

Special Report

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Negative Rates: Lessons For Canada

Since last year, the Bank of Canada has been using communication tools to talk up the option of additional monetary policy easing if needed. It is encouraging financial markets and financial institutions to take preparatory steps in the event that negative rates arrive in Canada. One example of this was setting a coupon floor and allowing bond prices to adjust in the event that negative rates arrive (see [here](#)). It is also doing so by way of pursuing a research agenda pointed in this direction and commenting publicly on such options. This follows two rate cuts last year that brought the central bank closer to what used to be thought of as the lower zero bound on nominal rates given that the BoC's policy rate now stands at 0.5%. Such efforts are within the context of ongoing risks facing the economic outlook stemming from the energy sector, non-resource exports and inflated nationwide housing markets that raise the concern that the central bank's current policy stance may make it less able to counter downside risks in future should they arise. The aim in this paper is not to assess those macro risks; rather it is to evaluate the experiences of other markets with negative rates and relate them to the Canadian market.

On balance, we don't presently see criteria elsewhere being replicated in Canada. What's more, the early experiments elsewhere to date lend caution to viewing negative rates as a powerful policy option for Canada.

1. Where Negative Rates Have Been Introduced And Why

Four European central banks and one Asian central bank presently have policy rates set below zero. They are the European Central Bank, the Bank of Japan, Sweden's Riksbank, the Swiss National Bank (SNB) and Denmark's Danmarks NationalBank (DNB).

- The **Riksbank** first drove its deposit rate negative in July 2009 until September 2010, and then cut it again in July 2014 before moving on to drive its main policy repo rate negative in February 2015 on the path to -0.35% presently.
- The **SNB** went negative on its 3 month LIBOR target rate in December 2014 and cut more deeply to -1.25% early last year when it unhinged its currency from the euro. The rate has remained there since. Only the SNB and the Riksbank went negative on their core policy rates in addition to their deposit rates.
- **Denmark's** rate of interest on CDs went negative in July 2012 until April 2014 and again in September 2014 followed by a series of cuts to -0.75% and then a recent rise to -0.65%.
- The **ECB** moved its deposit rate negative in June 2014 but not its main refi rate, and progressively cut it to -0.3% by December 2015. It may cut it again and go more deeply negative at its March 10th meeting.
- The **BoJ** cut the rate on deposits left at the central bank to -0.1% but only for new deposits starting after February 16, 2016. Its main policy unsecured overnight call rate remains ever-so-slightly positive.

Useful overviews of the policy motivations and potential effects of negative rates can be found in [this](#) article from the World Bank, [this](#) article by the NY Federal Reserve, [this](#) piece also by the NY Federal Reserve, and [this](#) review from the Bank of Canada, among others.

On balance, these central banks pursued negative rates for one or several of the following reasons.

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a. To lower the real cost of borrowing. Several adopting central banks faced low headline and core inflation and thus higher inflation-adjusted borrowing costs before they moved to negative rates. That includes Sweden where the core rate of inflation fell to zero in March 2014. Lowering the real cost of borrowing should, in theory, incite higher borrowing, and faster growth in money supply.

b. To deploy idle cash. Charging a penalty for holding deposits is thought to encourage deployment of idled liquidity into various elements of the risk trade and through lending channels. For example, a rise in bank deposits with the Bank of Japan may have been a motivating factor.

c. To debase the currency. If the *prima facie* objective of negative rates succeeds by stimulating borrowing activity and risk taking and hence underlying growth as a driver of core inflation, then currencies could strengthen over time or depreciate at a less rapid pace than otherwise. If this goal fails, then the currency is fully a one-way debasement carry-trade out of the currency that is penalizing hot money flows with negative rates and more toward other positive yielding currencies.

d. To export disinflationary pressures. Rival central banks are attempting to return inflation to target through raising import prices on the back of currency depreciation or to counter what would otherwise be appreciating currencies in the absence of negative rates.

