

Mark Carney: Some considerations on using monetary policy to stabilize economic activity

Remarks by Mr Mark Carney, Governor of the Bank of Canada, to a symposium sponsored by the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, 22 August 2009.

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It is an honour to provide a few comments on Carl Walsh's excellent paper, which revisits some fundamental monetary policy issues. Walsh's paper highlights many useful lessons that can be learned from the conventional framework and its various extensions. However, the financial crisis provides a stark and costly reminder of just how incomplete the standard model is. I will concentrate on the future of monetary policy in light of both the lessons of the crisis and the prospect of some central banks having more formal responsibility to promote financial stability. I will take as my starting point Walsh's observation that: "distortions in financial markets that generate real effects of monetary policy also imply that financial stability may require making trade-offs with the goals of inflation stability and stability of real economic activity."¹

There is an emerging consensus that price stability does not guarantee financial stability and is, in fact, often associated with excess credit growth and emerging asset bubbles.² There is also general agreement that the first line of defence should be better regulation, including new macroprudential tools. However, it is less widely recognized that this will mean it is not "business as usual" for monetary policy. At a minimum, the regulatory response will change the transmission mechanism and, consequently, the implementation of monetary policy.

A more fundamental policy question – one that has not yet been fully thought through – is whether the policy rate itself should lean into the wind for financial stability purposes. If so, how will central banks retain accountability and credibility, and their associated benefits for inflation expectations? Could it be advantageous to amend the price stability mandate? I would like to undertake an initial exploration of these issues today.

What follows is a discussion of ideas worthy of consideration. It should not be seen as having any bearing on the current conduct of monetary policy or the prospective management of financial stability in Canada. The Bank of Canada's current inflation-control agreement with the Government of Canada will remain in effect until the end of 2011. Any changes to our agreement with the Government, if desired by both parties, would only come into effect thereafter. Changes to financial stability regulation are generally the purview of the Government of Canada.

Is price stability enough?

While most central banks have added a financial stability objective in recent years, the monetary policy and financial stability wings of many of our institutions have operated as two solitudes.³ For example, the standard New Keynesian transmission channels featured in workhorse monetary policy models and described in Walsh's paper ignore not only the financial accelerator but also broader procyclical dynamics in modern money and credit markets. Importantly, these dynamics could be triggered by the attainment of price stability

¹ Carl Walsh, "Using Monetary Policy to Stabilize Economic Activity." Prepared for the Jackson Hole Symposium on *Financial Stability and Macroeconomic Policy*, 20-22 August, 2009, pp. 33-34.

² See, for example, King (2009) and Shirakawa (2009).

³ This was one of the primary motivations for the Bank of Canada's organizational realignment last year.

itself. Such downplaying of real-financial linkages obscured the scale of emerging vulnerabilities and challenged the initial crisis response.

The experience of the past two years is quickly changing these attitudes. Central banks are recognizing that they need a deeper understanding of financial system dynamics in order to better understand the relationship between price and financial stability and, ultimately, the contribution of both to the stabilization of economic activity.

The variable transmission mechanism

Central banks have effectively treated the transmission mechanism as uncertain but fixed (or at best only mildly variable) when it is in fact highly variable and procyclical. The transmission mechanism is a function of, among other factors, (i) regulation, which changes over time; (ii) financial innovation, which often evolves to circumvent regulation; and (iii) confidence, which is influenced by monetary policy in ways not commonly acknowledged.⁴

Consider three states of the world. In the normal state, financial agents balance macroeconomic and idiosyncratic risks in their investing, lending, and financing decisions. In the exuberant state, agents become complacent about macroeconomic risks and seek to exploit more idiosyncratic or obscure opportunities.⁵ In the panicked state, macroeconomic risks dominate and all idiosyncratic risks are shunned. The normal state is just that, normal. The other two extremes are the tails that we have just lived through.

A prolonged, benign macroeconomic environment can encourage the transition from normal to exuberant states. As we have all just been reminded at great cost, low, stable, and predictable inflation and low variability in activity – especially when associated with exceptionally low and stable interest rates – can breed complacency among financial market participants as risk taking adapts to the perceived new equilibrium.⁶ Indeed, risk appears to be at its greatest when measures of it are at their lowest. Low variability of inflation and output (reduces current financial VaR and) encourages greater risk taking (on a forward VaR basis). Investors stretch from liquid to less-liquid markets. In parallel, low and stable interest rates promote larger asset-liability mismatches across credit and currency markets. These tendencies are particularly marked if there is a perceived certainty about the stability of low interest rates.⁷

Many of these positions are funded on a collateralized basis. Such asset-based financing creates intensely procyclical liquidity cycles. In these cycles, rising asset prices increase funding liquidity, which finances further purchases and prompts additional price increases. Over time, haircuts are relaxed, further intensifying the cycle.^{8,9}

It is important to recognize that expectations about monetary policy can feed these dynamics. It would appear that the so-called “Clean” doctrine reinforces the risk-taking behaviour of agents. This is a strategy that advocates using monetary policy to “clean up,” or respond to, the consequences of a burst asset bubble rather than “leaning into the wind,”

⁴ Other factors include where the economy is in the cycle and the state of household and corporate balance sheets.

