The role and objectives of Canadian monetary policy

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Key questions

- Monetary policy plays a crucial but limited role in supporting a vibrant, healthy Cdn economy.

- It's a critical determinant of
  - Medium to long-run rates of inflation and nominal exchange rates.
  - The short-run response of the Cdn economy to shocks like large movements in oil prices.

- But monetary policy plays very little role in determining the medium to long-run growth rate of the Cdn economy.
  - What counts is the productivity of Cdn workers, the health of the financial system, fiscal policy, the efficiency of our the tax system, the quality of our infra-structure, population growth rates and labor force participation rates.

My remarks will touch on two questions

(1) What are the fundamental choices available to the Bank of Canada when choosing its policy rules?

(2) How should Cdn monetary policy respond to the possibility that we have entered an era of secular stagnation?

The Appropriate Objective of Monetary Policy

- The primary objective of the Bank of Canada should be to provide Cdns with a low and stable inflation rate.
  - The bank shouldn't use interest rate policy in the pursuit of financial stability.
  - It's far too blunt a tool for a country as heterogenous as Canada
    - Do you really want to use the same medicine for housing markets in Ft McMurray and Toronto?
- The right tool for achieving financial stability is macro-prudential policy.
- The bank should have an opinion on these on these matters and weigh in on the debate.
  - But in the end the responsibility lies firmly with OSFI and related government agencies.

How should the Bank achieve its inflation targets?

- It should do so via a policy framework that facilitates the way the Cdn economy responds to shocks.
- Question 1: should the regime be one in which the Cdn economy respond to shocks via
  - temporary but persistent changes in the rate of inflation, or
  - temporary but persistent changes in the nominal exchange rate?
- Question 2:
  - what constraints does the Bank of Canada face because it's an open economy with no capital controls?

The current regime

- Cdn monetary policy is set to achieve low and stable rate of inflation.
- Cdn monetary policy is closely, but not perfectly aligned, with U.S. monetary policy.
  - Both countries share a target rate of inflation of 2% with a desired band of swings between 1% and 3%.
- A key property of current monetary policy:
  - The economy responds to shocks via temporary but persistent changes in the nominal exchange rate.

Alternative regimes

- Suppose the Bank of Canada were to *unilaterally* adopt an alternative policy regime that was very different from the Federal Reserve's.
- For example, the Bank of Canada could move to a regime where the average inflation rate over a long period of time was the same as in the U.S.
- But the new regime could allow Cdn and U.S. inflation rates to diverge substantially in the aftermath of disturbances.
  - Price level targeting or exchange rate targeting.
- Then exchange rates would play a smaller role in adjustment process.

Alternative regimes

- Relative changes in Cdn - US inflation rates would play a much larger role in the way the Cdn economy adjusted to shocks.
- Cdn firms and household would face substantially more uncertainty about inflation rates.
- It's possible that most Cdn firms and household would prefer such a world.
  - But I doubt it.
- The benefits of such a unilateral change in the Bank of Canada's monetary policy strategy are at best unclear.

