

# Rethinking the Fed's 2 percent inflation target

A report from the Hutchins Center on Fiscal & Monetary Policy at Brookings with contributions from **Lawrence H. Summers, David Wessel, and John David Murray**



Hutchins Center  
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## ABOUT THE REPORT

This report is drawn in large part from a January 2018 conference convened by the Hutchins Center on Fiscal & Monetary Policy at Brookings. Unless otherwise identified, the quotations in this report come from that conference. For video and a full transcript of the conference, see <https://www.brookings.edu/events/should-the-fed-stick-with-the-2-percent-inflation-target-or-rethink-it/>.

## STATEMENT OF INDEPENDENCE

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# Why the Fed needs a new monetary policy framework

By Lawrence H. Summers

The following is drawn from remarks Lawrence H. Summers, the Harvard University economist and former Secretary of the Treasury, made at the [Hutchins Center conference](#).

I have been asked to make the case that a new monetary policy framework that moves away from the current 2 percent inflation target would permit the economy to achieve higher levels of output and employment over time. Since I am fairly confident that improvement on these dimensions is possible but much less sure just what framework is appropriate, I am pleased to accept this assignment. I will argue that any appropriate framework will have the property that in normal times the federal funds rate will exceed 4 percent, an outcome to which markets and the Fed currently assign low probability.

First, I will review the history behind the choice of a 2 percent inflation target and argue that the logic applied when it was chosen mandates a higher target today. Second, I will explain why I find the broad “new Keynesian” framework in which most discussion of monetary policy is carried on to be unsatisfactory. Third, I will argue that the current 2 percent inflation target framework makes it very likely that the next recession will come sooner and be more protracted than is necessary as well as putting excessive pressure on fiscal policy. Finally, I shall consider possible alternative monetary policy approaches.

## I. The choice of the 2 percent inflation target

On the Federal Reserve website the question “Why does the Federal Reserve aim for 2 percent inflation over time?” is posed and answered. The key sentences of the answer are “Over time a higher inflation rate would reduce the public’s ability to make accurate economic and financial decisions. On the other hand, a lower inflation rate would be associated with an elevated probability of falling into deflation...a phenomenon associated with very weak economic conditions. Having at least a small level of inflation makes it less likely that the economy will experience harmful deflation if economic conditions weaken.” The particular choice of 2 percent as a target dates from discussions of operationalizing the idea of price stability that took place in the FOMC in the mid-1990s.

The Fed’s explanation of its choice of a 2 percent target makes clear that it involves trading off what are seen as the costs of inflation and the benefits of avoiding deflation. It is natural to ask whether the nature of this tradeoff has changed over the last generation since the Fed chose to define price stability as 2 percent annual growth in the Personal Consumption Expenditures (PCE) deflator.

I do not see much that has changed that bears on the cost of higher inflation in making it harder for economic agents to plan. On the other hand there are compelling reasons to believe that the risks of deflation have increased. First, the world has seen a substantial amount of deflation or very low inflation over the last 20 years. In Japan and significant parts of Europe, deflation has taken place over several year periods. And there were moments during the financial crisis when deflation appeared a real risk for the United States. Second, deflation scenarios occur when the economy falls into the liquidity trap where short term safe nominal rates cannot be reduced any further even though there is economic slack and inflation rates are declining. On any reasonable calculation this is a much greater risk than it could have appeared in the mid-1990s. Just consider the decline in either the Fed's judgement of neutral real rates or market judgements of future real rates. The median FOMC member today believes that neutral real rates are 75 basis points. This is roughly in line with long term real rates inferred from the TIPS market.

While the Fed didn't forecast neutral rates in the mid-1990s and indexed bonds had not yet been introduced, comparisons of nominal yields and prevailing inflation suggests that expected real rates were 2 percent or more.

If deflation risks look considerably greater than they did in the 1990s and the costs of inflation look about the same, it follows that whatever inflation target was appropriate then is too low today. I will take up the questions of how consequential it is to have too low an inflation target and of what kind of framework is appropriate in the context of today's economy. But first I want to offer a major caveat regarding the theoretical frameworks used in most discussions of monetary policy.

## II. The natural rate hypothesis straitjacket

The traditional view of macroeconomists and macroeconomic policymakers was that the most important objective of macroeconomic policy including, in particular, monetary policy was to maximize an economy's level of output and employment over time. (See Blanchard and Summers (2017) for an elaboration of many of the ideas in this section) The idea was that with better policy, catastrophes like the Depression could be avoided and recessions could be minimized without there being important losses of output or employment in boom times. As reflected in Jim Tobin's famous quip that "it takes a heap of Harberger triangles to fill an Okun Gap", maintaining adequate and stable demand was seen as a central requirement of sound economic policy.

All of this dramatically changed with the Friedman and Phelps proclamation of the natural rate hypothesis and with the stagflation of the 1970s. Economists concluded that sustained higher rates of inflation would not in general be associated with sustained higher levels of output and employment—this was the essential content of the natural rate hypothesis. In Friedman's original formulation the Phillips curve represented not a tradeoff between unemployment and inflation but between unemployment and the acceleration of inflation. Other formulations associated with the New Classical macroeconomics asserted that unemployment could be reduced only when inflation exceeded expectations.

The policy conclusion was similar for all formulations of the natural rate hypothesis. Since monetary policy could not influence the average level of output and employment over

time, it should properly be dedicated to achieving price stability however defined and minimizing the volatility of output. It quickly followed from work on dynamic consistency that this could best be done by finding commitment devices that reduced inflationary expectations along with inflation. Central bank independence came to be seen as such a device, as did the inflation targeting frameworks now in widespread use. Crucially central banks and even scholars who called themselves new Keynesians abandoned the goal of using monetary policy to raise the level of output over time. The macroeconomic models large and small on which central banks relied almost without exception assumed the independence of long run average output levels from monetary policies. Given this assumption the case for a low inflation target is indeed secure, though the issue of just what that target should be remains.

However three strands of recent macroeconomic research call into question the premise that monetary policy cannot over long intervals affect output and employment. First, an increasing body of evidence suggests the importance of hysteresis effects whereby recessions reduce subsequent *potential output* (Blanchard 2018, Yagan 2017, Blanchard Cerutti and Summers 2015, Ball 2014). If such effects are present more aggressive monetary policies that prevent or rapidly mitigate recessions will raise levels of output over time. Hysteresis effects may arise from many different sources including reduced levels of investment in physical capital and R&D, lost human capital as those who fall out of work become habituated to being out of work, reductions in the social stigma associated with nonwork, or changes in wage setting practices as firms' attached workforces shrink.

