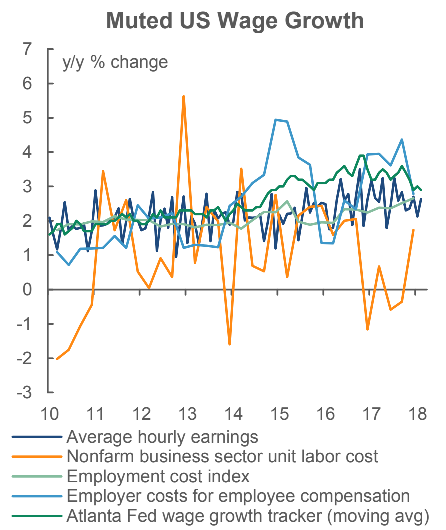
While spare capacity considerations lean toward higher inflation over time, there are also transitory developments that could prove offsetting over time. A key one is the USD's influence. Prior Fed research (here) has indicated that a 10% trade-weighted appreciation/depreciation in the broad dollar drives core PCE inflation lower/higher by

Chart 16



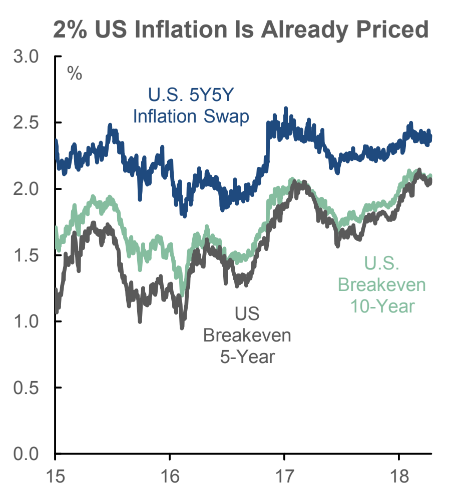
Source: Scotiabank Economics, CBO, IMF, NBER.

Chart 17



Sources: Scotiabank Economics, BLS, Federal Reserve Bank of Atlanta.

Chart 18



Source: Scotiabank Economics, Bloomberg.

0.5% within two quarters that dissipates to 0.3% within a year. The USD's rise until early last year likely played a contributing role in terms of the softening inflation picture while the mild rise in core PCE of late may be reflecting a softer dollar.

Wage growth developments are uncertain but a variety of measures needs to be considered. Chart 17 shows multiple wage growth measures and I don't see any obvious or durable break-outs in recent trends. Average hourly earnings can be swung by skewed changes in income distribution in any particular period. At 2.6% y/y, this measure has been trendless after a brief acceleration in 2015. Another measure is the Atlanta Fed's wage metric that tracks median wages from constructed sources and it is higher than the average wage growth measure but has decelerated somewhat over the past 12–18 months. Another is the BLS's employment cost index that adjusts for compositional shifts across wage earners but is available only quarterly; it has mildly accelerated. Pure employer costs for employee compensation that are drawn from the same BLS report do not make adjustments for compositional shifts and were accelerating more rapidly until growth eased over 2017H2. Unit labour costs that essentially adjust compensation for productivity growth have recently accelerated but at just 1.7% y/y they remain soft, were falling for about four quarters previously and there have been many short-lived false starts in this measure over the post-Global Financial Crisis (GFC) period. In short, mixed measures over relatively short periods in the context of many false starts require much more data to consistently show accelerating wage pressures. No one is perhaps more aware of this than the Federal Reserve given that FOMC officials have falsely flagged progress on wages in the post-GFC period only to witness no follow-through.

YIELD CURVES — LITTLE NEW INFO TO INFLUENCE FLATTENING FORECAST

Our forecasts continue to anticipate bear flattening of the 2s10s curves in the US and Canada over the duration of the forecast horizon and tracked reasonably well over the first quarter of this year. Very flat curves are expected to emerge but not invert, though curve inversion must be viewed through a different lens today anyway. For instance, it's plausible that the roughly 100bps reduction of the term premium in Treasuries due to QE policies—though slowly unwinding—makes today's slope incomparable to the curve slopes of cycles past and implies more room for curve inversion to a deeper negative 2s10s spread before worrying about potential growth signals. Many of the key drivers of the bond market outlook are unchanged now relative to our prior forecast round and are repeated with updates below.