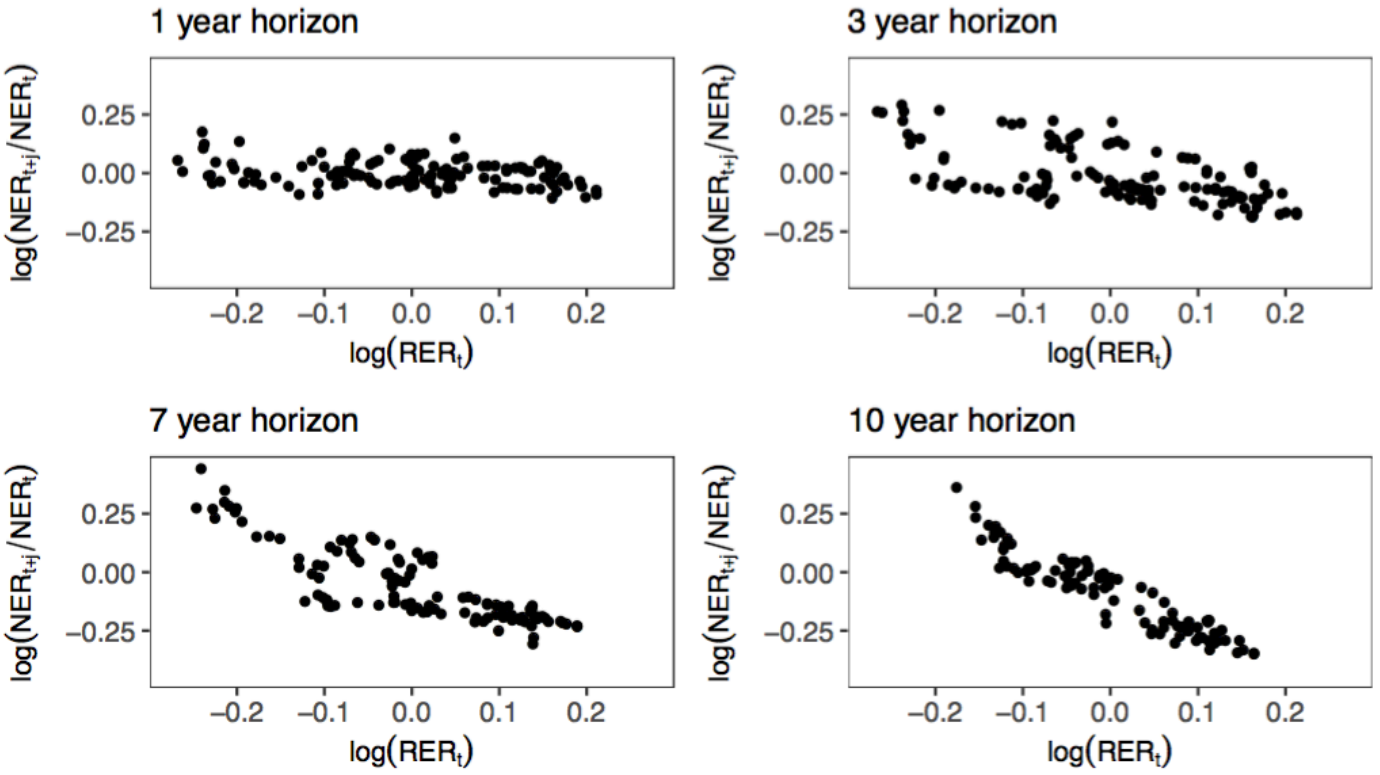
Some definitions and facts

- Define the *nominal* exchange rate as U.S. price of a Cdn dollar.
  - A *rise* in the nominal exchange rate corresponds to an *appreciation* of the Cdn dollar.
- The *real* exchange rate is the relative cost of a typical bundle of consumer goods in Canada and the U.S.
  - Ratio of the U.S. dollar value of the Cdn CPI divided by the U.S. CPI.
  - A *rise* in the real exchange rate means that Cdn consumer goods have become *more expensive* relative to U.S. consumer goods.
- Everything goes through if I consider trade-weighted exchange rates.

Some facts

- Canada's current real exchange rate is highly *negatively* correlated with future changes in the nominal exchange at horizons greater than two years.
  - When Cdn consumer goods are expensive relative to U.S. consumer goods, the Cdn dollar tends to depreciate.
  - This tendency is stronger the longer is the horizon.
- The real exchange rate is virtually *uncorrelated* with future inflation rates at all horizons.
- So Canada's real exchange rate adjusts in the medium and long-run overwhelmingly through changes in *nominal* exchange rates, not through differential inflation rates.

