Mark Carney: A monetary policy framework for all seasons

Remarks by Mr Mark Carney, Governor of the Bank of Canada and Chairman of the Financial Stability Board, at the 2012 US Monetary Policy Forum, sponsored by The Initiative on Global Markets, University of Chicago Booth School of Business, New York City, 24 February 2012.

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Introduction

It is a pleasure to be at the U.S. Monetary Policy Forum, which brings together academics, practitioners and market participants to discuss current issues in monetary policy.

There are a few.

Indeed the crisis has shaken the foundations of monetary economics, making this a great time to be an academic but a more challenging one to be a practitioner. The extent to which market participants enjoy the situation appears to fluctuate on a daily basis.

In the crisis economies, policy-makers are battling the possibility of deflation. They are handicapped by transmission mechanisms that are at best impaired and at worst broken. With households and banks in these economies aggressively trying to delever, output gaps remain large and hysteresis threatens.

As a consequence, the horizons of monetary policy have been expanded dramatically. The Federal Reserve has been appropriately and effectively radical by implementing a range of powerful unconventional tools. Market expectations that G-3 target rates will stay at very low levels for a very long time appear firmly entrenched. G-3 central bank balance sheets have swelled to about 25 per cent of GDP, on average, and can reasonably be expected to expand further.

In the non-crisis economies, the challenging external environment has also required bold policy actions. Financial and confidence spillovers from the major financial centres are creating material headwinds. Weak export demand is forcing a heavy reliance on domestic demand to maintain momentum. Despite well-functioning domestic financial systems, policy rates remain near historic lows and real rates are generally negative.

For these economies, the possibility of a low-for-long world may contribute to excessive credit creation and risk taking. Moreover, an inflexible international monetary system is promoting large carry trades, with a bias to exchange rate overshooting, high correlations and significant volatility.

Away from the cognoscenti, understandable frustrations have risen. Citizens want their confidence in the system restored so that they can get on with their lives.

It is not surprising that, in the wake of these challenges, monetary policy frameworks are under intense scrutiny.

Is there a simple answer in such a messy world? It might not surprise you that, as the governor of a central bank that helped pioneer inflation targeting, I will argue today that flexible inflation targeting remains the best response.

This is not a lazy reflex. Over the past five years, the Bank of Canada has intensively examined alternatives to our current framework, including a lower inflation target and moving to a price-level target. We worked with the Government of Canada in a calm, reasoned review of these options and in full consideration of the lessons of the financial crisis. In the end, we reaffirmed our first principles.[1]

We did so because, in a complex and continuously evolving world that no one can predict with certainty, policy-makers need a robust framework; one that remains appropriate no matter the circumstances. Inflation targeting is disciplined but flexible. It allows central banks to deliver what is expected while dealing with the unexpected.

The death of inflation targeting?

There are many who would take issue with this conclusion. Ignoring the reality that only one inflation-targeting central bank – the Bank of England – was at the epicentre of the crisis, some claim the crisis marks the death knell of arguably the most successful monetary policy framework ever.

These opponents of inflation targeting make some variant of four main arguments.

First, price stability does not guarantee financial stability. We at the Bank of Canada agree.[2] We have consistently pointed out that low, stable and predictable inflation can feed complacency among financial market participants, as risk taking adapts to the perceived new equilibrium. Indeed, risk appears to be at its greatest when measures of it are at their lowest. The tendency to overreach is particularly marked if there is a perceived certainty about the stability of low interest rates.

In short, complacency can lead to extremes and, ultimately, crisis. But it does not follow that central banks practising flexible inflation targeting are forced to be similarly complacent when faced with the buildup of financial imbalances, a point to which I will return later.

Second, the stronger critique of the Austrian school is that inflation targeting can actively feed the creation of financial vulnerabilities, especially in the presence of positive supply shocks. For example, in an environment of increased potential growth resulting from higher productivity, inflation-targeting central banks may be compelled to respond to the consequent "good" deflation by lowering interest rates. From the Austrian perspective, this misguided response stokes excess money and credit creation, resulting in an intertemporal misallocation of capital and the accumulation of imbalances over time. These imbalances eventually implode, leading to crisis and "bad" deflation.[3]

As I will argue later, this critique places monetary policy in a vacuum divorced from broader macroprudential management. Moreover, it offers only a counsel of despair for current problems: liquidate, liquidate, liquidate.