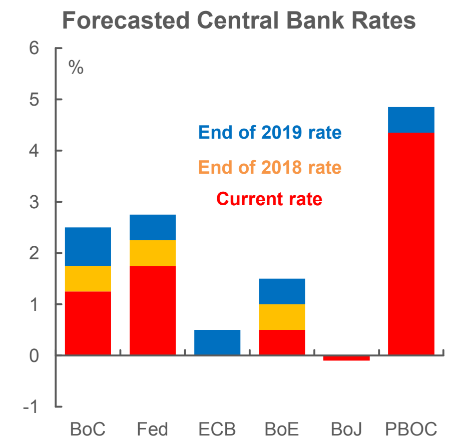
1. **Inflation:** Market-based measures peaked if not eased earlier this year and are generally in line with a stable longer-run inflation rate of around 2% (chart 18). More of our forecast rise in US PCE inflation and Canadian CPI inflation is expected to influence short-term policy rates rather than longer-term nominal bond yields. The inflation trading market is braced for higher expected inflation readings but is sensitive to upside and downside risks, but real implied yields are depressed for other reasons.

2. **Risk aversion:** It is prudent to continue to caution against historically elevated stock market valuations (chart 19), but not to do so stridently. It's possible that a soft tone in equity markets so far this year and limited pressure on yields reflects portfolio rebalancing efforts that may continue to support sovereign debt instruments and retain appetite for safe-haven assets within diversified portfolios.

Chart 19

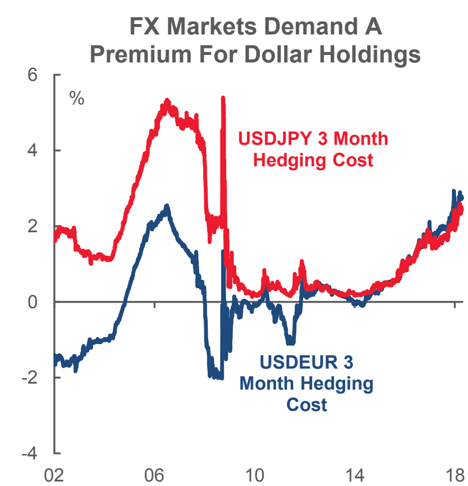
Sources: Scotiabank Economics, Robert Shiller.

Chart 20



Sources: Scotiabank Economics, BoC, Fed, ECB, BoE, BoJ, PBOC.

Chart 21



Sources: Scotiabank Economics, Bloomberg.

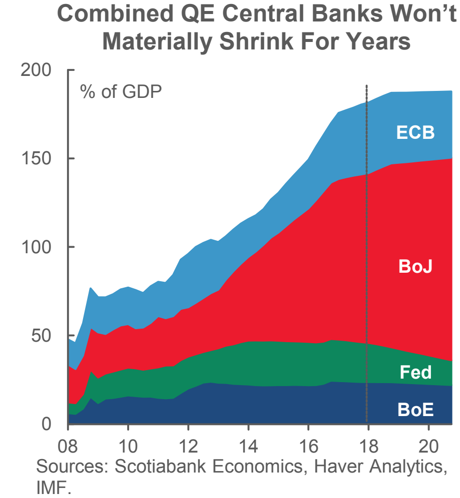
3. **Policy rate influences upon global carry:** The central banks in Anglo-American economies are forecast to remain in tightening mode, particularly in the US and Canada with the BoE likely to hike again in May. The outlook for other major central banks' policy rates is comparatively sanguine (chart 20). Zero or negative policy rates are generally expected to hold at the ECB and BoJ throughout this year and quite possibly next year. Informing this view is that Japan is expected to make little headway on its 2% inflation target, Governor Kuroda has been reappointed to another term, and policy accommodation will be required to prepare for an expected sales tax increase next year. Also informing this view is that Euro strength continues to restrain 'supercore' inflation readings around 1% y/y just as growth signals may have already peaked. After peaking in February, the German 10 year yield has dropped back toward where it was in early January perhaps in recognition of the challenges facing ECB policy. A taper decision may unfold later this year but *tightened* monetary policy would require much greater evidence of progress to the under 2% inflation target. By corollary, this assumption of little policy rate risk outside of Anglo-American economies limits the potential for a rise in term premia in JGBs and EGBs. By further corollary, this may limit the extent to which other sovereign bond markets can sell off, including Treasuries, without inducing arbitrage through currency hedged carry trades.