2. Are Negative Rates Working In Europe?

A stylized facts approach concludes that constructive evidence of policy success surrounding negative policy rates in Europe is limited at best. An interesting concept in central banking circles is in search of much greater supporting macroeconomic evidence and with possibly unintended adverse consequences. A caveat is that it may still be early to evaluate the consequences of negative rates given their fairly recent introduction and the fact that they are almost completely unprecedented with the exception of Switzerland's measures in 1972 to fend-off recycled petro-flows; they existed neither during the 2008-09 crisis nor the Great Depression. Another caveat that always hangs over the social sciences is that we can never observe the alternate state of reality by way of what might have happened in the absence of negative rates.

a. Borrowing

Charts 1 and 2 show growth in household borrowing (usually lumped together with 'not for profits' as a small component in the available data) and business borrowing in each of the European regions that have adopted negative rates. We exclude Japan where lending has been weak for a long-time and negative rates have only just been partially introduced. A steady, sustained trend-break in credit growth across these regions is difficult to discern and mild at best so far.

There are several possible reasons for this in addition to the possibility that more time may be needed for success.

One is that banks may suffer margin erosion on their loans as a direct by-product of negative interest rates and thus become less willing to lend. Banks may pay to hold deposits at central banks — at a cost that diminishes profitability — but may not

Chart 1

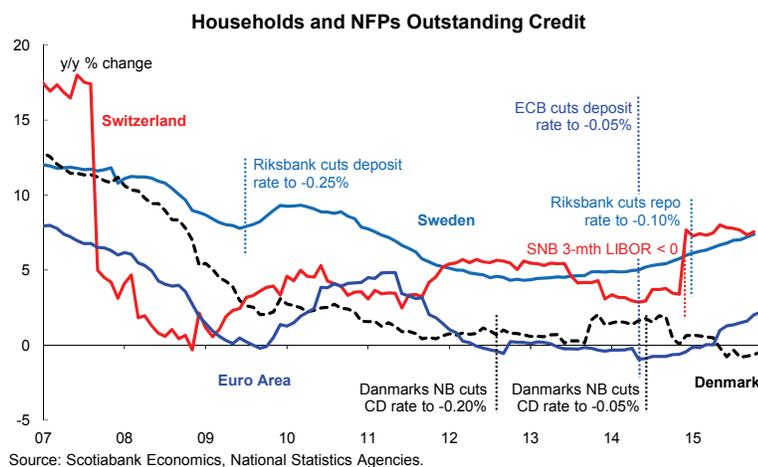


Chart 2

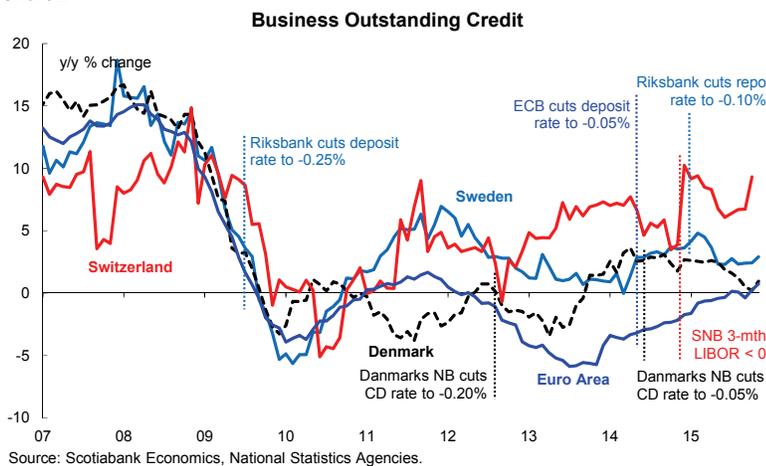
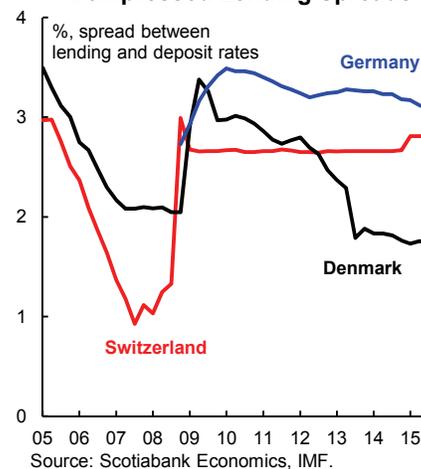