⁵ They do so within a perceived risk budget. The actual risk budget has, of course, grown.

⁶ Either perceptions of risk or risk preferences could change. In the former case, complacency about actual risks can mean taking greater risks within the same risk budget.

⁷ See Diamond and Rajan (2005).

⁸ See Gorton and Metrick (2009), Fisher (2008), and Adrian and Shin (2008) for comprehensive descriptions of these dynamics.

⁹ Ways to limit such procyclicality include enforcing through-the-cycle margins in repo markets and limiting rehypothecation margins in securities lending to 100 per cent.

which would limit the progression of excess credit creation.¹⁰ The combination of the central bank's silence over the existence of a possible bubble, the certainty that it would not respond to emerging financial pressures unless they affect price dynamics over the monetary policy horizon, and the expectation that it would mop up if the bubble bursts all conspire to sow the seeds of the next crisis.¹¹

Though they are far from the whole story, such dynamics are central to the understanding of the current financial crisis.¹²

The first line of defence is better regulation

While misery loves company, we must be careful not to generalize recent failings. The foregoing description of liquidity cycles assumes that agents *can* extend mismatches, increase leverage, and boost collateral-based finance if conditions appear favourable. In other words, regulatory quiescence or arbitrage is also required.

Neither has been universal. The oft-derided existing regulatory tool kit has been deployed more effectively in some jurisdictions than in others. Indeed, many Inflation Targeters achieved their price stability objectives and retained well-functioning, appropriately exuberant financial systems (including Canada, Australia, and New Zealand). This advantage is easily replicated and could be further enhanced if an effective macroprudential approach were developed.¹³

The implementation of monetary policy will have to change

New macroprudential tools will change the transmission mechanism, potentially in real time if discretion is used in their application. As a result, central banks will need to coordinate across conventional monetary policy tools and those emerging financial stability tools that have monetary policy implications. This could prove challenging.

Fortunately, we are already on the learning curve. Strains in the interbank, repo, and credit markets dramatically tightened the effective stance of monetary policy. In response, extraordinary liquidity facilities were deployed. The effectiveness of these facilities varied across jurisdictions with the health of core financial institutions and the scale of shadow banking systems.

A common lesson is that current market infrastructure does not ensure continuously available core funding markets. A wholesale restructuring of funding markets is thus required. Promising avenues to break such liquidity spirals include introducing clearing houses, standardizing products, implementing through-the-cycle margining, and ensuring more effective netting. As the ultimate provider of liquidity to the system, central banks should consider whether to adapt our facilities to support continuous private liquidity creation. Through such measures, we can reduce the procyclicality of the transmission mechanism.

How other emerging macroprudential tools are implemented also matters. If these new tools, such as time-varying capital buffers, are purely rules based, perhaps linked to aggregate credit growth, their impact on the transmission mechanism may be determined with

¹⁰ See White (2009) for the definition and broader discussion.

¹¹ An alternative extreme is the "dark side" of credibility, whereby agents make bigger mistakes as a consequence of believing central banks will always get policy right. This is consistent with the exuberant state.

¹² For a more complete exposition, see Bernanke (2009).

¹³ According to Walsh, "targeted and time varying financial regulations are better instruments than monetary policy for mitigating many of the effects of these [financial] frictions. But if regulation fails to do so, central banks cannot ignore financial frictions and financial stability" (2009, p. 28).

experience. Unfortunately, it is unlikely that we can get the rules right *ex ante* and, in any event, private innovation may change their impact over time. If there is an element of discretion in their application, it may be less certain that such dynamic management of the transmission mechanism for financial stability purposes will be both timely and effective. This could place greater pressure on monetary policy to act. For this reason, there is likely value in either coordinating such decisions in the same authority or determining some other mechanism for joint optimization.

The basic point is that in order to maximize the probability of achieving both price and financial stability objectives, one objective of macroprudential tools should be to dampen the procyclicality of the transmission mechanism. This will take the weight off monetary policy to act for financial stability purposes and allow its use to be concentrated on the pursuit of price stability.