Second, recent work by Nakamura and Steinsson building on Milton Friedman's "plucking" model of business fluctuations suggests that it may be better to think of business fluctuations not as symmetric movements around an average level of output whose amplitude is desirable to minimize, but more like periods of illness when output and employment fall short of desired levels (Dupraz, Nakamura and Steinsson 2017). The evidence for this proposition takes the form of demonstrating that the correlation between the size of downturns and subsequent upturns is much greater than the correlation between upturns and subsequent downturns. If one thought of as recessions as like periodic fevers this is exactly what one would expect. With plucking effects, as with hysteresis effects, the case for minimizing recessions is magnified because there is no reason to expect that output lost in recessions is subsequently made up.

Third, ideas related to secular stagnation suggest that economies may be vulnerable to prolonged output shortfalls if monetary policy is unable because of constraints on the lowering of nominal interest rates to achieve real interest rates necessary for full employment levels of demand. Closely related is the argument of Akerlof, Dickens and Perry (1996) that because of a zero lower bound on nominal wage changes the Phillips curve may not be vertical at low rates of inflation. These arguments make a case that a higher rate of inflation, by relaxing constraints that might otherwise bind, allows more output.

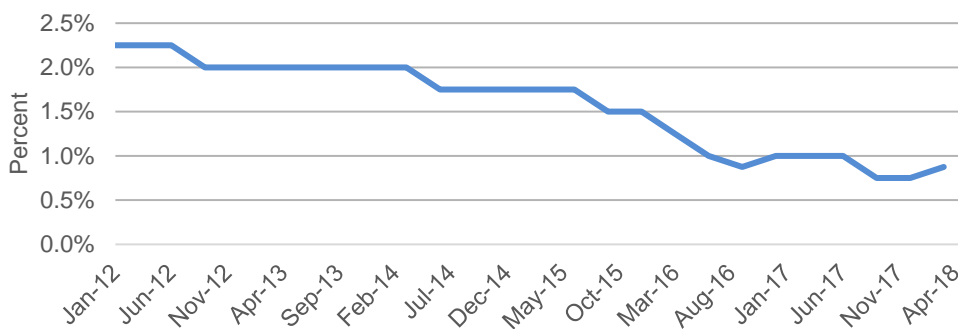
All of this matters for consideration of optimal monetary policy. Almost all discussions of monetary policy assume that it can control the level of inflation over time, but that it can affect only the volatility and not the level of output over time. If this is not the case, then monetary policy choices are more consequential than is commonly supposed and issues relating to the average level of output should likely be central in the determination of monetary policy.

### III. Consequences of the current monetary policy framework

Within the current policy framework we are likely to have, by historical standards, very low rates for a very large fraction of the time going forward even in good economic times. Federal Reserve policymakers' view, expressed in their Survey of Economic Projections, is that the neutral real rate is in the neighborhood of 1 percent (Figure 1). We're at more risk, at least currently, of falling short of the Fed's 2 percent inflation target than we are of exceeding it. And it's a good rule with official projections – think about the weather bureau—that when they keep being revised in one direction, they continue to be revised in that direction. In other words, there is positive serial correlation in the revisions. So, it would be my judgment that further reductions in predictions of the neutral real rate are more likely than further increases.

The market essentially shares this view. The long-run LIBOR forecast is 2.3 percent, which is less than the Fed's 2.8 percent. There a reason for that discrepancy: the market is projecting the expected value; the Fed is projecting the mode. On the other hand, the market forecast builds in a term premium whereas the Fed's forecast doesn't. It is a reasonable judgment, then, that if we continue to operate in our current framework, in good times nominal interest rates will typically be in the 2 to 3 percent range. Obviously, that's a projection made with substantial error, but I cannot see good reasons for thinking that the Fed or the market estimates are massive underestimates.

Median FOMC Member Forecast for Long Run Neutral Real Rate



Source: Federal Reserve Summary of Economic Projections.

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Recessions will come. What is the likelihood? Recoveries, unlike people, do not die of old age. Once one is significantly into a recovery, the probability of recession is essentially independent of the length of the recovery. That probability, depending upon just how far back one looks, is something in the neighborhood of 15 to 20 percent on an annual basis. That's a historical reading looking back through 50-odd years of U.S. business cycle history. Is it the right view going forward? You can make a case that it's an understatement of the risks going forward. That case would emphasize that normal growth is now 2 percent rather

than 3.5 percent, and so you have to slip less far to fall into recession. It would emphasize a higher degree of geopolitical risk now than in the past. It would emphasize that we have a more financialized, more levered economy with higher ratios of wealth to income that is, therefore, more at risk of financial disturbance. A case for more optimism—that the past probability of recession is an overestimate—would emphasize lower inflation, and less risk of inflation getting out of control forcing the Fed to hit the brakes hard. It would emphasize smaller inventory cycles in a less tangible and physical economy. I'm not convinced that one of those sets of considerations is far more important than the other so I think 15 percent annually is a reasonable estimate of the probability of a downturn.

In the next recession, monetary policy of the standard form will lack room to do what it usually does. On average, as Table 1 illustrates, short-term nominal interest rates are reduced by 5 percentage points to combat recessions. If you look at real rates you similarly conclude that about a 5 percent reduction in rates is necessary. So the overwhelming likelihood is that when recession comes monetary policy will not have sufficient room to cut rates as much as it would like to within the current framework. If one believes that neutral real rates will decline further or simply that there's a risk that they will decline further, this effect is, of course, magnified.

	Nominal			Real		
	Start	Final	Easing	Start	Final	Easing
<b>1960</b>	3.9	1.2	2.7	1.9	-0.1	2.0
<b>1970</b>	5.6	3.5	2.1	4.5	-0.9	5.4
<b>1974</b>	11.0	4.8	6.3	6.4	-1.6	8.0
<b>1981</b>	20.0	9.5	10.5	8.7	-0.1	8.8
<b>1990</b>	7.8	3.0	4.8	5.5	0.1	5.4
<b>2000</b>	6.5	1.0	5.5	4.8	-0.4	5.2
<b>2007</b>	5.3	0.0	5.3	3.3	-1.1	4.4
			<b>5.3</b>			<b>5.6</b>

Source: Federal Reserve, Bureau of Economic Analysis

These conclusions are not very far from those reached in a much more elaborate way by Federal Reserve Board economists Michael T. Kiley and John M. Roberts (2017). Kiley and Roberts conclude that that 30 or 40 percent of the time we will be at the zero lower bound. Alternatively if you assume that once every seven years we'll be in recession as suggested by the annual 15 percent recession probability, and you assume that once we get into recession rates will be constrained by the zero lower bound for three years, then we will be at the zero lower bound about 30 percent of the time given our current framework. If anything, the Kiley-Roberts assumption of a 1 percent neutral real rate is way too high as a certainty-equivalent estimate of what the neutral real rate actually is, recognizing that the likelihood of the ZLB is very nonlinear in the neutral rate.