4. **Currency arbitrage:** Building further upon this latter point, a limiting present consideration to gauging foreign appetite for US Treasuries has been a sharp rise in FX hedging costs (chart 21). A material rise in Treasury yields could exceed FX hedging costs and induce renewed buying above a certain rate threshold that we view as not terribly above 3%.

5. **Unwinding quantitative easing:** Only the Fed's balance sheet is projected to dwindle over our forecast horizon and this is information that is already known to the market through the Fed's well communicated reinvestment plans (chart 22). The BoJ's reduced buying is often misinterpreted as a signal of waning policy resolve without controlling for the substitution toward an 'around 0%' nominal 10 year JGB yield target that introduces a credible threat against short sellers. I don't see that target changing at all, and not materially if at all. The ECB's buying has been reduced to the €30 billion per month pace this year until at least next September. Limits to further bond buying posed by the capital key and various limits to altering it probably mean incremental buying is coming to a close later this year or soon thereafter. A prolonged period of balance sheet reinvestment is then likely as the ECB probably follows the Fed's playbook of reducing reinvestment and then eliminating it only when policy rate normalization is well underway through a series of rate hikes. We don't expect this reinvestment change to occur until late decade at the earliest.

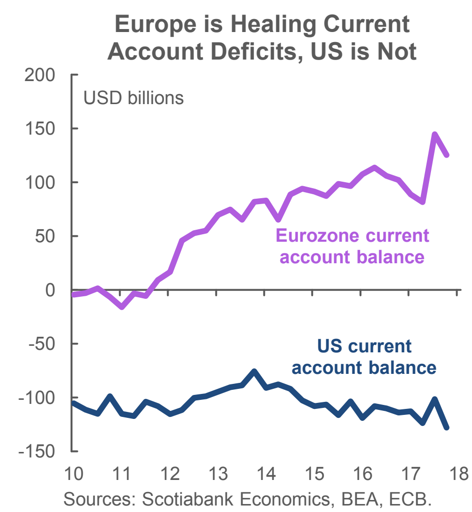
6. **The global saving–investment imbalance:** The imbalances that drove a glut of global savings have been cited as a factor behind low bond yields over the pre- and post-crisis era (like here). In the lead-up to the crisis, the current account surpluses of emerging markets resulted in exporting hoarded capital to countries like the US and played a major role in the excesses of US financial markets at the time, including China's buying of what turned out to be low-quality mortgage instruments. Insofar as the US Treasury market's connection with the rest of the world is concerned today, said imbalances stopped

Chart 22



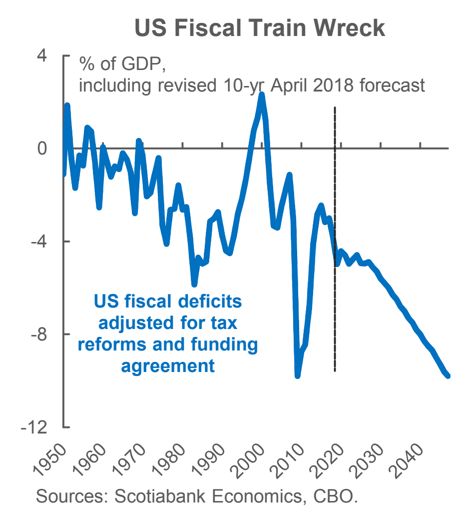
Sources: Scotiabank Economics, Haver Analytics, IMF.

