

ECONOMIC VIEWPOINT



Questioning Inflation Targets Japan's Recent Experience Provides New Insight

Most central banks manage their monetary policies based on an inflation target. Few of them have managed to achieve their objective in the last few years, however. Would targeting price level instead of price changes be a better idea? This idea is not new; the Bank of Canada has already considered this option when renewing its inflation target.¹ Besides the debate on whether it would be more effective, targeting price levels would certainly force the central banks to recoup lost ground after several years of weak inflation. Some could prove to be more patient before they start tightening their monetary policies.

In fall 2016, the Bank of Japan (BoJ) opted to apply, albeit indirectly, a price-level target by targeting a 2% average inflation rate for the full economic cycle. As such, periods of weak inflation have to be offset by periods of sharper inflation to make up the losses and achieve the desired average. That said, inflation remains weak in Japan and the BoJ might have to keep its monetary easing measures in effect for a long time if it hopes to reach its objective.

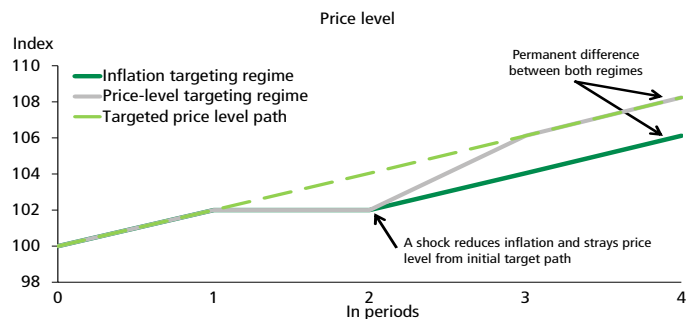
Targeting Price Level, Not Price Changes

Targeting price level means tracking a predetermined path for price advances. Let's assume that in 2017 the target price index was 100; we could target a level of 102 in 2018, followed by 104 in 2019, and so forth, based on the intended average growth rate. While this might seem like an inflation rate target, there are a few interesting differences.

One of these is that the differences compared to targeted price level can accumulate in an inflation targeting regime. For example, in a regime with a 2% annual inflation target, simply getting back to the 2% target is enough after a period of weaker inflation. This won't get us back to the price path targeted by the other regime, however (graph 1). To get an equivalent result in an inflation targeting regime, each period of below-target inflation would have to be voluntarily offset by a period of higher inflation. Cases where the initial inflation is too high would have to be offset by a period of lower inflation.

Inflation expectations are yet another difference. Expectations usually converge toward the target in an inflation targeting regime. In a price level regime, expectations will—in theory—change over the short and medium terms, based on the gaps

GRAPH 1
The price path varies depending on the regime selected



Source: Desjardins, Economic Studies

that have accumulated between the posted level and the target. If prices fail to rise fast enough, inflation expectations should increase temporarily. Conversely, inflation expectations should diminish after a period of too-rapid price hikes.

Such shifts in inflation expectations would have an impact on real interest rates. Real interest rates are in fact nominal interest

¹ [Renewal of the Inflation-Control Target – Background Information – November 2011](#), Bank of Canada, November 7, 2011, 39 p.

François Dupuis, Vice-President and Chief Economist • Hendrix Vachon, Senior Economist

Desjardins, Economic Studies: 514-281-2336 or 1 866-866-7000, ext. 5552336 • desjardins.economics@desjardins.com • desjardins.com/economics

NOTE TO READERS: The letters k, M and B are used in texts and tables to refer to thousands, millions and billions respectively.

IMPORTANT: This document is based on public information and may under no circumstances be used or construed as a commitment by Desjardins Group. While the information provided has been determined on the basis of data obtained from sources that are deemed to be reliable, Desjardins Group in no way warrants that the information is accurate or complete. The document is provided solely for information purposes and does not constitute an offer or solicitation for purchase or sale. Desjardins Group takes no responsibility for the consequences of any decision whatsoever made on the basis of the data contained herein and does not hereby undertake to provide any advice, notably in the area of investment services. The data on prices or margins are provided for information purposes and may be modified at any time, based on such factors as market conditions. The past performances and projections expressed herein are no guarantee of future performance. The opinions and forecasts contained herein are, unless otherwise indicated, those of the document's authors and do not represent the opinions of any other person or the official position of Desjardins Group. Copyright © 2018, Desjardins Group. All rights reserved.