Within the Kiley-Roberts framework, the expected output losses are large as a result of binding constraints on the ability to reduce interest rates. They estimate an output loss above 1 percent of GDP on average. At current magnitudes that would be about \$200 billion dollars a year. I would offer more of a back-of-the-envelope approach. Suppose we get into a ZLB episode once every decade, and that when this happens, monetary policy is constrained for three years. This is about 40 percent as long as it was constrained after the 2008 crisis. Suppose we lose one percent of GDP the first year relative to where we would've been, two percent of GDP the next year, and one percent of GDP in the last year. That works out to a loss of about 4 percent of GDP once a decade or about \$100 billion dollars a year. The calculation would be an underestimate if recessions were more frequent than I have suggested, if they were more severe or if they had substantial hysteresis effects.

The main challenge to this line of argument is that alternative forms of stimulus can be provided so the zero lower bound is not an important constraint. That's what Janet Yellen tried to argue in her Jackson Hole speech in 2016 (Yellen 2016). I am far from convinced. First, starting at a 2.5 percent rate on 10-year Treasuries, imagine that the economy goes into recession and that the Fed cuts short-term rates four or five times, bringing the Federal funds rate to 0.25 percent. If nobody does anything else, the ten-year rate will find its way down to the neighborhood of 1.5 percent. It is questionable how much extra stimulus would be developed by any further reduction in long-term rates below 1.5 percentage points. And that applies with respect to any monetary tool that might be developed.

With respect to quantitative easing, I would note that there's less room now than there was previously, and that it is far from clear in retrospect that it is as effective, once periods of major illiquidity are removed, as is often supposed. As Ben Bernanke (2014) has acknowledged, it doesn't really work in theory. The evidence now is much less clear than it once appeared that it works in practice (Greenlaw, Hamilton, Harris and West 2018)—especially in light of the awkward fact that the quantity of U.S. public debt that markets have to absorb increased rather than decreased during the QE period given the activities of the Treasury debt managers (Greenwood, Hanson, Rudolph and Summers 2016). There is a further awkwardness in the arguments around QE. Supposedly it creates a shortage of outstanding Treasury debt and therefore drives up its price. If this were in fact the case, one would expect to see it trade at a premium to substitutes that the private sector could manufacture. In fact negative swap spreads during much of the QE period suggest if anything that markets were pricing an abundance of Treasury securities. So, I am completely unconvinced that QE can be our salvation next time round.

What about forward guidance? The Fed is moving with some vigor towards tightening while inflation is, at this moment, well short of 2 percent. The fact that the Fed is not willing to predict inflation above 2 percent at any moment, even a hypothetical moment, of the tenth year of recovery with an unemployment rate of 4 percent, must be undercutting whatever credibility might previously have attached to the idea that the Fed would be willing to live with substantially super 2 percent inflation rates.

Finally, there is the possibility of fiscal policy. I note that growing levels of the debt-to-GDP ratio, coupled with readings of the political process and the way the political process responded to the aftermath of the American Recovery and Reinvestment Act of 2009, suggests little basis for serenity that substantial fiscal policy will be quickly entered into the next time the economy goes into recession. If we really could work counter-cyclical stabilization policy well in our political system, that would attenuate somewhat these arguments,

but it's actually a pretty complicated business even if you leave aside the infirmities of our political system. What's the instrument of counter-cyclical stabilization going to be? I have lived this in helping to design the 2009 Recovery Act. It just turns out to be very difficult to turn spending on and off rapidly. It is sometimes suggested that this could be mitigated by requiring units of government to maintain lists of shovel-ready projects available for funding when a countercyclical moment comes. Perhaps. But experience suggests that this may lead to the most promising projects being delayed as the economy turns down in the hope of receiving outside funding when a countercyclical program is introduced. I recall at the NEC spending the better part of an afternoon trying to figure out how to give money to the National Institutes of Health as a temporary burst in way that would ensure efficient spending. It turned out to be almost impossible. Measures on the tax side are another possibility but there is a real question about the efficacy of temporary measures and the ability of the Congress to keep them temporary.

## IV. What should be done?

My conclusion, therefore, is that in our current framework the economy is singularly brittle. We do not have a basis for assuming that monetary policy will be able, as rapidly as necessary, to lift us out of the next recession. This has a substantial cost likely in the range of at least \$1 trillion over the next decade. This suggests the suboptimality of our current monetary policy framework.

I would suggest a criterion for choosing a monetary framework, when we next choose one, should be that it is a framework that contemplates enough room to respond to a recession. In other words, it should foresee nominal interest rates in the range of 5 percent in normal times. How that is achieved seems to me to be a question of second-order importance. What is of primary importance is that we establish a framework in which our best guess is that we will have room rather than that we won't have room to respond to the next recession.

If we do that and I am wrong in my judgements about the neutral rate of interest or the consequences of extraordinary monetary measures, we will live with marginally, perhaps slightly more than marginally, higher inflation. I have never seen a calculation of the costs of running say 3 rather than 2 percent inflation that are terribly large. But if I am right, or if the trend towards a declining neutral real rate continues and we ignore it, we will put ourselves at risk of very substantially exacerbating the next recession with grave consequences for lost output and employment and quite possibly matters of political economy as well. These consequences would dwarf those of marginally higher inflation. So, I would hope that all consideration of monetary frameworks emphasized centrally the need to provide for adequate response to the next recession.

If I had to choose one framework today, I would choose a nominal GDP target of 5 to 6 percent. And I would make that choice for two reasons. First, it would attenuate the issues around explicitly announcing a higher inflation target, which I think are a little bit problematic on political economy grounds. Second, a nominal GDP target has an additional advantage in its implicit response to changing conditions. Arithmetically a nominal GDP target has the property that the expected rate of inflation rises as the expected real growth in

GDP declines. This is desirable. If growth in underlying real GDP declines, neutral real interest rates are likely to decline as well. In this case allowing higher inflation to make possible even more negative real rates reduces the risk of policy impotence.

A smaller, probably more practical short run step for the Fed would be taking the idea that the current 2 percent inflation target is symmetric seriously. When not a single one of the “dots” contemplates inflation above 2 percent even after nine years of below target inflation, and with unprecedentedly low unemployment in prospect, it is hard to take the idea of symmetry around the 2 percent target seriously. Providing explicitly for the idea that inflation will rise above 2 percent during the late stages of expansions with the expectation that it will decline in subsequent recessions, would enable the Fed to push up average rates of inflation and relax zero lower bound constraints.