Third, the opposite concern (voiced by Joe Stiglitz among others) is that inflation-targeting central banks will prove to be "inflation nutters" in the post-crisis environment.[4] We are portrayed as obsessed with a narrow inflation target while the economy burns. But in the post-crisis environment of deficient demand, preventing the economy from burning is entirely consistent with preventing inflation from falling below the target. As should be obvious from the actions of inflation targeters ranging from the Bank of England to the Bank of Canada and now the Fed, the framework has encouraged, rather than discouraged, aggressive easing.

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1 Bank of Canada, "Renewal of the Inflation-Control Target: Background Information – November 2011."

2 M. Carney, "Some Considerations on Using Monetary Policy to Stabilize Economic Activity," speech to a symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, 22 August 2009.

3 W. White, "Is Price Stability Enough?" BIS Working Papers No. 205, Bank for International Settlements, 2006.

4 J. Stiglitz, "The Failure of Inflation Targeting," Project Syndicate, May 2008.

Finally, some have argued that an inflation target consistent with price stability is too low for a post-crisis world.

While the recovery is proceeding in crisis economies, it remains weak, particularly relative to the depth of the recession. This is consistent with the historical experience following financial crises. Indeed, it is only with justified comparisons to the Great Depression that the success of the U.S. policy response is apparent.

Although the details differ by country and region, banks, governments and households across the crisis economies are trying to deleverage. One response to smooth this process could be to retain the inflation-targeting framework but raise the level of the target, as Rogoff and others have argued.

However, this is not the kind of flexibility we have in mind when we speak of "flexible IT." Moving opportunistically to a higher inflation target would risk unmooring inflation expectations and destroying the hard-won gains that have come from the entrenchment of price stability. A higher inflation-risk premium might result, prompting an increase in real rates that would exacerbate unfavourable debt dynamics.

The most palatable strategy to reduce debt is to increase growth. In today's reality, the hurdles are significant. For example, in Europe, sustained and necessary structural reforms may, for a time, actually depress nominal growth. The repair of U.S. household balance sheets has yet to fully run its course. Japan's adjustment remains a work in progress. As a consequence, the advanced economies could face a prolonged period of deficient demand and weak nominal growth.

The central challenge for monetary policy-makers in this environment is to prevent that from happening. The clock is ticking: the longer that crisis economies and their jobs markets remain moribund, the greater the risk of failure.

Would targeting the nominal GDP level be superior?

The broad deleveraging headwinds in crisis economies call for accommodative monetary policy. This is why, four years after the onset of the crisis, policy rates in these economies are still at or close to their zero lower bound (ZLB) and unconventional policy actions are still expanding.[5] To the extent that more monetary stimulus is needed, some have suggested that nominal-GDP (NGDP) targeting could be a powerful approach to facilitate the deleveraging process.

Under this option, the central bank would seek to make up for any undershoot in the trend in the value of nominal output. The actual undershoots in crisis economies have been significant, reaching about 10 per cent in the United States and the United Kingdom – or nearly two trillion dollars combined. Committing to restore the level of nominal GDP to its pre-crisis trend could lend the powerful boost to expectations needed to reduce real debt burdens and, more generally, provide added stimulus to the economy through lower real interest rates.[6]

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[5] S. Kozicki, E. Santor, and L. Suchanek, "Unconventional Monetary Policy: The International Experience with Central Bank Asset Purchases," *Bank of Canada Review* (Spring 2011): 13–25.

[6] More generally, NGDP-level targeting seeks to target a level of nominal GDP growing at the rate of the inflation target – say 2 per cent – plus the long-term potential growth of the economy. For economies like the United States and Canada, that would mean keeping NGDP on a path that would grow at a rate between 4 and 5 per cent. The central bank would ease monetary policy when the level of NGDP is (expected to be) below the targeted path and tighten if it is (expected to be) above. Should NGDP fall below target in a particular year, bygones would not be bygones: the central bank would seek to make up for that in subsequent years.

As Woodfordian logic would have it, a key appeal of NGDP-level targeting is that by compensating for past deviations from desired levels – i.e., by introducing more dependence on history – it would better harness the power of expectations to stabilize the economy.[7]

In normal times, these greater stabilization benefits are not likely to be particularly important. As part of the work leading to the renewal of our inflation control agreement, the Bank of Canada analysed the benefits of price-level targeting (PLT) which, like nominal GDP targeting, is a way to introduce history dependence. Our research shows that, apart from lower bound episodes, the gains from better exploiting the expectations channel are likely to be modest.

Based on simulations using the Bank's main projection model, the benefits of this greater stabilization under PLT are comparable to a permanent quarter-point reduction in the standard deviation of CPI inflation, a significantly smaller improvement than that realized upon the introduction of inflation targeting in Canada in the 1990s. Much of this benefit arises following shocks that create an explicit trade-off between output and inflation stabilization, such as supply shocks, since credible and well-understood PLT improves this trade-off.