Chart 23



Sources: Scotiabank Economics, BEA, ECB.

Chart 24



Sources: Scotiabank Economics, CBO.

improving in the immediate aftermath of the crisis (chart 23). To fund a US current account deficit, the US remains dependent upon large capital account inflows from the rest of the world. More of that inflow today, however, is derived from large capital account surpluses of other advanced economies—notably the Euro-area and particularly Germany, plus Japan. This effect should reinforce the carry trade's appetite for US financial instruments including Treasuries. A key risk, however, is that if the US turns more protectionist against China despite the decline of China's current account surpluses from 10% of its economy a decade ago to about 1% today, then by corollary any damage to China's trade position translates into lower net foreign currency receipts and hence less to invest abroad including in US Treasuries. There is, however, a limit to this logic in that any selling by China would impair the value of its own US$1.2 trillion worth of Treasury holdings that peaked last August. Canada also has relatively wide current account deficits versus pre-crisis surpluses. Also note that the sum total of the past decade's realignment of global savings has parked US$11.5 trillion in global foreign exchange reserves which is more than five times the Fed's SOMA Treasury holdings and about 70% higher than at the end of 2008. This stockpiled saving lends great market power to the nations where such savings are concentrated including China, Japan, about ten others with reserves in excess of US$200 billion and other countries with smaller balances.

7. **Neutral policy rates:** Our estimates of the long-run potential growth rates of major advanced economies that tend to have the largest debt issuance markets have not materially changed over recent forecast updates. What we see in the US by way of tax reforms, for instance, does little to nothing positive to long-run growth. Somewhat by extension, our estimates for neutral policy rates also have not materially changed. We think both the US and Canadian neutral policy rates lie somewhere in the 2.5–3% range. Neutral policy rate estimates plus term premia assumptions anchor the curve's pricing of potential future Fed rate policy actions.

8. **Fiscal policy:** The US was already on a path toward high and rising fiscal deficits before the introduction of limited tax reforms. Unfunded social security obligations and health care expenditures were a major part of the concern. Adding an extra US$1.5 trillion to cumulative deficits over the next decade further erodes the deficit outlook to what is shown in chart 24. This picture worsened moderately with the $300 billion package of additional spending that was introduced in February and applied over 2018–19 but by design this is a transitory effect upon funding needs. The impact of deficits on bond yields is controversial and uncertain. For instance, the large deficits of the post-crisis era had little to no effect on bond yields because of other influences like safe-haven appetite and central bank policies. Most economists still subscribe to a long-run positive effect of deficits on bond yields but the estimates are all over the map. Two pre-crisis studies of the effects before other influences came to light (here and here) posited that every one percentage point rise in the deficit to GDP ratio could, over time, raise longer-term bond yields by 20–60bps. If the deficit projections remain generally intact as the long-run influence of other

Table 1

Scotiabank Economics' Canada-US Yield Curve Forecast

	2017	2018				2019			
				(end of quarter, %)					
Canada	**Q4**	**Q1**	**Q2f**	**Q3f**	**Q4f**	**Q1f**	**Q2f**	**Q3f**	**Q4f**
BoC Overnight Target Rate	1.00	1.25	1.25	1.50	1.75	2.00	2.25	2.25	2.50
Prime Rate	3.20	3.45	3.45	3.70	3.95	4.20	4.45	4.45	4.70
3-month T-bill	1.06	1.15	1.25	1.55	1.80	2.05	2.30	2.30	2.50
2-year Canada	1.69	1.78	1.90	2.10	2.30	2.40	2.50	2.55	2.60
5-year Canada	1.87	1.97	2.10	2.25	2.45	2.55	2.60	2.65	2.70
10-year Canada	2.05	2.09	2.25	2.40	2.50	2.60	2.65	2.70	2.75
30-year Canada	2.27	2.23	2.40	2.60	2.70	2.80	2.85	2.90	2.95
United States	**Q4f**	**Q1**	**Q2f**	**Q3f**	**Q4f**	**Q1f**	**Q2f**	**Q3f**	**Q4f**
Fed Funds Target Rate	1.50	1.75	1.75	2.00	2.25	2.25	2.50	2.50	2.75
Prime Rate	4.50	4.75	4.75	5.00	5.25	5.25	5.50	5.50	5.75
3-month T-bill	1.38	1.70	1.85	2.05	2.30	2.30	2.55	2.60	2.80
2-year Treasury	1.88	2.27	2.40	2.55	2.70	2.80	2.95	3.00	3.05
5-year Treasury	2.21	2.56	2.65	2.75	2.90	2.95	3.00	3.10	3.15
10-year Treasury	2.40	2.74	2.85	2.95	3.00	3.05	3.10	3.15	3.25
30-year Treasury	2.74	2.97	3.00	3.15	3.20	3.25	3.30	3.35	3.40