Chart 3 Compressed Lending Spreads



pass through negative deposit rates to their clients as they are not in Europe. Lending rates are more likely to be driven lower in a negative deposit rate environment and thus lending spreads narrow. There is some evidence for this already but mixed alongside longer-lived influences (chart 3). Tighter spreads may lessen the willingness of lenders to lend and, as such, negative rates can exacerbate deleveraging.

A second reason is that paying a slight penalty for holding idle deposits at the central bank may be viewed by banks as the least unpalatable option compared to lending out funds only to potentially lose the loan. Attractive credit opportunities are required, and these may be hard to come by in an environment marked by the perceived necessity of extreme policy measures.

A third possibility is that negative rates serve a negative signaling effect to borrowers that dampens borrower confidence.

Another possible reason is that if clients expect to have to pay banks for deposits, they may balk at this and choose to either hoard cash and thus reduce funding to lenders, or use deposits to pay off higher cost loans — thus exacerbating deleveraging.

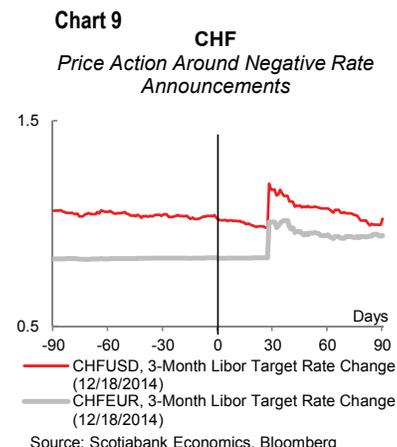
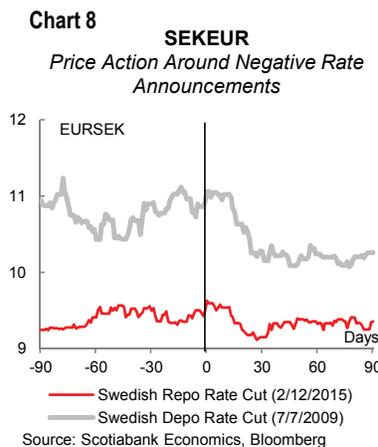
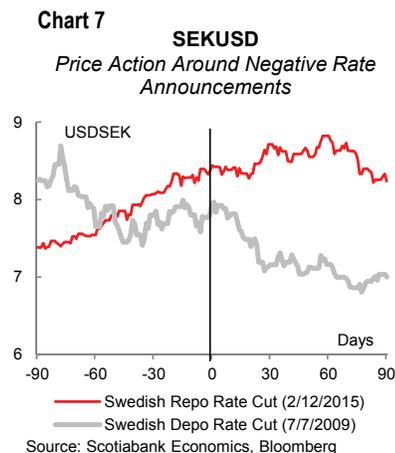
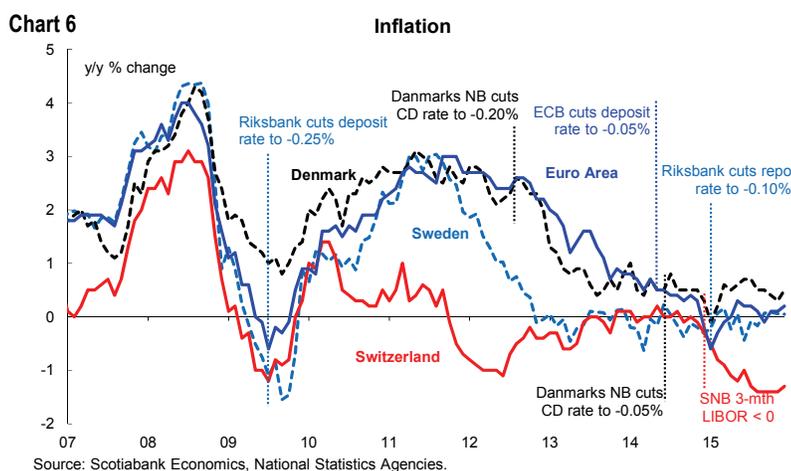
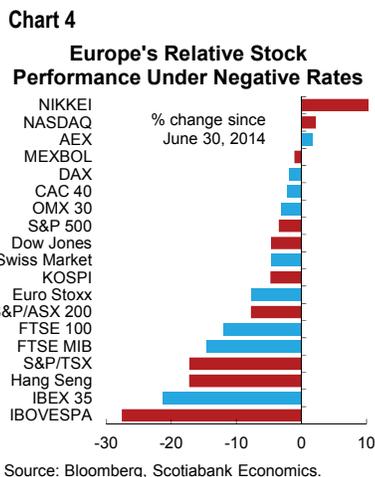
A fifth possibility is that banks are reticent to pass through negative deposit rates that would require their depositors to pay banks. Doing so could harm client relations and run the risk of deposits migrating toward banks and nonbanks that are unwilling to push deposit rates negative. Thus, banks may pay negative deposit rates through central banks but transmission to clients is blocked.