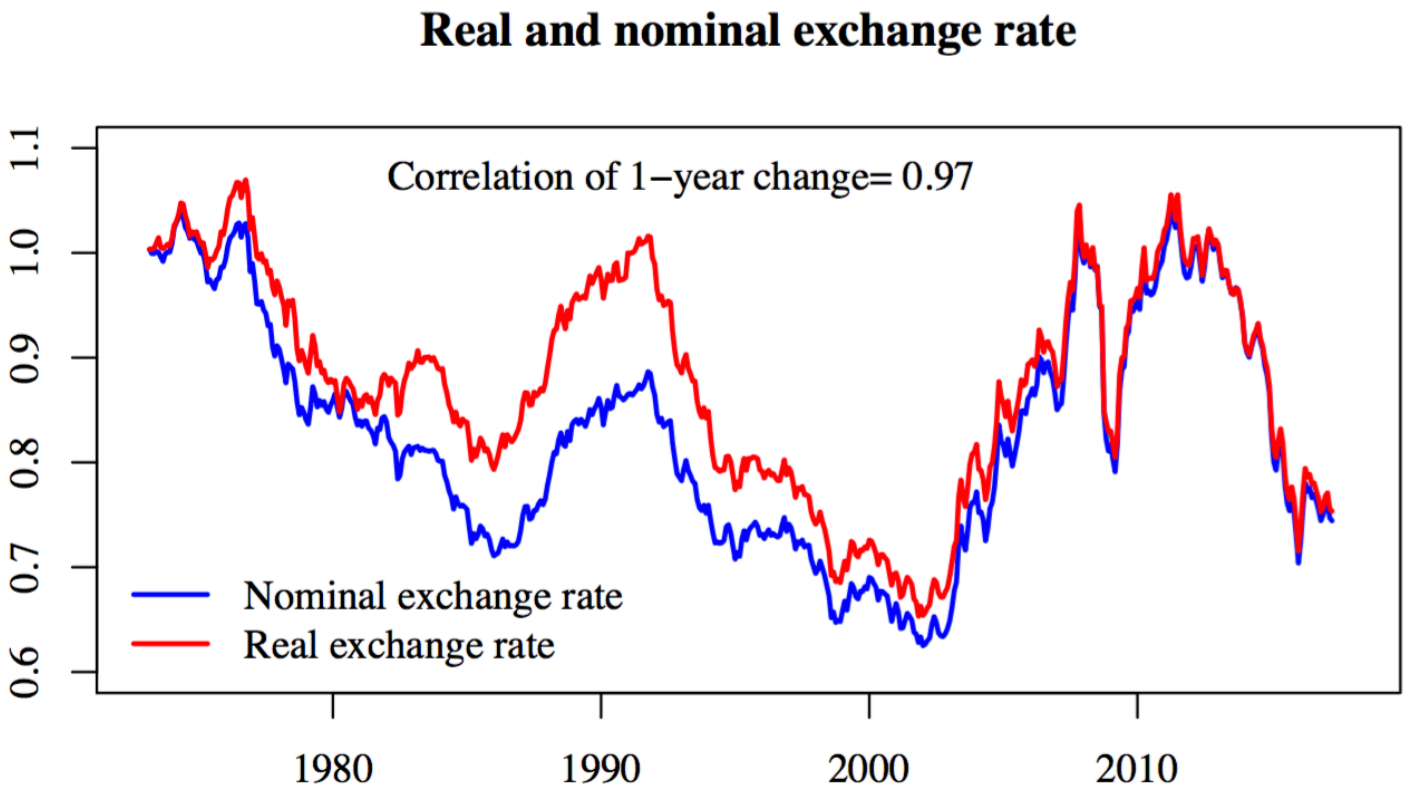
The Cdn real exchange rate and future nominal exchange rates



These Cdn facts hold for a much broader set of countries that share two characteristics

- They have flexible exchange rates and the central bank uses short-term interest rates to keep inflation near its target level.
- The facts don't hold for countries with different monetary policy regimes
  - Quasi-fixed or fixed exchange rate regimes (Hong Kong, China, Euro-area countries).
  - Countries that have crawling pegs or heavily-managed floating exchange.
- For these countries the current real exchange rate is highly negatively correlated with future relative *inflation* rates and uncorrelated with future nominal exchange rates.
  - Real exchange rates adjust overwhelmingly through predictable *inflation* differentials.

Cdn nominal and real exchange rates, 1973:3 – 2017:4



Why are future Cdn exchange rates negatively correlated with the real exchange rate?

- No obvious trend in either nominal or real exchange rates.
- Values of nominal and real exchange rate are virtually the same at the beginning and end of the sample period.
  - Ratio of the Cdn CPI to the U.S. CPI was little changed over a 45-year period.
- Movements in nominal and real exchange rates are highly correlated (**0.975**).
- Remarkably high correlation implies differentials in inflation account for only a small fraction of movements in the real exchange rate.
- Consistent with this observation, the correlation between Canada and US inflation rates is very high **(0.89)**.

What's going on?

- Cost of consumer goods in Canada and the U.S., when measured in the same currency, should converge over time to some long-run average level.
- Absent non-tradable goods, the cost of consumer goods in the two countries should be the same.
- In the presence of non-traded goods, the overall cost of living would be different in the two countries.
- But since Canada and the U.S. have roughly the same long-term growth rate, the ratio of the price of non-tradable goods in the two countries should be stable in the long run.
- So, whether non-tradable goods are important or not, the real exchange rate should be mean reverting.

What's going on?

- A rise in the real exchange rate must be associated with either a depreciation of the Cdn dollar or lower inflation in Canada than in the U.S.
- If Cdn monetary policy is closely aligned with that of the US, inflation rates in the two countries can't be very different in the two countries
- So the adjustment has to occur via nominal exchange rates.
- In sum, if real exchange rate is initially high relative to its long-run average value, future changes in the nominal exchange rate should be negative,
  - The Cdn dollar will depreciate.
- This is exactly the pattern observed in the data, both in terms of within sample dynamic correlations and out-of-sample forecasting (EJR, 2017).

The benefits of Canada's current monetary policy regime

- Canada's current flexible exchange rate regime and monetary policy have supported a low rate and stable rate of inflation while allowing consumers and firms to avoid costly prices and wage changes after shocks to the economy.
- Canada can't unilaterally move to change its monetary policy regime without sacrificing this benefit.
- It's essential to coordinate any changes with our major trading partners.
- Does that mean we should we just stick with a system that has worked so well for Cdns up to now?
- No: the feasibility of that system faces large challenges as we look to the future.