Sources: Scotiabank Economics, Bloomberg.

considerations such as central bank policies abate, then the future may bring to light a very negative bond market outlook given the magnitude of the forecast deterioration in US deficits. Nevertheless, the deficit to GDP ratio remains fairly constant in the 4½% to 5% range from 2019 through to the end of the 2020s from 3½% last year and 4% this year. The US has been running deficits of that magnitude or more throughout much of the period since the 1980s. Most of the real blow-out in the CBO projections comes later in the forecast horizon when this ratio starts rising in the 2030s and hits 10% by the late 2040s. Of course, long-term CBO projections are to be accepted with a strong sense of humour given its past track record at forecasting longer run deficits and public debt, let alone their—or anyone's—ability to project interest rates and other variables over the long haul. In any event, scaled in relation to the ability of the US economy to grow, most of the deterioration in deficits that would potentially concern bond markets remains a long way off and will be driven by the long-term evolution of health care and social security costs. I don't think the nearer term bias of markets is likely to be overly rocked by what might happen to this ratio many projected years down the road. The deficit to GDP ratio increase from 3.5% in 2017 to 4.5% next year is incrementally negative to bond markets, but mildly so especially in the context of sundry other drivers.

9. **Term premium:** Research (here) suggests US 10 year Treasury yields are about 1% lower than where they would be otherwise in the absence of the Fed's balance sheet expansion and controlling for other influences. We don't expect this term premium to be suddenly restored as the Federal Reserve eliminates reinvestment and allows its balance sheet to begin to contract later next year and rely upon many of the other points provided in this section to inform this bias. Instead, a gradual re-pricing of the portion of the term premium that is driven by Fed balance sheet policy is likely and has already been modestly underway.

10. **Cycle maturity:** This is already the second longest US economic expansion on record. By early next year, continued growth would make the current cycle the longest in US history. Uncertainty over whether recession lurks is likely to retain appetites for safehavens like sovereign debt of mature economies. We think this risk is nevertheless often exaggerated. Not all major variables are suggesting late cycle risks. For instance, US household debt payments as a share of income sit at their lowest in three and a half decades and nominal wage growth looks mid-cycle at best to us. In that context, aided by wealth effects and limited albeit regressive tax reforms, US consumers could well have plenty left in the tank to drive future spending growth.

11. **Pensions and life cos:** It's not all about central banks. In fact pensions were a significant source of buying over 2017H2 partly to rebalance portfolios; otherwise the bond market would have been in worse shape as Chinese Treasury holdings gradually ebbed since peaking in August after rising over 2017H1. Private and public pensions own about US$2¼ trillion worth of Treasuries and our belief is that a rise in US 10s to the 3% mark would bring forward aggressive buying to lock in returns for servicing pensioners. Indeed, asset allocation shifts within the existing stock of bonds and equities could easily swing relative pricing considerably more than, say, risks surrounding rising dependence upon foreign funding. US equity market capitalization stands at about US$29 trillion and world equity market capitalization is US$80 trillion. By comparison, US federal government public debt sits at about US$21 trillion. Slower moving incremental changes in the public debt stock issue to foreign and domestic buyers can easily be swamped by asset allocation shifts.