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Pitfalls and Opportunities for the Conduct of Monetary Policy in a World of High-Frequency Data

Pierre Siklos

Discussion

John Murray

Professor Siklos has written a thoughtful and timely paper. In recent years, policy-makers and private investors have come to rely increasingly on sophisticated mathematical models and high-frequency data, both to support their daily activities and to help guide the more strategic aspects of their jobs. Siklos' paper examines this growing dependence in the context of two interrelated questions that are of obvious interest to the Bank of Canada: (i) how useful are high-frequency data for the conduct of monetary policy; and (ii) how dangerous are they?

Although Siklos' analysis is couched in more cautious terms, his short answers to these two questions seem to be: (i) not very useful, and (ii) very dangerous. Before reviewing his conclusions, however, it is important to be clear about what he means by the terms 'conduct of monetary policy' and 'high-frequency data.'

The author is careful to note that central banks have two primary responsibilities: achieving and maintaining price stability, and protecting the financial system from systemic failure. While the two activities are often complementary, one can imagine situations where success in one area might prejudice the other. Easier credit conditions, for example, designed to support failing financial institutions, could lead to inflationary pressures.

It is also possible to imagine situations in which access to timely data might help policy-makers both stabilize the macroeconomy and defend the financial system. In most instances, however, high-frequency data are likely to be of greatest interest to those involved in the prudential aspects of central banking, as opposed to achieving and preserving price stability. Since monetary policy typically operates with a one- or two-year lag, almost any data series can be regarded as high-frequency from this perspective. By trying to look at everything, however, monetary authorities may lose sight of the most important things. I will explore the potential uses and abuses of high-frequency data in greater detail, drawing on Siklos' useful work.

How Useful Are High-Frequency Data?

Early examples of the application of high-frequency data to the conduct of monetary policy include term-structure analyses and money-targeting exercises, which were popular during the 1960s and 1970s, respectively. These practices have now been supplanted, however, by newer, more exotic techniques that make extensive use of derivatives data. Risk reversals, implied volatilities, and estimated probability distributions have entered into the central banker's lexicon and largely replaced broad money measures and credit aggregates as favoured monitoring tools. Part of their attraction no doubt stems from the fact that they are available minute by minute. If any of these data are to be useful for policy purposes, however, they must be accurate and reliable, not simply timely.

Unfortunately, the empirical tests Siklos reports in Section 3 of his paper are not very encouraging. The five major results can be summarized as follows:

1. Sharp movements in asset prices and exchange rates signal only crises that are already in progress and would have been evident in any case;
2. Few variables, other than yield differentials, are significant and reliable predictors in probit analyses of financial crises;
3. Private sector forecasts of inflation are not affected in any systematic way by major news releases or new financial data;

4. High-frequency data are not useful for predicting 'long memory' inflation (i.e., trend movements in prices); and
5. The monetary conditions index that the Bank of Canada monitors masks potentially useful information for identifying crises.

The Dark Side of High-Frequency Data

Having established that high-frequency data are often unhelpful, Siklos goes on to show that they can also be harmful. In particular, he notes how they can encourage behaviour that is myopic, distracted, and destabilizing. (In colloquial terms, these traits might be referred to as failing to see the forest for the trees, looking at the wrong forest, and inadvertently setting the forest on fire.)

This is not to suggest that there are no benefits associated with high-frequency data, simply that it is important for policy-makers to use them judiciously. High-frequency data and sophisticated mathematical models can help policy-makers quantify market risks, but they can also give an exaggerated sense of precision and cause policy-makers to lose sight of what really matters. Increased volatility in financial markets, for example, is often regarded as harmful, and as a harbinger of future macroeconomic instability. In practice, however, increased volatility seldom has any significant effect on real economic activity. Moreover, it is often associated with necessary market corrections and is driven by economic fundamentals as opposed to speculative caprice.[1] Indeed, research has shown that short-run volatility might actually be beneficial, enhancing both economic efficiency and consumer welfare.[2]

Some Remedial Measures

How can policy-makers and private investors guard against the pitfalls of 'short-termism' and high-frequency data? Traditionally, they have relied on a mixture of economic theory and practical experience to ensure that they focus on the most useful elements of the information they receive. More recently, however, greater attention has been given to the institutional arrangements surrounding the policy-decision process.

In the case of monetary policy, there is general agreement that clear and specific mandates, coupled with greater accountability and improved governance, should lead to better policy outcomes. The increased transparency that more open institutional arrangements create not only imposes a useful discipline on policy-makers, it also leads to a more informed and active public debate. Policy-makers who are distracted by irrelevant high-frequency data, or who pursue less-meaningful objectives, soon find themselves subject to intense public criticism and forced to defend their actions. Inflation targets are a useful example of this more open and disciplined approach to policy formulation and implementation.

One additional means that has been proposed for influencing market behaviour and disciplining policy-makers is the use of fixed meeting dates. Many central banks, including the U.S. Federal Reserve, the Deutsche Bundesbank, the Banque de France, and the Bank of England, now operate under a system in which senior managers meet only for policy-setting purposes on fixed dates throughout the year. Except in the case of extraordinary events, all significant monetary policy changes are expected to be made during these meetings. The periodic and predictable nature of the decision dates is believed to offer two advantages. First, it should encourage policy-makers and investors to take a broader view of recent economic developments, and avoid giving undue weight to the latest data release. Second, it should help focus market attention on certain critical dates, and thereby limit the continuous speculation that can attend more flexible and ad hoc arrangements. If the monetary authorities are free to change official interest rates on any given day, markets must constantly be on guard, and may take a very narrow view of economic developments. While some observers believe that the small and open nature of our economy makes fixed meeting dates impractical for Canada, others see considerable merit in moving to such a system.

These and other measures can offer some protection from the pitfalls that Siklos identifies in his paper. Ultimately, however, there is no substitute for good judgment.

Endnotes

1. See Murray, van Norden, and Vigfusson (1996).
2. One of the first to recognize this was Frederick Waugh (1944).

References

- Murray, J., S. van Norden, and R. Vigfusson. 1996. *Excess Volatility and Speculative Bubbles in the Canadian Dollar: Real or Imagined?*Bank of Canada Technical Report 76.
- Waugh, F. 1944. 'Does the Consumer Benefit from Price Instability?' *Quarterly Journal of Economics*LVIII (August): 602–14.