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# Alternatives to the Fed’s 2 percent inflation target

By David Wessel

## I. Introduction

Congress charges the Federal Reserve with pursuing “[maximum employment](#)” and “[stable prices](#),” but leaves it to the Fed to define those terms. When Alan Greenspan was Fed chair, he once defined price stability as “[that state in which expected changes in the general price level do not effectively alter business and household decisions](#).” In other words, he meant inflation (the change in the prices of goods and services) should be low enough so people don’t think about it in their economic lives. Over the past couple decades, central banks around the world have put a number on that inflation rate—around 2 percent. That was thought to be close enough to zero to be plausibly defined as price stability, especially given the tendency of official price measures to overstate increases in the cost of living, but high enough to ward off unwelcome bouts of deflation or falling prices. Once a few central banks embraced a 2 percent target, it was easier for the rest to pick that number, too. (“[T]he 2 percent target acquired the great advantage of conventionality: central banks could not easily be accused of acting irresponsibly when they had the same inflation target as everyone else,” economist [Paul Krugman has noted](#).)

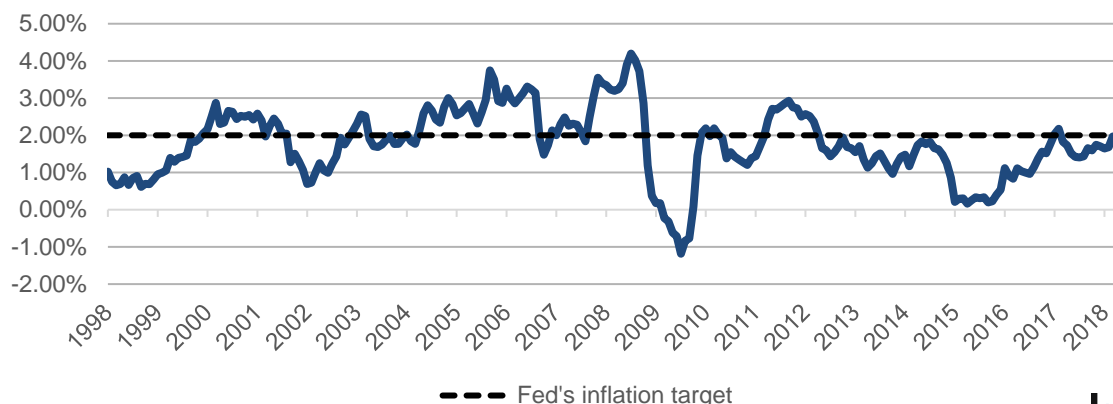
In 1996, Fed policymakers privately agreed that their target for inflation was 2 percent, but, at [Greenspan’s insistence, they didn’t tell anyone](#). In 2012, at the urging of then-Chair Ben Bernanke, the Fed formally and publicly announced that they were targeting a 2 percent inflation rate. The Fed’s strategy, approved annually by its policy-making Federal Open Market Committee and tweaked a bit since 2012, says:

“The Committee [reaffirms its judgment that inflation at the rate of 2 percent](#), as measured by the annual change in the price index for personal consumption expenditures, is most consistent over the longer run with the Federal Reserve’s statutory mandate. The Committee would be concerned if inflation were running persistently above or below this objective. Communicating this symmetric inflation goal clearly to the public helps keep longer-term inflation expectations firmly anchored, thereby fostering price stability and moderate long-term interest rates and enhancing the Committee’s ability to promote maximum employment in the face of significant economic disturbances.”

In fact, inflation fell short of the Fed’s 2 percent target for much of the past decade.

## Fed's favorite inflation measure

Personal Consumption Expenditure price index, year-over-year percentage change



Source: Haver Analytics.

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Three years after Bernanke persuaded his colleagues to adopt the target, he said, [“I don’t see anything magical about targeting 2 percent inflation.”](#) My advocacy of inflation targets as an academic and Fed governor was based much more on the transparency and communication advantages of the approach and not as much on the specific choice of target.”

Today, the 2 percent inflation target is under scrutiny, in part because of fears that framework will hamper the Fed’s ability to fight future recessions. In the early 2000s, economists at the Fed and elsewhere estimated that *the inflation-adjusted (or real) neutral interest rate*—the *short-term* interest rate expected to prevail when the economy is at full employment and prices are stable—was around 3 percent. With 2 percent inflation and a 3 percent real neutral rate, then, *nominal rates* would hover around 5 percent when all was calm. In a recession, the Fed would have plenty of room to cut interest rates by 4 or 5 percentage points as it often does in a recession.

The latest projections of the [long-run neutral real rate are much lower](#)—perhaps 1 percent or even less. Most Fed officials project that the nominal short-term interest rate, the one the Fed influences most directly, [will be between 2.8 percent to 3.0 percent in the long run](#), well below [the 1960-2007 average of 6 percent](#). Because getting interest rates much below zero is impossible, the Fed won’t be able to cut rates by 4 or 5 percentage points when the next recession arrives, and that could prolong the pain of any downturn.

The Fed cut short-term interest rates to zero in 2008 and, to the surprise of almost everyone, kept them there for seven years. Boston Federal Reserve Bank President Eric Rosengren says that when the intellectual groundwork for the 2 percent target was laid, he and others “didn’t think we were going to hit the zero lower bound very often and we didn’t think it was going to be very hard to get off that zero lower bound.” Today, Fed policymakers and outside economists anticipate interest rates are likely to hit zero repeatedly over the next few decades

Abandoning the 2 percent inflation target for a higher target or a different regime would not be easy. “We’re not starting with a blank slate,” says Bernanke. “We do have a framework, a 2 percent target in which there is a tremendous amount of investment in the sense of communication, of years of experience and anchoring of expectations around 2 percent inflation targets. The argument that says, ‘Well, what would we do if we start from

scratch?’ is interesting for academics but maybe not the most relevant question starting from where we are.”

Nonetheless, several current and former Fed policymakers advocate examining the merits of keeping, changing or replacing the 2 percent inflation-target framework so the Fed can better to manage the economy in the years ahead. The choice matters: The framework guides Fed officials as they decide when and how much to move interest rates. With a different framework, the Fed might not have been raising short-term interest rates so much in 2017 and 2018. The framework influences financial market expectations and, thus, the level of longer-term interest rates and the stock market. If credible, a framework gives businesses and consumers, borrowers and lenders, an idea of how much inflation to factor into their decisions. And, importantly in a democracy, a well-explained framework gives citizens and their elected representatives a yardstick against which to measure the Fed’s performance.