To reap even these modest gains, expectations would have to adjust the way theory says they should. That requires the change in policy regime to be both credible and well understood. The public would need to be fully conversant with the implications of the regime and trust policy-makers to live up to their commitment. These conditions may not be met. In the worst case, if nominal GDP targeting is not fully understood or credible, it can, in fact, be destabilizing.

Our research shows that the stabilization benefits of PLT appear to diminish quickly as the fraction of the population that behaves in a manner consistent with PLT falls, and are eliminated when this fraction reaches 50 per cent.[8] We have also investigated more directly – in a laboratory-type setting – how people would adapt to a PLT regime. Our results suggest that while people do change their behaviour under PLT, the changes reflect an imperfect understanding of the implications of the regime.[9]

More fundamentally, relative to PLT and IT, nominal GDP-level targeting imposes some additional restrictions that might impede the ability of the central bank to achieve its underlying goal of maximizing welfare. NGDP-level targeting treats changes in overall prices and real activity as a package. As potential growth changes over time, either the nominal target will have to change or else it will force an arbitrary rebalancing between inflation and real activity objectives.

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[7] Through several influential papers, Michael Woodford espouses history dependence as a necessary feature of optimal monetary policy under commitment. History dependence requires that the monetary policy instrument respond to past economic conditions, in addition to current and expected future conditions. For example, following a shock that initially causes inflation to rise, a history-dependent policy would to continue to maintain real interest rates above their natural rate, even after the effect of the shock has fully dissipated, thereby causing inflation to eventually undershoot its pre-shock level. Other things being equal, such a policy is destabilizing precisely because it causes this secondary cycle in inflation. However, Woodford shows that if private agents correctly anticipate this type of policy response when setting prices at the time the shock occurs, the initial rise in inflation will be smaller, and this can more than offset the subsequent secondary cycle. See M. Woodford, "Pitfalls of Forward-Looking Monetary Policy," *American Economic Review* 90 no 2 (2000): 100–104; "The Taylor Rule and Optimal Monetary Policy," *American Economic Review* 91 no 2 (2001): 232–37; "Optimal Interest-Rate Smoothing," *Review of Economic Studies* 70 no 4 (2003): 861–86; and M. Woodford, "Optimal Monetary Stabilization Policy," in *Handbook of Monetary Economics*, vol. 3B, edited by B. Friedman and M. Woodford (Amsterdam: Elsevier, 2011) 723–828.

[8] S. Murchison, "Consumer Price Index Targeting," Bank of Canada (forthcoming).

[9] R. Amano, J. Engle-Warnick and M. Shukayev, "Price-Level Targeting and Inflation Expectations: Experimental Evidence," Working Paper No. 2001–18, Bank of Canada, 2011.

In addition, under NGDP-level targeting, the central bank would seek to stabilize the GDP deflator in order to achieve price stability. But the GDP deflator measures the price level of domestically produced goods and services, which may not match up well with the cost of living that the CPI measures and that matters most for welfare, particularly in small, open economies where imports make up a substantial share of the consumption basket.

All of that said, when stuck at the zero lower bound, there could be a more favourable case for NGDP targeting in providing additional stimulus and better facilitating the deleveraging process in the aftermath of a financial crisis. The exceptional nature of the situation, and the magnitude of the gaps involved, might make such a policy more credible and easier to understand. Depending on the depth and duration of the ZLB episode, our calculations suggest that the adoption of a (temporary) price-level target, if well understood and credible, could eliminate more than half of the losses associated with the impossibility of providing additional monetary stimulus through a lower policy rate.

NGDP-level targeting may thus merit consideration as a temporary unconventional monetary policy tool. But NGDP targeting does not, in our view, amount to a complete policy framework. What is needed is a robust framework that remains appropriate and well understood under any circumstances.

Why flexible inflation targeting provides a robust framework

Flexible IT is such a framework for all seasons.

The flexible IT framework in place in Canada since 1991 (similar to the one recently adopted by the Fed) focuses on a medium-term inflation goal. This is a means to an end, the end being economic well-being. The central bank focuses on this goal because it is both immutable and achievable. The way in which we achieve the goal can be adjusted, depending on the circumstances. This flexibility is important to be able to stabilize other aspects of the economy that also matter, but for which the desirable level can change over time or depending on the circumstances.