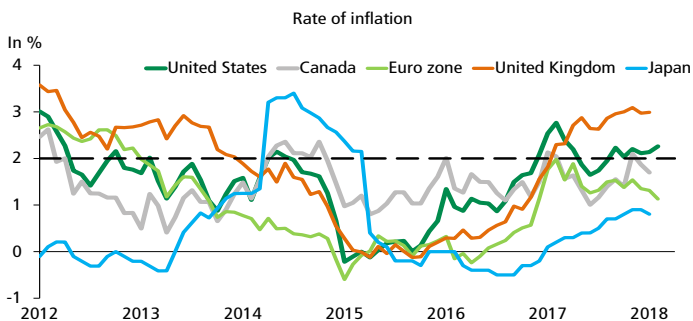
rates minus anticipated inflation. Higher inflation expectations weaken real interest rates. In a situation where the economy was struggling and prices fell below the target path, inflation expectations would increase and real interest rates would fall. In the end, kick-starting an economy would be much easier in a price-level targeting regime.

This mechanism would require a great deal of credibility from central banks, however. It is also necessary that consumers and businesses have rational inflation expectations; in other words, their expectations must be based on all the data available and a good understanding of the price-level targeting regime. In practice, expectations could be formed differently and be more adaptive, which would be a game changer. After a long period of weak inflation, inflation expectations could fall instead and push up real interest rates. This would make it tougher to stimulate the economy and kick-start price growth.

The Targets Have Been Tough to Reach in the Last Few Years

Inflation is rising at the moment in most economies, after several years of missed inflation targets (graph 2). Yet, central banks have applied different tactics to ramp-up price increases.

GRAPH 2
Inflation in the major advanced economies has hovered below 2% in the last few years

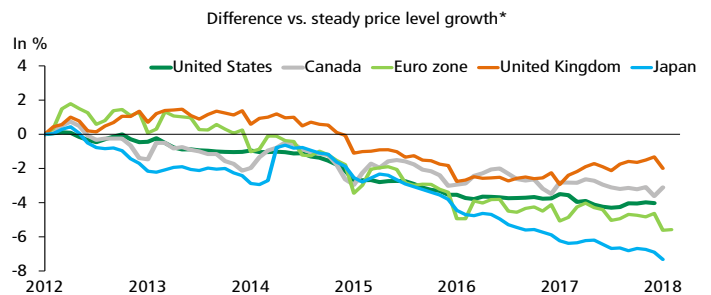


Sources: Datastream and Desjardins, Economic Studies

The gap accumulated in each major economy in the last few years looks much bigger compared to changes in price levels with a hypothetical path where price growth is consistent and equal to the inflation target (graph 3). Since 2012, Japan has accumulated a gap of more than 7% compared to a stable 2% growth rate for prices. The euro zone is not very far behind, with a gap of 5.6% compared to stable price growth of 1.9%.² The United States has accumulated a gap of 3.8% vs. a gap of 3.1% in Canada and 2.0% in the United Kingdom. The pound's sharp deterioration

² Most central banks target a 2% inflation rate. The European Central Bank (ECB) targets lower inflation, but close to 2%.

GRAPH 3
The shortfall would be substantial against steady price level growth



* Indices used: Personal consumption expenditure price index for the United States; Consumer price index (CPI) for Canada, euro zone and United Kingdom; CPI excluding fresh food for Japan.
Sources: Datastream and Desjardins, Economic Studies

after the referendum on the U.K.'s split from the European Union unleashed rapid price hikes in that country.

Central banks might have been better off targeting price levels. That said, the effectiveness of these targets still has to be actually demonstrated. Though no central bank is currently on a price-level targeting path, Japan could offer some fresh insights.