This report seeks to shed light on two questions: What are the arguments for keeping, changing or replacing the 2 percent inflation target? And if it were to be replaced, what should replace it?

## II. Raise the inflation target

One alternative to the Fed’s current approach would be to keep targeting the inflation rate, but to raise the target from the current 2 percent, perhaps to 3 percent or 4 percent. The case for this is straightforward: When financial markets anticipate more inflation, nominal interest rates are generally higher. And when nominal interest rates are higher, the Fed has more room to cut them at times when the economy slows too much or heads for recession. This would reduce the likelihood that short-term interest rates would fall to zero, a circumstance that the Fed would prefer to avoid because it makes using monetary policy to revive a struggling economy more difficult.

The choice of 2 percent for an inflation target may have been wise when it was made decades ago, but may not be the best choice for today’s economy. “Even if 2 percent was exactly the right number based on what we knew in 2006, it cannot be the right number today,” says Olivier Blanchard, an MIT economics professor emeritus now at the Peterson Institute for International Economics [who drew criticism in 2010 when, as chief economist at the International Monetary Fund, he publicly suggested lifting the target](#). What’s changed? The real neutral rate of interest (the one that’ll prevail when all is calm, unemployment is low and prices are stable) is believed to be lower than it used to be, increasing the risk that nominal interest rates will be constrained by the zero lower bound. Projecting the long-run real neutral rate of interest is difficult; it could turn out to be higher or lower than the current consensus forecast. Blanchard argues that the Fed would be wise to worry more about the possibility that the neutral rate will turn out to be lower than expected than that it’ll be higher than expected; the former poses much bigger problems for monetary policy makers, he says. And, he adds, there’s no sound economic research that shows 2 percent to be the economically optimal inflation rate nor that demonstrates that the costs to economic efficiency of 3 percent or 4 percent inflation are significantly greater than the costs of 2 percent inflation.

These arguments do not meet with universal applause. As noted earlier, Bernanke acknowledges that it might have been better to pick a higher number initially, but now that 2 percent is widely seen as the definition of “price stability,” it’d be unwise and difficult to change it. “The Federal Reserve is not going to adopt the 4 percent inflation target. It’s just not going to happen,” he says flatly. Some members of Congress consider anything higher than 2 percent a violation of the Fed’s “price stability” mandate and suggest any upward move would require a change in the law. William Dudley, the former president of the New York Fed, agrees: “I [doubt that a higher inflation target would be viewed as consistent](#) with the Federal Reserve’s Congressional mandate to pursue price stability,” he has said.

Blanchard himself concedes that lifting the target would sacrifice a big advantage of the 2 percent target: Inflation is no longer salient in Americans’ economic lives. “Inflation was on our mind when we had to take mortgages and inflation was 5 percent or 10 percent and we really had to think about it and everybody had to think about it in some ways,” he says. “I think most of us as individuals, not as professional economists, have not thought much about inflation in the last few years. It is just very low, and that’s exactly why Greenspan wanted basically a level of inflation which is sufficiently low that nobody cares.” As a result, the Fed can confidently cut interest rates when necessary without prompting consumers, businesses or markets to anticipate that inflation will zoom in the future. “I suspect if we move to 4 percent,” Blanchard adds, “then people will be more aware of movements in inflation, and then get into what we’ve seen in the past: expectations of inflation adjusting to movements in inflation faster and making the job of the central bank more difficult.”

Some economists argue that lifting the inflation target by a percentage point or two could lead to even more inflation. “It is really more difficult to stabilize inflation at the 4 percent level than at the 2 percent level,” says Frederic Mishkin, a former Fed governor now at Columbia Business School. Adds Bernanke: “Folks would say, well, if we go to 4 percent, why not go to 6 percent. It’d be very difficult to tie down expectations at 4 percent.”

Laurence Ball of Johns Hopkins University disagrees. “[History does not suggest that it would be ‘difficult to tie down expectations’ if inflation rises modestly](#). Inflation expectations, as measured by surveys, have generally followed actual inflation with a lag. They followed inflation up during the 1960s and 70s, and after that they followed inflation down. If inflation rises to 4 percent, it seems unlikely that expectations will overshoot this level.”

Still others are skeptical about the value of the whole inflation target concept because the Fed for so many years failed to produce 2 percent inflation even with that 2 percent target. Indeed, it’d be easy to ridicule the Fed for promising 3 percent inflation when the Fed had so much trouble getting inflation up to 2 percent. “Whether the goal was to get inflation down, as it used to be in the ‘80s, or to get inflation up, as it has been lately, our models all assume that if the central bankers were pure of heart or, failing that, if they had their hands tied, that magically expectations throughout the economy would be transformed and you could do things like getting inflation up or down without paying output costs,” says Jeffrey Frankel of Harvard University. “I don’t think this discussion among monetary economists has quite adequately acknowledged the extent to which that has failed. They were pure of heart, they really meant it about the 2 percent target and they didn’t achieve it. I think we need to take that into account more.” (The Fed’s favorite measure of inflation, the personal consumption expenditures price index, has climbed at an 1.8 percent annual average since the Greenspan Fed agreed on a 2 percent target in 1996, and at a 1.4 percent annual average over the past decade.)



Bernanke, among others, doubts that a higher inflation target is a good solution to the problem its advocates seek to solve. “First, because it gives you higher inflation all the time, whether you are close to the zero lower bound or not,” Bernanke says. “And, second, when you’re at the zero lower bound, it doesn’t give you any particular additional push to get out of the zero lower bound.”

Similar concerns led Rosengren, the Boston Fed president, to offer [an alternative to a permanently higher inflation target](#). He would have the Fed define a range of inflation rates—say 1.5 percent to 3 percent—that it would find acceptable. The Fed would set a medium-term goal within that range, perhaps revisiting it annually to take account of changing economic circumstances. He calls it “an inflation range with an adjustable inflation target.” His approach would give the Fed more flexibility but would generate unwelcome uncertainty about where inflation is headed. Rosengren figures that long as the Fed keeps inflation within the 1.5 percent to 3 percent band that uncertainty wouldn’t pose much of a problem. William Dudley, the former president of the New York Fed, also has advocated moving to an inflation range of perhaps 1.5 percent to 2.5 percent: “First, it might be viewed as more realistic given that measured inflation will always randomly fluctuate relative to its underlying trend. That is to say, even if the FOMC performs its job exceedingly well, very rarely will the inflation rate, as measured by the PCE price index, be precisely at 2 percent. Second, having a relatively narrow range would send a message that the FOMC is discriminating between two regimes—one in which inflation is within the range and concerns about inflation are low versus another in which inflation is outside the range and concerns about inflation are more elevated.”