Can central banks achieve dual price and financial stability mandates?

With the advent of inflation targeting, price stability mandates for most central banks have become increasingly well defined. Until recently, the vagueness of most financial stability mandates and the assumption that price stability was consistent with financial stability meant that there were few perceived conflicts. In the wake of the crisis, financial stability mandates can be expected to harden and conflicts may become more apparent. Can central banks jointly optimize these objectives? What are the implications for monetary policy of trying to do so?

Price stability should be retained as the central objective of monetary policy, although its definition may have to change. Price stability may not be enough to stabilize economic activity in all states of the world, but neither is it undesirable. Indeed, the single most direct contribution that monetary policy can make to sound economic performance is to provide our citizens with confidence that their money will retain its purchasing power. That means keeping inflation low, stable, and predictable. Price stability lowers uncertainty, minimizes the costs of inflation, reduces the cost of capital, and creates an environment in which households and firms can invest and plan for the future. It has generally been coincident with sustainable growth in output and employment.

Having a credible price stability objective has also proven enormously helpful during the crisis and should continue to be so during the eventual exit. The coherence of policy and the message derived from one fixed objective provide greater certainty for financial markets in a time of considerable turmoil. The ability to maintain inflation expectations has helped keep real interest rates low and provide the necessary monetary stimulus. The inflation anchor remains essential even when providing extraordinary guidance. This is why the Bank of Canada's current commitment – that our target rate is projected to remain at its effective lower bound through the end of the second quarter of 2010 – is explicitly conditional on the outlook for inflation.

Different time horizons for price and financial stability require flexibility

The main challenge for joint optimization is that financial and price stability share common determinants but have different time horizons. Price stability dynamics continuously reflect real shocks and/or policy responses, while financial vulnerabilities are much less predictable. They build over time and can persist for longer than expected. Because of this mismatch, policy actions consistent with targeting one may undermine the other.¹⁴

¹⁴ This may partially explain why asset prices are not accurate predictors of goods prices. See Walsh (2009, p. 29).

This timing difference can be partially bridged in a couple of ways. First, housing prices can be incorporated in the consumer price index, as they are in Canada. Second, monetary policy communications could adapt to reflect the behavioural dynamics of financial systems. An effective communications strategy for normal states may prove counterproductive in exuberant states.

How central banks communicate can influence the degree to which low, stable, and predictable inflation fosters excess credit growth. It is important that markets understand how a central bank formulates policy, but that does not equate to perfect foresight. Differences in judgment and the fundamental uncertainties surrounding the economic outlook should mean occasional differences in view. These should be particularly marked during turning points in the economic cycle. As the review of liquidity cycles suggests, wider “markets” in expected economic outcomes (which would mean greater short-term volatility) could promote long-term financial stability.¹⁵

The alternative would be to generate price instability to prevent financial instability. That is, the price objective might have to become less stable in order to disrupt the endogenous liquidity creation that comes from relatively stable, *predictable* rate paths.¹⁶ This, rather than a higher inflation rate (if reliably achieved), would appear necessary to disrupt the dynamics described earlier.

The trade-off between flexibility and credibility challenges joint optimization

Flexible inflation targeting is the standard approach to bridge the different time horizons for financial and price stability. However, there are limits. The time frame for inflation targeting can be stretched, but the credibility essential for its success may be undermined if such flexibility is taken too far or deployed too frequently.¹⁷ Flexible inflation targeting works well with temporary or one-off shocks. Whether it can adapt to address unique but longer-lived shocks or different states of the financial economy, such as an asset boom, is the relevant question.

The design of monetary policy frameworks depend in part on the trade-off between flexibility and credibility. This, in turn, is a function of both the extent to which (inflexible) rules enhance credibility and the ability of central banks to exercise the discretion required to deploy any flexibility in a credible manner.

There is an important governance and accountability aspect to this, which the current debate often ignores. Inflation-targeting regimes generally have fixed targets, with bands and tight timelines for their achievement. This inflexibility sets clear objectives and helps hold central bankers accountable. It also can create a virtuous circle. As the inflation target is achieved, it enhances the central bank’s credibility, which further anchors inflation expectations, which then contribute to a more stable macroeconomic environment, and that, in turn, further builds policy credibility.

We should be careful neither to underweight the value of resulting simple heuristics of economic agents nor to minimize the risks of complicating them. If the central bank were to lean for financial stability reasons and miss its inflation target as a consequence, its

¹⁵ In this regard, the Bank of Canada views its use of a conditional commitment as an *unconventional* policy instrument, justified by the effective lower bound and by extreme market volatility.