Japan Changed Its Target Formulation in 2016

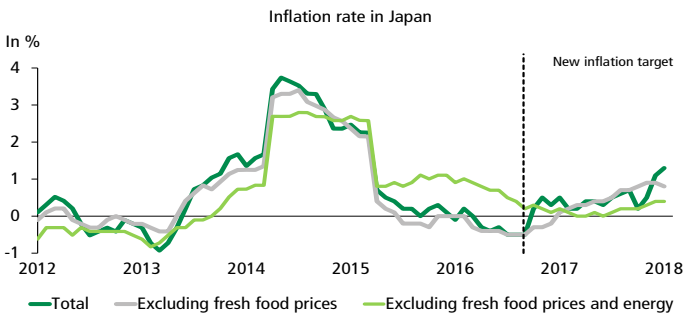
On September 21, 2016, the BoJ announced changes to its monetary policy, including the formulation of its inflation target.³ Instead of simply striving to bring inflation back to 2%, it now targets average price growth of 2% over the full economic cycle. As a result, the longer weak inflation persists, the more prepared the BoJ will be to tolerate high inflation over the longer haul to achieve average price increases of 2% per year. In fact, this is consistent with price-level targeting. The BoJ hopes that inflation expectations will self-adjust upwards temporarily, thereby reducing real interest rates and kick-starting price growth.

While isolating the impact of this new target formulation in Japan can be difficult, inflation has increased since September 2016. More specifically, the target set by the BoJ is based on inflation, excluding prices for fresh food—this measure has shifted up from -0.5% to almost 1.0% (graph 4 on page 3). Other countries saw their inflation rates rise without having to make the same monetary policy changes as the BoJ, however. What's more, rising inflation in Japan seems to be closely tied to rising energy prices. Excluding energy prices, Japan's inflation rate is currently 0.4%, compared to 0.2% in September 2016.

This new inflation target formulation most likely had an impact on the changes in inflation expectations as well. Expectation estimates based on the difference between nominal and real rates on the bond market point to a modest increase in

³ *New Framework for Strengthening Monetary Easing: "Quantitative and Qualitative Monetary Easing with Yield Curve Control"*, Bank of Japan, September 21, 2016, 11 p.

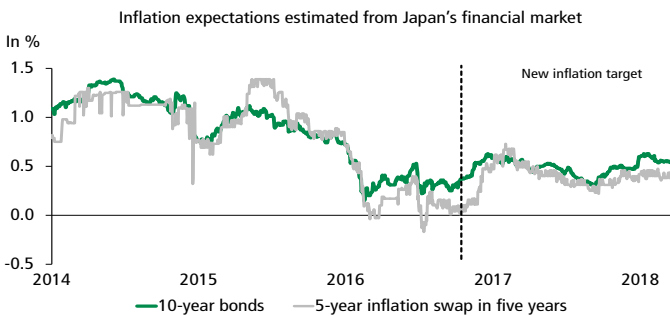
GRAPH 4
Inflation in Japan has increased since September 2016



Sources: Datastream and Desjardins, Economic Studies

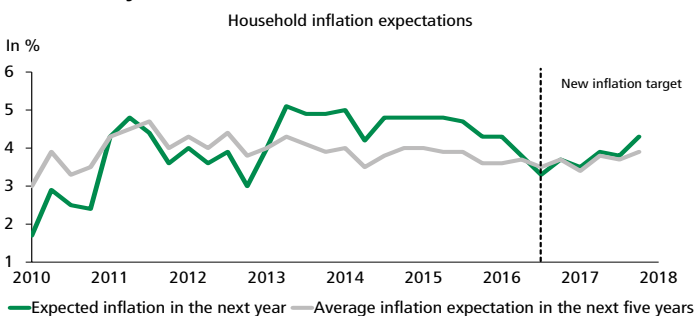
expectations of about 0.3 percentage point (graph 5). Instead, a survey by the BoJ to measure inflation expectations in households directly points to a 1.0 percentage point increase over a 1-year horizon compared to 0.4 percentage point over a 5-year horizon (graph 6).

GRAPH 5
Inflation expectations barely increased in Japan



Sources: Bloomberg and Desjardins, Economic Studies

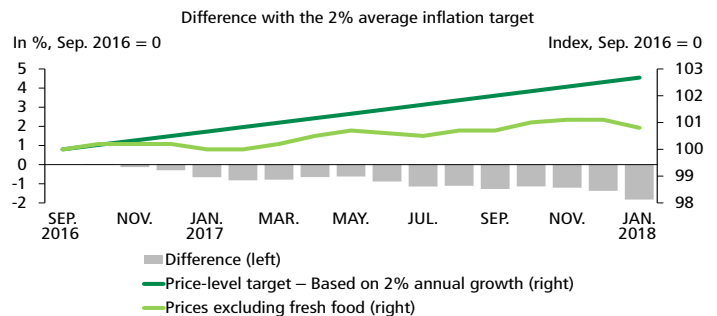
GRAPH 6
Households inflation expectations have increased a little more over a one-year horizon



Sources: Bank of Japan and Desjardins, Economic Studies

We had hoped to see stronger inflation expectations, especially over a 5-year horizon. These expectations would have to rise, given the growing lag the BoJ is facing to reach its target. With an inflation rate still well below 2%, the gap continues to widen quickly (graph 7). A shortfall of 1.8% has already been accumulated since September 2016. This means that even if inflation were to climb to 2% in 2018, which seems unlikely, the BoJ would have to tolerate an inflation rate of close to 3% for at least two years to reach its target.