Thus, under flexible IT, the central bank seeks to return inflation to its medium-term target while mitigating volatility in other dimensions of the economy that matter for welfare, such as employment and financial stability. For most shocks, these goals are complementary. However, for shocks that pose a trade-off between these different objectives, or that tilt the balance of risks in one direction, the central bank can vary the horizon over which inflation is returned to target.[10]

The exercise of this flexibility cannot be arbitrary, and it requires a clear and transparent communications approach, which is important to both the accountability and effectiveness of monetary policy. This is why the Bank regularly reports its perspective on the forces at work on the economy and their implications for the path of inflation, including the horizon over which inflation is expected to return to target.[11, 12]

When credible, flexible IT provides a disciplined framework that can best adapt to changing and complex circumstances in order to best stabilize the economy. That makes the IT

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[10] Bank of Canada, "Renewal of the Inflation-Control Target: Background Information – November 2011."

[11] For example, see various issues of the Bank of Canada's quarterly *Monetary Policy Report*.

[12] Typically, the Bank seeks to return inflation to target over a horizon of six to eight quarters. However, over the past 20 years, there has been considerable variation in the horizon, in response to different circumstances and economic shocks. At times, the horizon over which inflation was projected to return to the 2 per cent target has been as short as two quarters and as long as 11 quarters. There have been nine occasions when the Bank has extended the target horizon beyond eight quarters.

framework robust, as is demonstrated by its ability to deal with the very different challenges faced by both crisis and non-crisis economies.

Flexibility for crisis economies

In the crisis economies, the challenge for central banks is to sustain aggregate demand in a period of important real adjustments.

Flexible IT is well suited to this purpose. The commitment to the inflation target ensures price stability by anchoring inflation expectations over the medium term. At the same time, it provides a clear framework to carry out unconventional monetary policy to provide additional stimulus, as required, in the shorter term.

While Canada was not, and is not, a “crisis” economy, our experience through the crisis is illustrative. The clarity and credibility of Canada’s inflation-targeting regime was a critical anchor through those turbulent times, giving the Bank an unwavering goal to guide its rapid and determined easing, and providing financial markets and the public with a clear means of understanding the rationale behind them.

Within this framework, our first (and only) venture into unconventional monetary policy was, in April 2009, to conditionally commit to maintaining rates at their zero lower bound through mid-2010.[13] Being able to make this commitment expressly conditional on the outlook for inflation, and thus anchored in a well-understood goal, enhanced its effectiveness in providing the needed stimulus, as well as allowing us to adjust the guidance smoothly as conditions warranted.

As the newest member of the flexible IT club, the Fed is now also able to use the anchor of an explicit inflation target to boost the aggressiveness of its communications strategy. We expect that the Fed’s elaboration of its longer-term policy goals will enhance the stimulative effect of its announcement that the federal funds rate is likely to remain at exceptionally low levels at least through late 2014.

Extraordinary forward policy guidance within a flexible IT framework helped the Bank of Canada provide additional stimulus when it was needed and should help the Fed do the same. The Fed’s experience with a published interest rate path in conventional times, when they return, is something we will watch with interest.

Flexibility for non-crisis economies

The robustness of flexible IT benefits non-crisis economies as well. In a global economy, ties of trade, finance and confidence bind both crisis and non-crisis economies together. With the global economy underperforming and the recovery still fragile, shocks can be felt far from their origins.

With flexible IT, non-crisis economies can more easily absorb the shocks from global headwinds by continuing to keep inflation low, stable and predictable so that households and firms can invest and plan for the future with confidence.

Let me illustrate with a few practical examples from our experience in Canada.

As the recovery unfolded, the Bank maintained an easier stance of policy than would have been implied by a simple Taylor-type rule (where the overnight rate mechanically responds to deviations of current inflation from the target). This allowed us to bring inflation back to target and output back to potential more quickly by leaning more heavily into the sustained

[13] See the April 2009 issue of the Bank of Canada’s *Monetary Policy Report*.

headwinds of weaker foreign demand.[14] IT also allowed us to guide market participants that, in an environment of material external headwinds, closing the output gap did not necessarily correspond with returning the policy rate to neutral.

This illustrates that, in a complex and continuously evolving world, it is illusory to think that the mechanistic implementation of a simple rule would prove desirable for all the circumstances that monetary policy must face.

Not only does a flexible IT framework enable the central bank to deal with shocks, it also provides the flexibility to address a buildup of financial vulnerabilities that a low-for-long environment can fuel.

This is important as experience suggests that prolonged periods of unusually low rates can cloud assessments of financial risks, induce a search for yield, and delay balance-sheet adjustments by banks, firms and households.[15]

Concerning levels of household debt can build in non-crisis economies, as they have in Canada, where a well-functioning financial system has combined with an environment of low interest rates since 2008.