¹⁶ As argued below, it is not that the price objective itself should become less stable but that its attainment could become more volatile. This could be the natural consequence of adding a financial stability objective *if macroprudential tools and surveillance do not prove sufficient for the task*.

¹⁷ Since 1998, the Bank of Canada’s horizon has varied from five to ten quarters over our projection period.

accountability could be diminished, its credibility reduced, and potentially, inflation expectations themselves could become unanchored.¹⁸

The key question is whether the financial stability benefit of greater flexibility is worth the price stability risk of forfeited credibility.

Amending the price stability objective to promote financial stability

This all suggests that if monetary policy must lean into the wind for financial stability purposes, then the price stability objective should change in a manner consistent with the *desired* variability in the price path. This could be accomplished by combining flexible inflation targeting and price-level targeting.

In general, policy-makers would rely on enhanced macroprudential regulatory frameworks to curb the enthusiasm in the financial system.¹⁹ While the policy interest rate would not be the primary tool for promoting financial stability, it occasionally might be used to support macroprudential tools. Leaning into the wind for financial stability purposes could thus result in temporary deviations from the inflation target. To avoid threatening the monetary policy objective, these deviations could be recovered over time in order to keep the economy on a predetermined path for the price level.

The prospect that the target rate could be deployed in this manner would help maintain a balance between macro and idiosyncratic risk. The discipline of a transparent and accountable price stability objective via the price-level target could maintain central bank credibility.

However, authorities, if they are granted flexibility, must be sufficiently disciplined not to decide that *all* shocks are uniquely virulent. This suggests that exercising any flexibility to lean into the wind for financial stability purposes should be episodic, the product of state-dependent rules. That is, the central bank would need to make the judgment not only that an exuberant state is developing, but also that macroprudential tools alone are insufficient to counteract it. The *possibility* that the central bank would make this judgment would rise with the degree of excess credit creation, providing a partial check on emerging complacent financial expectations.

A crucial motivation for this idea is that the balance of long-term price stability (i.e., achieving a predetermined price path) with higher short-term variability (due to the occasional leaning) is ultimately more consistent with achieving financial stability than conventional inflation targeting.²⁰ This reflects the relationship between price stability; low, relatively stable interest rates; and the emergence of exuberant financial states of the world described earlier. However, it also presumes that regulation is not up to the task. It is important to stress again that the first line of defence against these dynamics must lie in improved regulation and market structure.

It is also important to remember that there are concerns about macro stabilization under price-level targeting. In particular, the performance of a price-level target may suffer if inflation expectations are highly backward looking and/or if the economy is vulnerable to shocks generating negative correlation between output and inflation.²¹ Highly persistent

¹⁸ A current example may concentrate the mind. What if it were thought that central banks might keep rates too low for too long from a price stability perspective in order to repair the banking system (from a financial stability perspective). Rising inflation expectations and bond yields could undermine the recovery.

¹⁹ Walsh distinguishes between asset prices in normal and in bubble situations (2009, p. 32).

²⁰ A financial bubble and the policy response to it create the danger of yielding the reverse, i.e., short-term price stability but longer-term persistent deviations from the desired price path.

²¹ See Steinsson (2003).

relative price shocks may also pose a problem for macro stabilization under price-level targeting.²² Any decision on the overall merits of price-level targeting must take all of these considerations into account.

Conclusion

Experience has shown that monetary and financial stability are more tightly bound than had been appreciated. Price stability is a necessary, but not sufficient, condition for the stabilization of economic activity, and it must be supplemented by a robust macroprudential regulatory framework. This, in turn, will have consequences for the implementation of monetary policy. If these macroprudential tools prove insufficient to achieve financial stability, monetary policy faces a difficult trade-off between flexibility and credibility. As a consequence, authorities may wish to adjust the monetary policy objective to have the *credible* flexibility required to achieve both targets. Price-level targeting offers one potential avenue for consideration.

A formal assessment of the merits of price-level targeting will require the development of a framework that has a more realistic depiction of real-financial linkages than is embodied in the standard financial accelerator model. These models are still in their infancy, and their use to study the relative merits of inflation targeting and price-level targeting is the subject of ongoing research at the Bank of Canada.

The financial stability aspect of the price-level versus inflation targeting debate is only one of many relevant dimensions. The Bank has launched a multi-year research initiative that includes a comprehensive examination of the possible advantages of moving to a price-level target.²³ Our efforts in this area are ongoing and we look forward to continuing to work with monetary policy experts, academics, and central bankers from across the world. Carl Walsh has made a valuable contribution to that debate today.