Monetary policy and secular stagnation

- We must prepare the public and ourselves to deal with two key facts

(1) The growth rate of the world economy has been declining since 2008.
    - Slow growth is likely the new normal.

(2) Real interest rates have been declining secularly and will continue to be low.
    - Low real interest rates are likely the new normal.

Slowing growth

IMF projections of real GDP growth rates

	1999-2008	2017	2022
Canada	2.9	2.3	1.8
U.S.	2.6	2.3	1.7
Euro area	2.1	1.6	1.5
China	1.2	1.4	1.6
Japan	1.0	1.2	0.6
India	6.7	6.6	6.2
Mexico	2.3	1.7	2.0
Brazil	-3.6	0.2	1.7

Nominal interest rates are on a secular decline

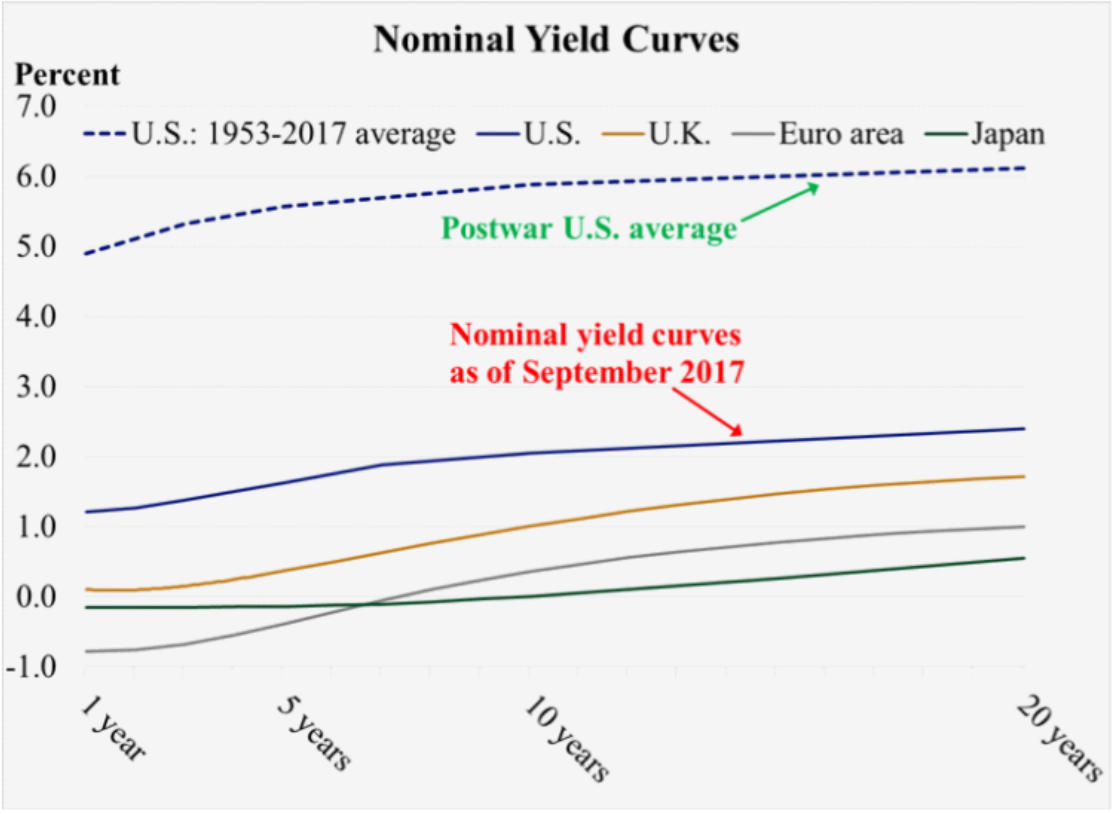
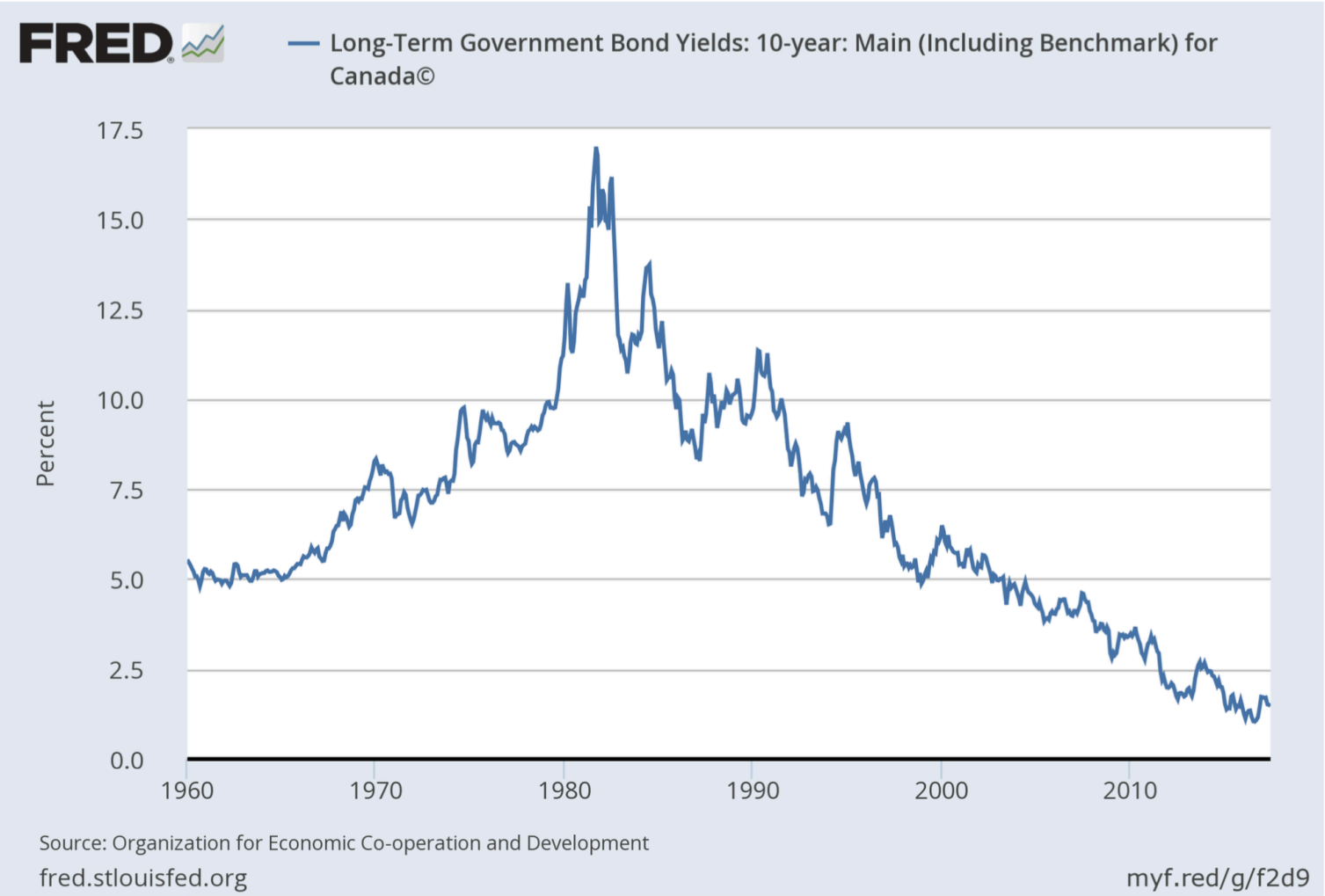
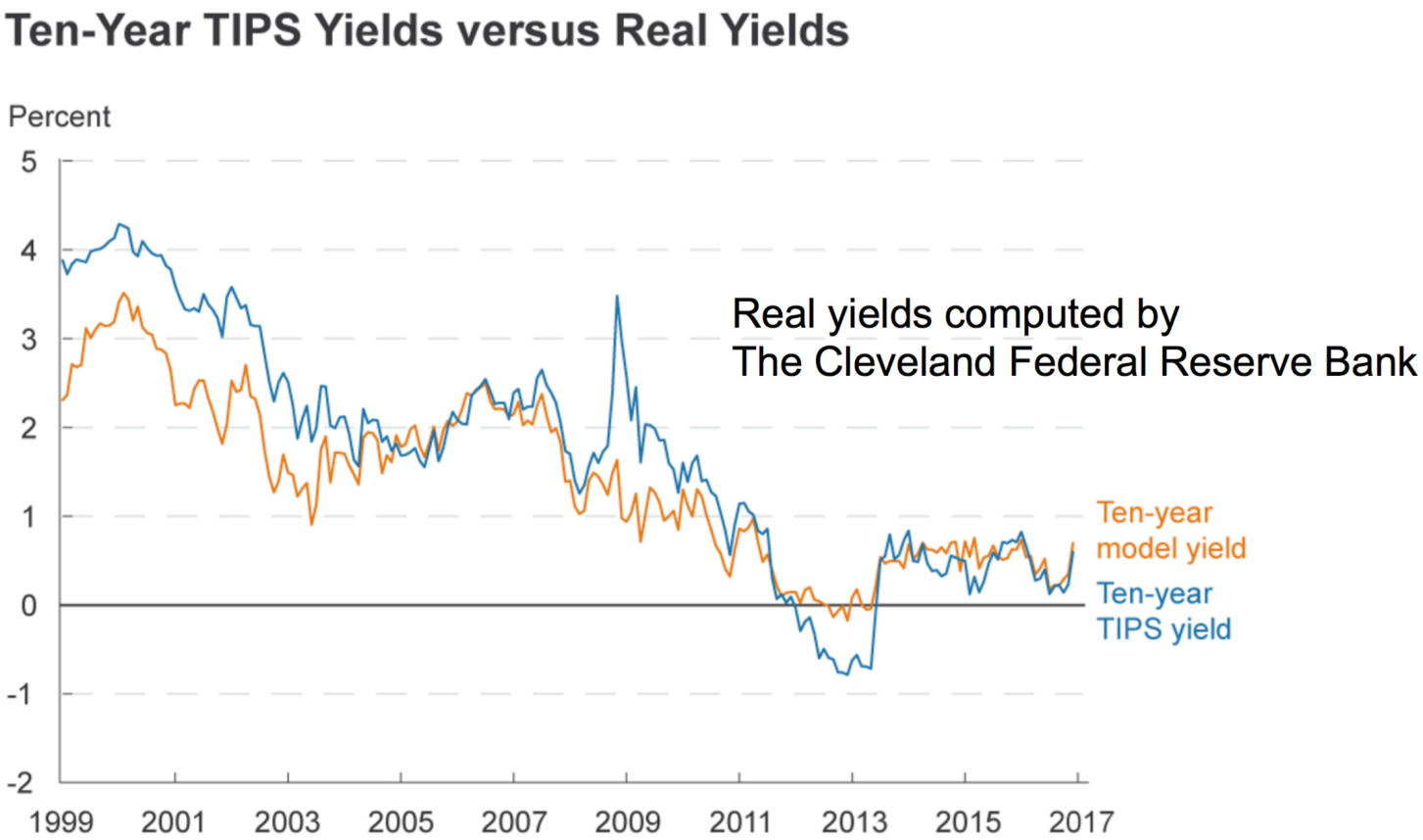