### III. Price level target

With an inflation target, the Fed aims at a particular rate of change in prices. An alternative is to target the overall level of prices. The Fed might announce, for instance, that it would aim to keep the price level increasing at a 2 percent annual rate on average over a period of several years. Effectively, under this approach, the Fed would be targeting the average rate of inflation over a long period, rather than quarter to quarter. Monetary policy would consequently aim to offset periods in which inflation is below 2 percent with periods in which inflation is above 2 percent, so that, over time, prices would rise by 2 percent on average. Likewise, periods of above-target inflation would be followed by periods of inflation below 2 percent.

Switching to a price level target would be a significant change. The Fed currently looks only forward. Its framework doesn’t take account of whether inflation has been above or below target in the past. It lets bygones be bygones. A price level target, in contrast, looks both backward and forward.

Replacing the 2 percent annual inflation target with a price-level target of 2 percent probably fits cleanly inside the Fed’s legal mandate; in fact, many Americans probably wouldn’t notice much difference. One advocate, John Williams, now president of the New York Fed, argues that price-level target would do better at keeping prices rising at 2 percent over time. “With an inflation target you’re going to be missing your goal for long periods of time,” he says. (In good times, the Fed will be able to hit 2 percent, but in bad times, it’ll

likely fall short so the average inflation rate will tend to be lower than 2 percent.) “The price-level targeting rule notices that we’re missing on our inflation target roughly year after year and therefore keeps interest rates lower for longer after a very severe recession where inflation was very low. It basically promises extra stimulus to help guide the economy higher and also bring inflation back,” Williams says.

If successful, a price-level target might be more useful to ordinary Americans than the current inflation target, which the Fed hits in some years and misses in others. “When you’re planning for the future, if you’re buying a car, buying a house, saving for your retirement or your kids’ education, you’d understand what inflation on average will be over the next 10, 20, 30 years,” Williams says. “Those are the kind of horizons that households and businesses often think about.”

Yes, but...

When inflation has been below target for nearly a decade, as it has been lately, anything that prompts the Fed to keep nominal interest rates low and to welcome above-target inflation for a while may sound appealing, particularly to borrowers who get a better deal on a car loan or workers who find jobs more plentiful than otherwise. But consider the opposite circumstance: After a period of above-target inflation, the Fed would promise to keep interest rates—and unemployment—high to engineer a period of below-target inflation. Imagine a young car-buyer learning that the Fed is boosting the rate on her loan to compensate for higher inflation that occurred while she was still riding a bike. Or consider the reaction of a newcomer to the Federal Reserve Board who is told: Well, because the last crew let inflation run too high, you’ve got to vote to raise rates to slow the economy so that inflation gets down to 1 percent.

Advocates of price-level targeting say that the policy could help stabilize the economy if it suffers a demand shock. Say that, for some reason, consumers and businesses pull back on spending, nudging the economy towards recession and bringing the path of prices below the Fed’s target. With a credible price level target, people would expect the Fed to ensure that the inflation rate rises above 2 percent temporarily so that prices get back to the target path. “This increases expected inflation, which means that real interest rates (nominal rates less expected inflation) are lower, providing stimulus to an economy in need of it,” Mishkin, the Columbia economist, argues. He notes that this method works particularly well at the zero-lower-bound.

On the other hand, if the economy is hit by a supply shock, such as an increase in oil prices, it might make more sense to simply accept a one-time increase inflation. As Bernanke notes, “The ‘bygones are not bygones’ aspect of this approach is a two-edged sword. [Under price-level targeting, the central bank cannot ‘look through’ supply shocks that temporarily drive up inflation, but must commit to tightening to reverse the effects of the shock](#) on the price level.” Given that this could adversely affect employment and output, the Fed might have trouble convincing people it would really stick to this approach.

Price-level targeting would work well only if public and markets find the Fed to be credible and believe that periods of low inflation will be offset by periods of higher inflation. The case of Japan illustrates the difficulty in doing that; the Bank of Japan has found altering public inflation expectations very tough. Bernanke counters that financial markets, not the average consumer, are the primary target – and their expectations do change when the central bank gives them reason to do so. Influential Swedish economist Knut Wicksell proposed price-level targeting in 1898 and the Swedish Riksbank did [experiment with it](#) in the

1930s, but no major central bank has tried it lately. The Bank of Canada recently considered and rejected it. With a smile, Bernanke says “The ideal thing [would be] if we could just persuade New Zealand, which introduced inflation targeting in 1990, to do price level targeting for three or four years so we could all find out how it works. That would be a tremendous benefit to the rest of the world.”

Several observers are uncomfortable with replacing an inflation target with a price-level target, but they advocate something similar in practice. For instance, Mishkin, the former Fed governor now at Columbia, suggests re-defining the target as aiming for an inflation rate of 2 percent over some period, say five years. “You make it very clear that you’re really shooting for a 2 percent long-run target so you keep anchoring those expectations,” he says. William Dudley, the former New York Fed president, agrees: “We should further study how price-level targeting frame works might work in practice. But, it [is possible that a simpler approach of committing to keeping the average inflation rate around 2 percent](#) over the medium term might be just as appealing.”

[Bernanke, among others, has advocated a variant of price-level targeting:](#) He calls it “temporary price-level targeting.” In normal times, times when short-term interest rates are comfortably above zero, the Fed would stick to the 2 percent inflation target. But the Fed would *announce in advance* that if rates fell to zero and were stuck there for a while then it would temporarily pursue a price-level target. In other words, after a period of zero interest rates, the Fed would vow to keep rates low for a long time and aim for a period of above-target inflation. If this pledge were understood, believed and anticipated by the public, Bernanke argues, encounters with the zero lower bound would be “shorter, less severe, and less frequent.”

Bernanke cites two ways his approach is better than straightforward price-level targeting: First, when interest rates are away from zero, the current inflation-target framework would remain in place, preserving the benefits that approach has produced. Second, he argues that his approach would be easier to explain to the public; the “communication could remain entirely in terms of inflation goals, a concept with which the public and market participants are already familiar.”

Olivier Blanchard, for one, is unconvinced. “I would much prefer to have inflation just when we need it, but I’m a bit skeptical that it can be done.”

## IV. Nominal GDP target

An alternative to targeting inflation or the price level would be to target either the growth rate or the level of nominal Gross Domestic Product, the dollar value of all of the goods and services produced in the economy. This would combine the Fed’s price stability and employment mandates into a single metric.