b. Risk Trade

As chart 4 depicts, most of Europe's equity bourses have lost ground since the ECB introduced negative rates two summers ago. What we can never observe is what would have happened to stock markets in the absence of ECB stimulus.

c. Inflation

Here too the evidence is at best mixed so far. It's unclear whether negative rates have done much to alter the trajectory of market-based inflation expectations in any meaningful way. Chart 5 demonstrates that since the ECB went negative in the



summer of 2014, market inflation expectations have been volatile and more to do with commodity prices than any clear trend related to ECB policy. Chart 6 shows core inflation measures in each of the Eurozone, Sweden, Denmark and Switzerland following the decisions to introduce negative rates. At least thus far, if the policy aim of negative rates was to lift core inflation, then the policy has failed in the face of other risks. We stress we don't know what might have happened otherwise, and monetary policy acts with long lags on inflation.

d. Currency debasement

Charts 7-11 contain event-studies showing the response of currencies in the affected countries around the time that their central banks went negative on one or more policy rates. As a whole they are not overwhelmingly convincing. The euro began depreciating versus the USD several weeks after the ECB cut to a negative rate and has continued to depreciate since and partly also on expectations that US monetary policy was turning less accommodative going forward which mixes the influences. In the cases of the Riksbank, SNB, and DNB, all were trying to defend against a depreciating euro when they cut to zero. The BoJ's experiences are worth greater attention.

3. The Bank of Japan's Experience

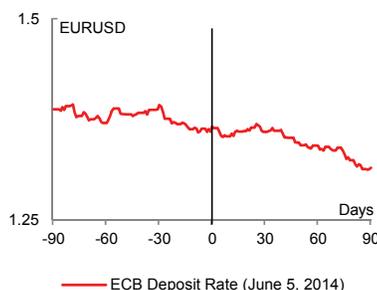
It's too early to assess the impact of the Bank of Japan's adoption of negative rates but the impact of the moves undertaken thus far are likely to be small. Further, the way the BoJ embraced negative rates suggests limited confidence in the impact net of the risks.

The BoJ cut the rate on deposits left at the central bank to -0.1% but only for new deposits starting after February 16th 2016. Outstanding reserves will continue to earn a tiny 0.1%. The aim in so doing is to limit damage to Japanese bank margins given the European experience. Given the rate of growth of said deposits over time (chart 12), the impact at the margin will be de-minimalist. Accordingly the yen's response to the negative rates announcement was the most muted in response to policy changes during the Abenomics era; it depreciated by less than three yen to the USD in response to the announcement.