The first line of defence against a buildup of such financial imbalances is micro- and macroprudential regulation and supervision. Canadian banks are currently reinforcing their already strong capital positions in order to meet the Basel III requirements for 2019 by the start of next year. The Government of Canada has already made three timely and prudent adjustments to the terms of mortgage finance. Canadian authorities are co-operating closely and will continue to monitor the financial situation of the household sector.

These defences will go a long way to mitigate the risk of financial excesses, but in some cases, monetary policy may still have to take financial stability considerations into account. This is most obviously the case when financial imbalances affect the near-term outlook for output and inflation.

In exceptional circumstances, when financial imbalances pose an economy-wide threat or where imbalances themselves are being encouraged by a low interest rate environment, monetary policy itself may be needed to support financial stability. Monetary policy has a broad influence on financial markets and on the leverage of financial institutions that cannot easily be avoided. This bluntness makes monetary policy an inappropriate tool to deal with sector-specific imbalances but a valuable one to address imbalances that may have economy-wide implications.[16]

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[14] Technical Box 2 in the Bank of Canada’s July 2011 *Monetary Policy Report*, “Headwinds, Tailwinds and the Policy Rate,” pages 28–29.

[15] S. Cociuba, M. Shukayev and A. Ueberfeldt, “Do Low Interest Rates Sow the Seeds of Financial Crises?” Working Paper No. 2011-31, Bank of Canada, 2011; H. Damar, C. Meh and Y. Terajima, “Leverage, Balance Sheet Size and Wholesale Funding,” Working Paper No. 2010-39, Bank of Canada, 2011; T. Paligorova and M. Santos, “Bank Risk-Taking in Episodes of Easy Monetary Policy,” Bank of Canada Working Paper (forthcoming 2012); and Bank of Canada, “Renewal of the Inflation-Control Target: Background Information – November 2011”. See also T. Adrian and H. Shin, “Financial Intermediaries and Monetary Economics,” in *Handbook of Monetary Economics*, vol. 3A, edited by B. Friedman and M. Woodford (Amsterdam: North Holland, 2010), 601–50; R. Rajan, “Has Finance Made the World Riskier?” *European Financial Management* 12, no. 4 (2006): 499–533; and G. Jiménez, S. Ongena, J. Peydró and J. Saurina, “Credit Supply and Monetary Policy: Identifying the Bank Balance-Sheet Channel with Loan Applications,” *American Economic Review* (forthcoming).

[16] J. Boivin, T. Lane and C. Meh, “Should Monetary Policy Be Used to Counteract Financial Imbalances?” *Bank of Canada Review* (Summer 2010): 23–36 and Bank of Canada, “Renewal of the Inflation-Control Target: Background Information – November 2011.” F. Mishkin, “Monetary Policy Strategy: Lessons from the Crisis,” Working Paper No. 16755, National Bureau of Economic Research, 2011 and I. Christensen and C. Meh, “Countercyclical Loan-to-Value Ratio and Monetary Policy” (Bank of Canada, forthcoming), argue further that

A virtue of flexible IT is that if the regime is credible, the inflation target can anchor inflation expectations while leaving room for policy-makers to occasionally use monetary policy for financial stability purposes.

The Bank of Canada's policy interest rate has remained at its current level of 1 per cent for more than a year – a degree of stimulus appropriate to an environment where the Canadian economy faces considerable external headwinds. In its latest *Monetary Policy Report*, the Bank projected that this accommodative policy stance – with a gradual reduction in monetary stimulus over the projection horizon – would be consistent with returning inflation to the 2 per cent total CPI inflation target in seven quarters, in line with the typical monetary policy horizon.

As I have discussed, however, a key feature of Canada's inflation-targeting framework is the scope to adjust this horizon if circumstances warrant. Equipped with this flexibility, the Bank will continue to monitor carefully economic and financial developments in the Canadian and global economies, together with the evolution of risks, and set monetary policy consistent with achieving the 2 per cent inflation target over the medium term.

Conclusion

The post-crisis world presents economists, academics and policy-makers with many challenges. Chief among them is the conduct of monetary policy during a period of profound adjustment during which deflation, inflation and financial stability risks could all threaten.

The Bank of Canada believes flexible inflation targeting provides a robust framework for all seasons, and we will use its full potential to deliver price stability and to enhance the economic welfare of Canadians.

a general understanding that monetary policy will be employed to counteract the buildup of such risks and imbalances is likely to enhance the stabilizing impact of this approach.