FIGURE: Source: Federal Reserve Board, U.S. Department of the Treasury, Bank of England, European Central Bank and Japan's Ministry of Finance. Last observation: September 7, 2017.

Ten year Canadian interest rates



Real interest rates are also falling



Secular Stagnation?

- Supply-side considerations
  - Declining growth rate of productivity.
  - Declining population growth rates.
  - Declining labor force participation rates.
- Demand-side considerations
  - Declining investment rates relative to high savings rates.
  - Persistent shortfalls in aggregate demand (Summers).
- Demand-based stories seem increasingly unlikely tens years after the financial crisis and at historically low levels of unemployment.

Secular stagnation and interest rates

- Lower output growth is associated with lower 'normal' real interest rates.
- The Bank of Canada and the Fed have begun raising nominal interest rates.
- But we won't go back to the old normal: nominal rates will remain low by historical standards.
- Why?

The natural rate of interest

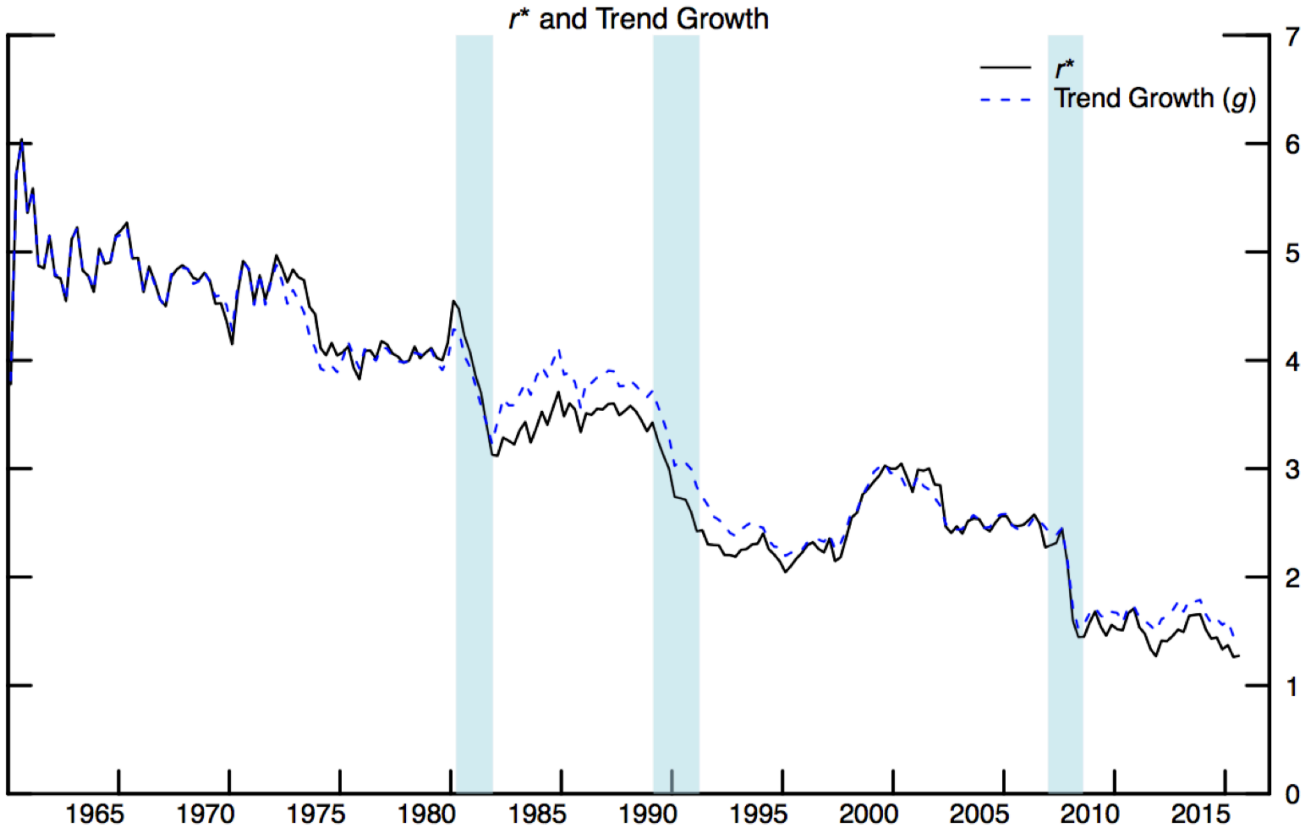
- Over long periods of time the nominal interest rate is equal to Bank of Canada's target rate of inflation plus the *natural rate of interest.*
- The latter is determined in private markets around the world by fundamentals like demographics and the productivity.
- Monetary policy has very little effect on the natural rate of interest.
- If the natural rate of interest has fallen and inflation targets are unchanged, the nominal interest rate must fall.

The natural rate of interest

- Various authors argue that the secular decline in real interest rates reflects a downward trend in the natural rate of interest.
- There's a lot of evidence that the natural rate of interest has fallen.
- Example: Holston, Laubach and Williams (December, 2016)
  - Estimate the natural rate of interest for the U.S., the Euro area, the U.K. and Canada.
  - It has fallen to historically low levels in all four economies.
  - The decline is, in large, part explained by a significant decline in the estimated trend growth rates of output in all four economies.

Holston et al estimates for Canada

The natural rate of interest and the trend growth rate of output



The natural rate of interest

- Similar pattern for U.S., the Euro area, the U.K. and Canada
  - A secular downward trend in the estimated trend growth rate of output over the past 25 years.
  - The fall in the natural rate of interest is highly correlated with the fall in the trend growth rates of output.

- While the numbers differ, the pattern of declining trend GDP growth is consistent with alternative estimates based on methodologies that decompose potential output into its component parts.

- Example: Congressional Budget Office, 2016; and International Monetary Fund 2015.
  - Highlight the roles of slowing labor force growth and a slowdown in trend productivity growth.

- See Alexopolous and Cohen (2017) for a more optimistic view.

What does all of this have to do with monetary policy?

- The new normal interest depends critically on what we assume about the natural rate of interest.
- Under old assumptions about the natural rate and trend output, policy rates will go back to around 4% eventually.
- If we use Holston et al numbers or the output gap as calculated by the Congressional Budget Office, short term interest rates are likely to be much lower.