Of greater note is what the BoJ didn't do when it tepidly introduced negative rates. It did not raise the bond purchase target of ¥80 trillion annually because its ability to do so is limited. By the end of next year at the current rate of purchases and reasonable issuance assumptions, the BoJ's share of the JGBs market will be nearly 50% (chart 13). JGB yields have been crushed for years so buying more of them wouldn't do anything other than further depreciate the currency.

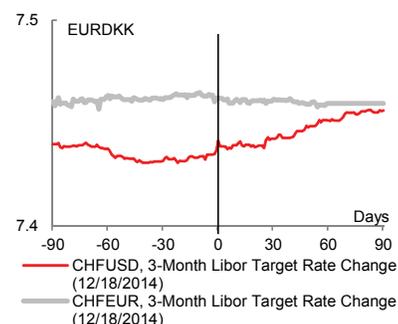
Depreciating the currency is risky for a country with high import propensities and has not worked thus far. What depreciating the yen does is to raise foreign currency translation effects on earnings from abroad which translates into higher stock multiples for a time at least. But it has done little on net to the real side of the economy as export volumes have performed erratically and not experienced a big lift from the yen's drop, and consumers have been negatively impacted by the yen's plunge. This is because in an environment of limited wage growth, tight credit, an import price shock through the yen's drop and high import propensities, consumers respond by spending more on what they have to — imported items like oil and gas and some food — and either toe the line on everything else or reduce other purchases to make their budget constraints balance out. Ergo why consumption data out of Japan has been weak. **The message here is that whether**

Chart 10
EURUSD
Price Action Around Negative Rate Announcements



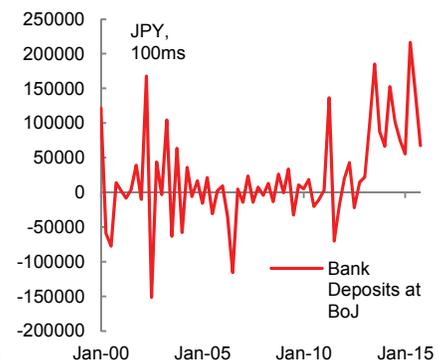
Source: Scotiabank Economics, Bloomberg

Chart 11
DKK
Price Action Around Negative Rate Announcements



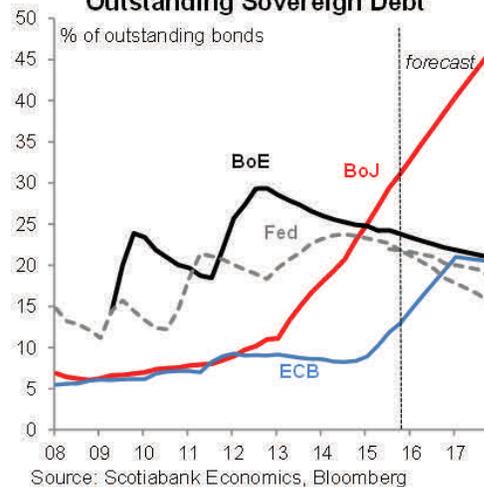
Source: Scotiabank Economics, Bloomberg

Chart 12
Monthly Bank Deposit Flow at BoJ



Source: Scotiabank Economics

Chart 13
Central Bank Holdings of Outstanding Sovereign Debt



Source: Scotiabank Economics, Bloomberg

through QE or negative rates, attempting to soften the currency to stoke growth has not been met with success thus far. Also note that as a further sign of how divisive the issue of negative rates is across monetary policy circles, note that the vote in favour of taking this step and all other changes was a slim 5-4 outcome.