References

- Adrian, T. and H.S. Shin. 2008. "Financial Intermediaries, Financial Stability and Monetary Policy." Paper prepared for the economic policy symposium "Maintaining Stability in a Changing Financial System." Jackson Hole, Wyoming. August.
- Amano, R., O. Kryvtsov, and J. Murray. 2009. "Price-Level Targeting in a Multi-Sector Economy." Bank of Canada. Manuscript.
- Bank of Canada. Inflation Targeting Research (website). Available at <http://www.inflationtargeting.ca>
- Bank of Canada Review*. 2009. Special Issue: Research on Inflation Targeting. Spring.
- Bernanke, B. S. 2009. "Four Questions about the Financial Crisis." Speech at Morehouse College, Atlanta, Georgia. 14 April.
- Carney, M. 2008. "Building Continuous Markets." Speech to the Canada – United Kingdom Chamber of Commerce. London, England. 19 November.
- Cateau, G. 2008. "Price Level versus Inflation Targeting under Model Uncertainty." Bank of Canada Working Paper No. 2008-15.

²² See Amano, Kryvtsov, and Murray (2009); Coletti et al. (2009); and de Resende, Dib, and Kichian (2009)

²³ See the Bank of Canada's website on inflation-targeting research at www.inflationtargeting.ca; Cateau (2008); Kryvtsov, Shukayev, and Ueberfeldt (2008); Cateau, Kryvtsov, Shukayev, and Ueberfeldt (2009); Dib, Mendicino, and Zhang (2008); Covas and Zhang (2008); and Coletti, Lalonde, and Muir (2008).

- Cateau, G., O. Kryvtsov, M. Shukayev, and A. Ueberfeldt. 2009. "Adopting Price-Level Targeting under Imperfect Credibility in ToTEM." Bank of Canada Working Paper No. 2009-17.
- Coletti, D., R. Lalonde, and D. Muir. 2008. "Inflation Targeting and Price-Level-Path Targeting in the Global Economic Model: Some Open Economy Considerations." IMF Staff Papers, Vol. 55, No. 2.
- Coletti, D., R. Lalonde, P. Masson, and D. Muir. 2009. "Commodities and Monetary Policy: Implications for Inflation and Price Level Targeting." Bank of Canada. Manuscript.
- Covas, F. and Y. Zhang. 2008. "Price-Level versus Inflation Targeting with Financial Market Imperfections." Bank of Canada Working Paper No. 2008-26.
- de Resende, C., A. Dib, and M. Kichian. 2009. "Optimal Monetary Policy in Multi-Sector Small Open Economy Models: Conventional Wisdom?" Bank of Canada. Manuscript.
- Diamond, D. W. and R. Rajan. 2005. "Liquidity Shortages and Banking Crises." *Journal of Finance* 60 (2): 615–47.
- Dib, A., C. Mendicino, and Y. Zhang. 2008. "Price Level Targeting in a Small Open Economy with Financial Frictions: Welfare Analysis." Bank of Canada Working Paper No. 2008-40.
- Fisher, P. R. 2008. "Commentary: The Role of Liquidity in Financial Crises." Comments on a paper presented by E. Carletti and F. Allen at the symposium "Maintaining Stability in a Changing Financial system." Jackson Hole, Wyoming. August.
- Gorton, G.B. and A. Metrick. 2009. "Securitized Banking and the Run on Repo." Yale ICF Working Paper No. 14. Available at SSRN: <http://ssrn.com/abstract=1440752>.
- King, M. 2009. Speech at the Lord Mayor's Banquet for Bankers and Merchants of the City of London at the Mansion House. London, England. 17 June.
- Kryvtsov, O., M. Shukayev, and A. Ueberfeldt. 2008. "Adopting Price-Level Targeting under Imperfect Credibility: An Update." Bank of Canada Working Paper 2008-37.
- Shirakawa, M. 2009. "Some Thoughts on Incentives at Micro- and Macro-level for Crisis Prevention." Remarks at the Eighth Bank for International Settlements Annual Conference. Basel, Switzerland. 26 June.
- Steinsson, J. 2003. "Optimal Monetary Policy in an Economy with Inflation Persistence." *Journal of Monetary Economics* 50(7): 1425–65.
- Walsh, C. 2009. "Using Monetary Policy to Stabilize Economic Activity." Paper prepared for the symposium "Financial Stability and Macroeconomic Policy." Jackson Hole, Wyoming. August.
- White, W. R. 2009. "Should Monetary Policy 'Lean or Clean'?" Center for Financial Studies. Goethe University. Frankfurt. May.