A framework that targeted the growth rate of GDP would specify some rate – say 4 ½ percent – for nominal GDP growth. If GDP growth came in below this level, the Fed would loosen policy, and if it came in above this level, the Fed would tighten. Alternatively, the Fed could target the level of nominal GDP. This would have the same “look back” feature that price level targeting has. Say that the Fed chose a target of 4½ percent growth in GDP

beginning in 2007. The Fed would then expect nominal GDP to rise over time at 4½ percent. If growth fell short of the targeted level, as it did in 2009 and 2010, the Fed would stimulate the economy, and would keep monetary stimulus in place until nominal GDP returned to the path implied by 4 ½ percent annual growth since 2007. Likewise, a period where GDP rose above the targeted path would be followed by higher interest rates to get nominal GDP back to its path.

This idea of targeting nominal GDP is not new. It was first proposed in 1977 by Nobel laureate [James Meade](#), and was particularly appealing to some economists who were looking for an alternative to Milton Friedman's notion that the Fed should target growth in the money supply. No central bank has formally adopted a nominal GDP target.

Targeting the growth rate of nominal GDP would allow the Fed to communicate and cope with just one target instead of the current two, inflation and employment. "If central banks want to communicate their intentions at a one- to two-year horizon, it would be more effective if they traced that commitment...or that guidance in terms of nominal GDP rather than in terms of CPI inflation," says Frankel, the Harvard economist. In many ways, nominal GDP is easier to track than many other economic indicators. Once the Fed decided on a target for growth in the level of nominal GDP, it would no longer need to estimate the unemployment rate consistent with price stability or the gap between potential and actual GDP or the neutral real interest rate. In other words, the Fed would need less information to make decisions. "A nominal GDP target would take the focus off of inflation and what its appropriate value should be. Thus, if there needed to be some catch-up inflation and nominal spending to get nominal GDP back to its targeted growth path [the Fed could do it with less political pressure](#)," says David Beckworth of the Mercatus Center at George Mason University.

A nominal GDP target would, almost automatically, lead the Fed to lower interest rates in bad times – whether bad in terms of economic growth or in terms of too-low inflation – and raise them in good times. It wouldn't have to diagnose, in real time, the reasons for the deviation from its target. This approach would be particularly valuable at times when the economy is sagging, as it was in 2011 when Christina Romer of the University of California at Berkeley argued: "By pledging to do whatever it takes to return nominal GDP to its pre-crisis trajectory, [the Fed could improve confidence and expectations of future growth](#). Such expectations could increase spending and growth today: Consumers who are more certain that they'll have a job next year would be less hesitant to spend, and companies that believe sales will be rising would be more likely to invest."

A nominal GDP target would lead the Fed to increase inflation in a recession or period of very slow growth. In a recession, the public might welcome lower interest rates and higher inflation if that brought down unemployment. But if economic growth were sluggish for a protracted period, as it was following the Great Recession, targeting nominal GDP growth would mean raising the inflation target on a sustained basis. Economists who advocate this approach say that's a feature, not a bug; essentially, expectations of higher inflation would raise nominal interest rates in periods when real rates are low, reducing the chances that monetary policy will be constrained by the zero lower bound. The public, however, might be unhappy with a prolonged period in which economic growth is slow and inflation high.

Targeting the level, as opposed to the growth rate, of nominal GDP raises some of the same issues raised by targeting the price level: The Fed would have to explain why it is

raising or lowering interest rates today because of something that happened yesterday. This framework would have the Fed slow the economy – and raise unemployment – for a time following a period in which the economy had grown above target. This could be a hard sell: You're unemployed today because we had too many people working last year or you're paying more for your car loan today because too many people borrowed to buy cars last year.

Then there is the technical challenge. While nominal GDP is observable in principle (unlike, say, concepts like the natural rate of unemployment), in practice nominal GDP data are revised repeatedly before becoming final, sometimes substantially. The mean revision between the initial report of nominal GDP and the one published two months later is [greater than 1.2 percentage points](#). The numbers are revised again when final data are received. Significant revisions to historic data could complicate matters for the Fed if it was using nominal GDP targeting.

# Why the Bank of Canada sticks with 2 percent inflation target

By John David Murray

In 1991, the Bank of Canada was the second central bank – the Reserve Bank of New Zealand was the first – to adopt an inflation target as its primary monetary policy strategy, [replacing earlier frameworks that relied on the exchange rate and the money supply](#). The target is set jointly with the government, and the framework is reviewed every five years. The following account of the Bank of Canada’s experience is drawn from remarks by **John David Murray**, a 34-year veteran of the Bank of Canada who was deputy governor from 2008 to 2014, made at the [Hutchins Center conference](#).

When inflation targeting came to Canada, it was the government not the Bank of Canada that proposed it. Why? Three possible explanations come to mind. First, perhaps the government thought it was a fundamentally good idea. Second, the government was in the process of introducing a new goods and services tax, which would boost headline inflation significantly. This was coming at a time when the government was also renegotiating the contracts it had with most of the unions in the federal civil service. The introduction of an inflation target might serve as a buffer, therefore, helping to temper wage demands. Third, it might have been a preemptive move. The Bank of Canada had started on a very aggressive policy track aimed at realizing the full benefits of price stability, which I know isn’t anything new for a central bank. But this was presented to the public in a very direct and determined way. Although no numerical target was given, when asked by a journalist what this might mean, the bank was reported to have said that for inflation: “Four is not as good as three. Three is not as good as two. Two is not as good as one, and one is not as good as zero.”

The bank for its part was very receptive to the idea of an inflation target. However, it was less enthusiastic about the way the government wanted to go about it. The government wanted to aim for a relatively high target rate, around 3 percent and was thinking of something rather short term. The bank’s reaction was that if an inflation target were to be introduced it had to be meaningful and it had to be long term. Ultimately the bank’s view prevailed and the inflation target was announced in a [joint press release](#) from the government and the bank in 1991. It set an inflation target of 3 percent for 1992, going down to 2 percent in 1995, and with a 1 percent band to either side of these targets. Perhaps most interesting, this was regarded as only a beginning: Five years hence, this issue was to be revisited with a strong presumption that the 2 percent target would go lower. The thought was that after five years’ experience, the authorities would have a better sense of the optimal level of inflation, reset the target accordingly, and then that would be it. The planned 1995 renewal was not seen as the beginning of an ongoing process.