4. Canadian Differences

Canada offers a different backdrop than Europe and Japan on multiple fronts. At least to this point, several differences on balance should lend themselves to dismissing negative rates as a necessary policy option notwithstanding at best mixed evidence of policy efficacy elsewhere.

a. Real rates are already very low to negative in Canada. Inflation has generally not been subject to as large and diverse downward pressure as in Europe. The 10 year inflation breakeven rate sits at about 1.3% compared to the BoC's overnight rate of 0.5%. This could change in, say, a scenario of significant domestic turmoil such as household sector weakness.

b. The floating Canadian dollar has already done much of the adjustment and its main trading partner is not presently attempting to debase its own currency. Note that this stands in stark contrast to the efforts of Denmark and Switzerland with managed currencies as opposed to Canada's floating exchange rate.

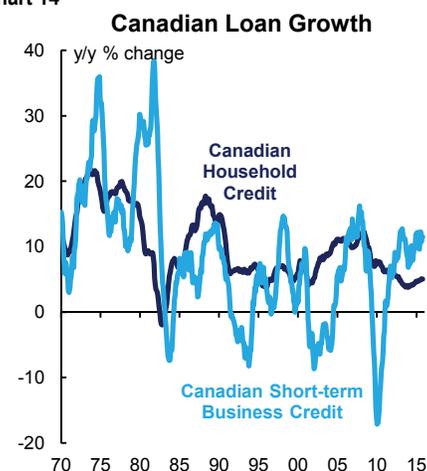
c. Borrowing channels are already quite strong in Canada without the borrower deleveraging and lender challenges elsewhere (chart 14).

d. Idled liquidity. Former Governor Mark Carney often commented on corporate Canada's cash balances and some saw it differently. Thus the validity of this argument as a need for negative rates to force redeployment of liquidity is controversial at best.

e. Commodities reliance. Canada is also different in part due to greater average reliance upon the commodities picture than the European central banks that have pursued negative rates, and a central bank whose reaction function is accommodative.

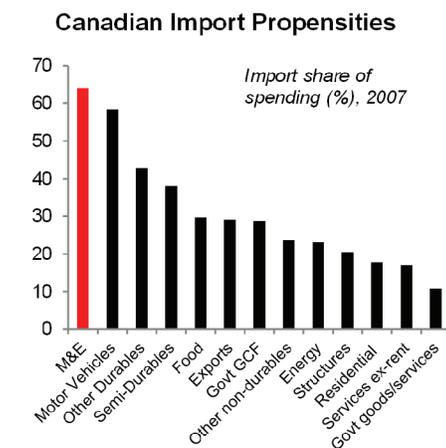
f. Import reliance. Canada has a very high import reliance across capital goods and consumer goods (chart 15). Like Japan, a depreciated currency risks dampening pressure on consumption. Further efforts to debase the currency through monetary policy actions in addition to drivers like global risk tolerance, oil prices and other commodity prices would likely further raise risks facing the consumer sector at cycle peaks across virtually every variable in the household sector.

Chart 14



Source: Bank of Canada, Scotiabank Economics.

Chart 15



Source: Scotiabank Economics, Ministry of Finance

5. Risks And Redesigning The Financial Landscape

Canada would be entering into uncharted waters on contracts not designed for negative rates; both the uncertain and entirely unknown effects could be destabilizing to investor confidence. We can't possibly tell the full ramifications and unintended consequences versus giving a sense of the myriad potential complications. The following illustrations are drawn from work done by the New York Federal Reserve:

"...negative rates....may spawn a variety of financial innovations, such as special-purpose banks and the use of certified bank checks in large-value transactions, and novel preferences, such as a preference for making early and/or excess payments to creditworthy counterparties and a preference for receiving payments in forms that facilitate deferred collection. Such responses should be expected in a market-based economy but may nevertheless present new problems for financial service providers (when their products and services are used in ways not previously anticipated) and for regulators (if novel private sector behavior leads to new types of systemic risk)."