Policy makers' Projections of Federal Funds Rate

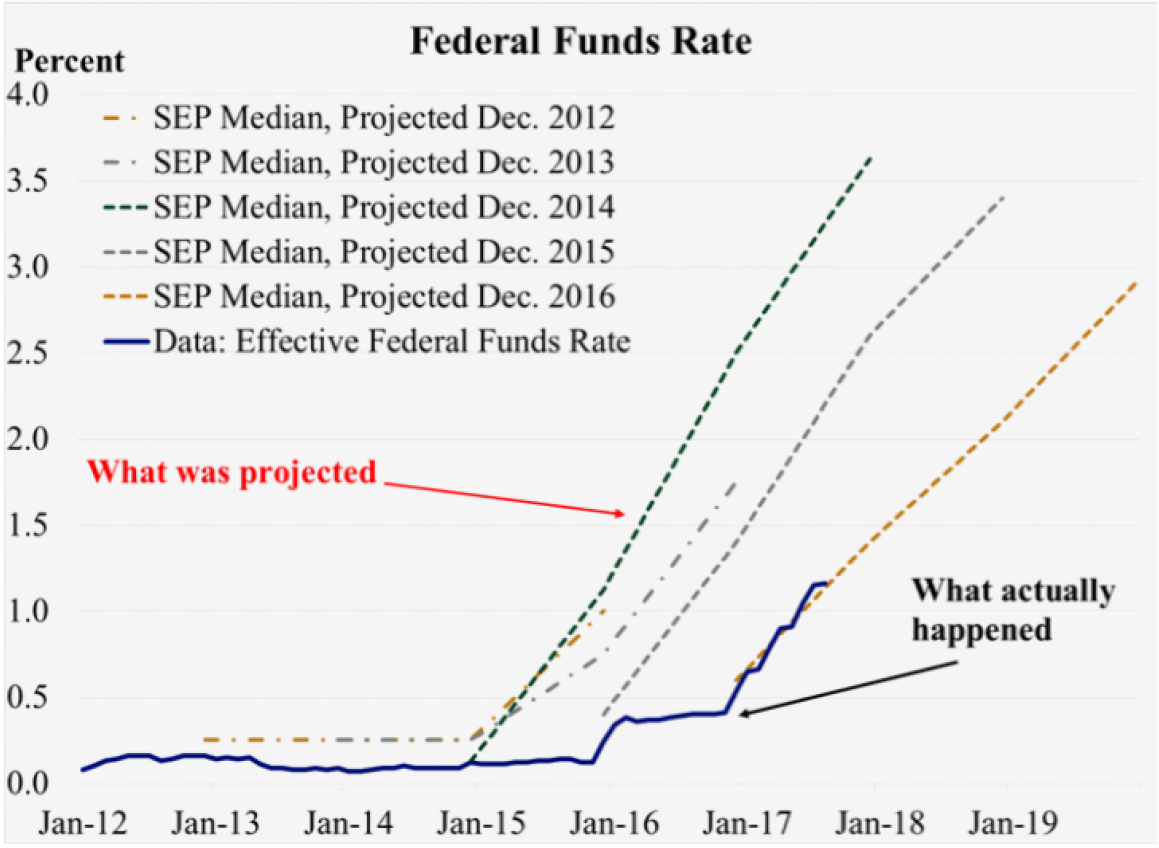


FIGURE: Source: Federal Reserve Board and author's calculations. Last observation: August 2017.

Binding effective lower rate on nominal interest rates

- Conventional monetary policy calls for cutting the interest rate when we're in a recession.
  - This strategy is consistent with the Bank of Canada's strategy for achieving low and stable inflation rates if inflation falls in a recession.
- Problem: you can't go (much) below zero: the Effective Lower Bound (ELB).
- How often will the ELB constrain be binding after negative shocks to the economy?
  - This issue is the subject of intense research.
- Recent paper in the BPEA, Kiley and Roberds (2017), suggests that the constraint will be binding around 40% of the time!

Implications

- Estimates vary but there's concensus that monetary policy will be constrained by the ELB more frequently and for longer.
- It's *critical* that the Bank of Canada coordinate with other central banks in developing a consistent strategy for dealing with the problem.
- Unconventional monetary policy and effective risk management might help with the problem.
- But we've learned from Japan and our own experience that there's limits to how useful such policies are.
- Some economists like Blanchard have advocated that central banks raise normal inflation targets
  - This amounts to paying a social insurance premium so that monetary policy has room to lower rates when the inevitable big negative shocks come.
- Surely there's a better way to deal with the problem.

Conclusion

- The Bank of Canada has delivered on its promises.
  - Low and stable inflation rates.
- They've done it in a way that's allowed the nominal exchange rate to help buffer the Cdn economy from shocks.
- If we change the Bank's mandate, say by moving to price level rather than inflation rate targeting, we'll be moving to a system where Canadians face more volatile inflation rates.
- I can't recommend such a change.

The challenge for monetary policy

- We can't stick with the old paradigm.
- The ELB is likely to be binding far more in the future than in the past.
- Monetary economists and policy makers around the globe haven't yet delivered effective policies that works as interest rate cuts at mitigating the effects of shocks when the ELB is binding.
- This is the central monetary policy problem of our time.
- Precisely because Canada is an open economy, it must take the lead in finding a *coordinated* attack on the problem.
- Finally, the Bank must help the public and policy makers understand the limits to monetary policy if we are in fact in an era of secular stagnation.