GRAPH 7
The Bank of Japan is still moving away from its 2% average inflation target



Sources: Datastream and Desjardins, Economic Studies

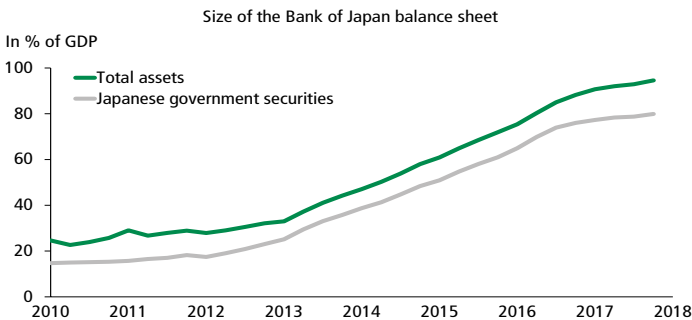
Potential Lack of Clarity and Credibility

The limited effectiveness thus far of this new inflation target formulation could stem from a poor understanding of the measure itself or the BoJ's poor handling of the communication process. The BoJ should perhaps more clearly set out the lag accumulated since the new target was introduced to hold more sway over inflation expectations. For the time being, the BoJ is reiterating that it will maintain its monetary easing measures until inflation exceeds 2% and stays above this target in stable manner.

The BoJ's credibility could also be a factor. Its road map on setting inflation targets is not impressive. Inflation has significantly exceeded zero only twice since 1999, that is in 2008 when oil prices soared and in 2014 when Japan raised its sales tax.

A central bank's capacity to influence inflation may also depend on the tools in its arsenal and any leeway it may have. Again, this simply raises more doubts about the BoJ, as its massive securities purchases have already magnified the size of its balance sheet. Its total assets are nearing 100% of Japan's nominal GDP, about 80% of which is Japanese government securities (graph 8 on page 4). No other central bank has gone this far in taking action. By comparison, the total assets held by the Federal Reserve represented a tad more than 20% of U.S. nominal GDP—and are now shrinking.

GRAPH 8
The Bank of Japan's balance sheet is nearing 100% of GDP



Sources: Datastream, Bank of Japan and Desjardins, Economic Studies

Will the securities the BoJ will have to purchase be available in the future? The BoJ's control over its 10-year bond yield is amplifying this issue. To prevent this rate from shifting too far away from 0%, the BoJ must adjust the pace of its securities purchases. In a context where global bond yields are trending upwards, the BoJ may have more difficulty sticking to its current monetary policy.

Bottom Line: This Could Be a Risky Bet

The idea of targeting price level to provide more leeway on real interest rates may seem appealing, especially given the difficulties central banks' have had to achieve their targets in recent years. That said, the practical vs. theoretical outcomes can vary for a host of different reasons.

Inflation expectations are not necessarily rational in real life. As a result, the desired adjustments on real interest rates could be limited, as the example in Japan illustrates. Also, any change in the target must be properly explained and communicated. The BoJ could put more emphasis on its current lag vis-à-vis its target to better quantify the inflation it hopes to recover in the next few years. In the end, central banks have to make sure they enjoy strong credibility before changing their target. This implies having a solid road map and all the necessary tools to generate inflation pressures.

The BoJ might have to maintain its monetary easing measures for an extended period of time, just when monetary tightening is becoming more widespread around the world. This lag in normalizing its monetary policy could weaken the BoJ if a new economic shock materializes in the next few years. The BoJ might have difficulty applying new accommodative measures at that time.

If a target on price level was applied in other countries, like Canada or the United States, some imbalances could be aggravated if the central banks opted to be patient and wait before tightening their monetary policies. For example, it could pave the way for price bubbles in certain asset classes and household debt could also become a bigger problem. As such, applying a target on price levels seems like a risky bet.

Hendrix Vachon, Senior Economist