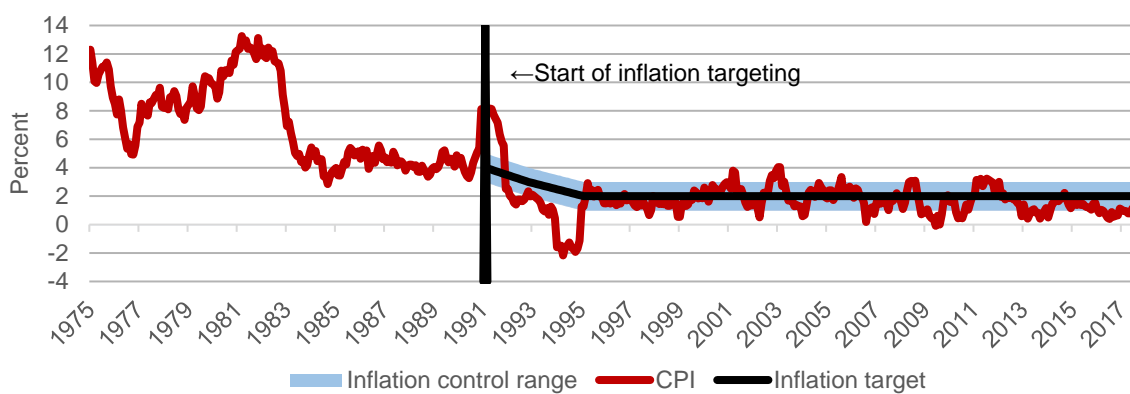
Things did not go quite as planned. In fact, the target was renewed in 1993, two years ahead of schedule, and has been renewed five times since. It is up for renewal again in 2021.

Despite the subsequent reviews, there has been no material change in the framework since 1993. The inflation target is currently defined as the [“2 percent, the midpoint of a 1 percent to 3 percent inflation-control range.”](#) The wording around the targets has changed, however. Instead of talking about “reducing inflation and reaching price stability” as the bank originally did, it now talks about “low, stable and predictable inflation” as its objective.

The main reason the target hasn’t changed is that the economy seems to have performed exceptionally well under the 2 percent inflation target – indeed better than expected. This set a rather high bar for doing anything adventurous in subsequent renewals.

### CPI Inflation in Canada

Inflation performance has been better than expected since inflation targeting began in 1991.



Source: Bank of Canada, Murray (2018).

**BROOKINGS** 

What’s the point of a regular renewal process if you don’t change anything? The answer to this is threefold. First, it is a critical part of the bank’s accountability and its responsibility to Canadians. Second, if the renewal was presented as a once in a lifetime event, it might lack credibility. People would correctly note that few things last forever. Any reopening of the framework that was contemplated in future years would generate unnecessary uncertainty and concern. If there is a regularity to the renewal process, however, one can diffuse a lot of this misdirected excitement and potential misunderstanding. Third, the regular renewal is seen as a deliberate and transparent mechanism with which to engage stakeholders. When the Bank of Canada renews the agreement with the government, it isn’t the product of secret discussions. The Bank of Canada is very careful to lay out the issues it proposes to address as well as any changes that might be considered, and to invite feedback from the public, the government, and academics. This transparency is important in terms of credibility and buy-in—a way to promote public awareness and understanding. It’s also a driver for a more focused research effort within the bank. Although the main features of the framework have remained unchanged after six renewals, something new and valuable has been learned on every occasion.

Some have argued that if the market thinks the inflation target could change every five years, there’s a chance inflation expectations might not be well anchored. However, there’s no evidence of this. Some have also suggested that these regular reviews might invite un-

helpful interference from the government – and that’s true, there’s a risk. But the government has ultimate responsibility for monetary policy in any case. According to legislation introduced in 1967, the government has the power to issue a directive to the Bank of Canada if it is ever unhappy about the conduct of monetary policy. But there are three conditions: One, the government has to be very specific about what it doesn’t like. Two, it has to be very specific about what it wants the Bank of Canada to do. Three, the directive has to be published, and there’s a presumption that if the power were ever used, the governor of the bank would feel compelled to resign. In the event, this nuclear option has never been exercised.

In fact, the bank sees the joint inflation-target agreement as something that enhances its operational independence. Once you’ve got the government to sign onto the monetary policy objective, the scope for interference is greatly reduced—provided you’re actually doing your job.

Some of the issues the Bank of Canada has examined over the past 27 years are:

- **The level of the inflation target.** Whether the inflation target should be lowered was the central question occupying the bank over much of the 1993 to 2011 period. It was only in 2016 that the question was reversed and became whether the bank should raise the inflation target. In the end, it didn’t. Why? There were a number of reasons for this but one was a presumption that many of us had that a lower target would have been better as a starting point. Leaving it at 2 per cent therefore represented something of an increase. This view had receded a little at the time of the 2016 renewal, but there had always been a sense that lower inflation—something close to price stability—was better.
- **The role of financial stability considerations in making monetary policy.** Another key question asked in 2011 and 2016 was how much recognition should be given to financial stability concerns in the bank’s reaction function. The answer was “probably not much.” Leaning via higher interest rates might be appropriate in extreme cases, when standard tools proved insufficient, but even then were likely to do more harm than good based on early empirical estimates.
- **Price level targeting.** This held a lot of attraction for some of us as a way of achieving a lower inflation rate while dealing with the effects of the zero-lower-bound. If price level targeting works the central bank needs much less by way of interest rate movement to stabilize the real economy and inflation. The key caveats to this are effective communication and credibility. If price level targeting is to succeed people have to understand what you want to do and believe you’re going to do it. And that could be a big if. As we concluded in 2011: “Given the current state of knowledge, [the potential benefits of price-level targeting](#) in increasing long-term certainty about the price level and providing greater short-term macroeconomic stability, relative to the current inflation-targeting framework, do not clearly outweigh the costs and risks associated with real-world expectations and credibility falling short of the model ideal. This assessment could change in the future, however.”



The questions that are going to be addressed in the 2021 renewal have not been announced, but the same three questions are likely play a prominent role once again, combined with one or two additional issues. Perhaps the answers will change.

The primary purpose of my presentation is not to describe the issues that have been and should be examined as part of the renewal process, however. The key take-away is that the Bank of Canada really values the renewal process and based on its experience would recommend it to others. It doesn't have to become a dog fight between the central bank and the government.

You might argue that one can't take much comfort from this because the bank has never proposed a major change. And that's a fair argument. However, it is important to note that, although there were some notable differences early on, I'm not aware of any occasion over the past twenty-five years where the government prevented us from doing something we were convinced would be beneficial or pushed us to do something we didn't want to do. For example, wouldn't a little higher inflation be nice for everyone? That question *was* raised in 2016, but not at the behest of the government. The bank has had primary responsibility for doing the background research, proposing any changes that it deems appropriate, and consulting with the government in the renewal process, though much of the consultation occurs towards the end. It is a partnership that seems to work, though obviously, as one would expect in a democratic system, the government has the final say.



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