“Many debt contracts feature floating interest rates; that is, the interest rate on the debt is modified periodically to reflect prevailing market interest rates. But when the contractual language does not contemplate the possibility of negative rates, complications will ensue. In that event, the parties must renegotiate, which is difficult when the parties are highly dispersed, and adjust the contractual language to address what happens when market rates are negative. Another first-order operational problem is how to collect interest from creditors: often debtors have few means of calculating interest payments due from creditors, few easy ways to collect the payment, and a limited ability to enforce negative interest payments from creditors. Given these realities, designing interest-bearing securities at negative yields will require careful planning.”

“...because it is so challenging to develop a practical way to collect periodic interest payments directly from holders, one possible work-around is for the issuer of a fixed-rate bond to set the coupon rate to zero, making the bond a single-payment security, and to sell the bond at a premium to its principal value. Alternatively, an issuer could sell a bond with a negative coupon rate by providing that, in the absence of timely payment of interest, the omitted interest payment will be deducted from the principal due at maturity.”

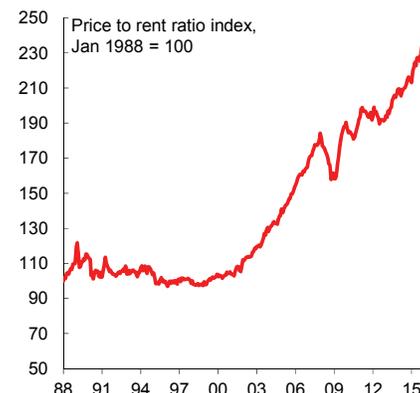
“One legal issue is whether, in the case in which bonds are to be redeemed for less than par, the bonds qualify to be used as collateral in various central bank or private arrangements that require collateral; another is whether the decrease in the par value of the bond might trigger a default that would require a writer of credit default swap protection to make payment to the holder of the swap.”

Two more risks that are specific to the Canadian context are now offered.

First is financial stability. In the context of already elevated house prices in Canada (chart 16), further downward pressure upon borrowing costs could add to concerns of housing excesses as they have tended to do in Sweden and Denmark. Such concerns are nationwide (chart 17).

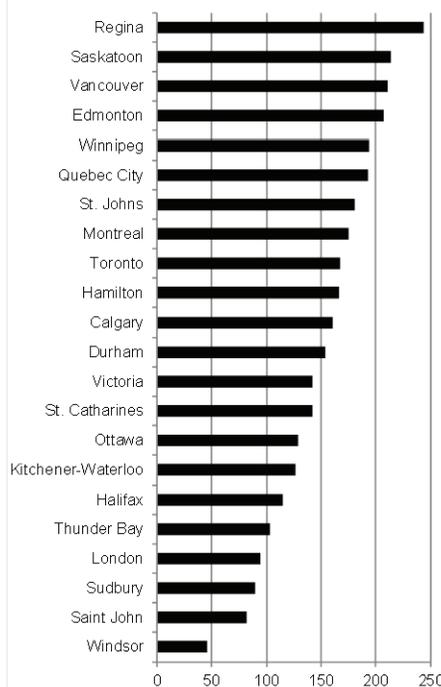
Second is the impact upon foreign market confidence in Canada. While currency debasement can be a goal of negative rates, the cost for a country that is significantly dependent upon foreign appetite for its borrowing needs can be reduced appetite for some types of bonds in such fashion as to widen borrowing spreads. This may be Canada’s challenge now in that wide spreads on Canada Mortgage Bonds and provincial bonds may exist in part because of foreign buyer reticence in the face of ongoing chatter of policy easing and the currency implications. For a country with a small weighting in global portfolios, risk aversion in the face of such uncertainty tends to dominate in favour of greater emphasis placed upon other options.

Chart 16
Canadian Price to Rent Ratio



Source: Scotiabank Economics, Statistics Canada, MLS.

Chart 17
Nationwide Surge in House Prices
% change since 2000



Source: Scotiabank Economics, MLS