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Price Stability, Inflation Targets and Monetary Policy

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Macklem replied to the point in Smith's discussion paper that the explicitly forward-looking inflation (EF-I) rules do well compared with Taylor-type (C-IY) rules because they assume model-consistent solutions (and hence that the monetary authority knows the exact structure of the model): he commented that in a linear, closed-economy world the two types of rules would be identical since current inflation and the output gap together provide an optimal prediction of future inflation. The dominance of EF-I over C-IY arises in the Canadian Policy Analysis Model (CPAM) because it has a non-linear Phillips curve, and the exchange rate channel is an important part of the transmission mechanism. He then noted that models like CPAM are not just laboratory economies, but practical tools to provide policy advice for central bankers. It would seem crazy to use a rule other than the one that is consistent with the model on which the advice is based. Macklem acknowledged that the robustness of the model is an issue that must be addressed, and that one way of doing so would be to introduce parameter uncertainty into the model so that the monetary authority knows less about the structure of the model.

On the issue of comparing CPAM to history, Macklem noted that the reaction function in the model is based on the Bank's having a well-defined inflation or price-level target, and agreed that over history this is problematic because we do not know what the implicit inflation target of the Bank of Canada was in the years before it had an explicit target.

In discussion from the floor, Michael Devereux asked about the identification of the shocks in the structural VAR. He noted that it is difficult to identify more than two or three shocks in aggregate data, whereas the authors have six different shocks. He said that the impulse response graphs do look very good, but he would be interested in seeing some standard errors. He also wondered if the authors had experimented with different orderings of the variables in the VAR (that is, with different identifying assumptions). Macklem replied that they had tried many different VARs and settled on the ones in which the impulse responses conformed to the behaviour of the CPAM model in deterministic simulations and that accorded with what one would expect from textbook macroeconomic theory.

Frank Smets noted that the model used the interest rate spread as the dependent variable in the monetary policy reaction function. He wondered why the authors did not use the monetary conditions index (MCI), which is a function of both interest rates and the exchange rate, given that the Bank currently uses the MCI as a guide to policy. He noted that, when talking about the Taylor rule, the use of the MCI would take into account the exchange rate and thus appropriately adapt the Taylor rule to an open economy. Macklem replied that the exchange rate is endogenous and responds to all the shocks in the model as well as to the interest rates set by monetary policy. He said that one would not want to express the policy rule in terms of the MCI. The MCI is a useful rule of thumb to incorporate the influences of the exchange rate when a full model simulation is not possible. In the model, however, all the effects of changes in the policy-determined short-term interest rates are taken into account, including those operating through the exchange rate channel.

Smets also noted that the weights in the Bank of Canada's MCI are based on the elasticities of the output gap, suggesting that the Bank puts more weight on reducing the variability of output than that of inflation. This would correspond to the Bank's having a preference for an outcome like point A in Figure 2 of the paper, rather than, say, point B. He wondered if this was a correct assessment of the Bank's objective function. Charles Freedman replied from the floor to this question. He said that the Bank was looking for an

outcome like point A. That is, the Bank does not want to target inflation exactly. Instead, it has what he termed a "soft-edged target." This was made explicit in the initial background document to the inflation-reduction targets, in which it was acknowledged that inflation would depart from the target range from time to time.

Serge Coulombe asked whether the results in the CPAM model on price-level targeting could be interpreted as an example of the result from his paper that nominal interest rates are less variable under a policy of targeting the price level rather than inflation. Macklem replied that the simulation results from CPAM were indeed a confirmation of Coulombe's analytic results.

Brian Stuart raised an issue that had been receiving some attention in the United States: If there is uncertainty about the level of potential output, and hence of the output gap, might there be justification for allowing monetary policy to be expansionary a bit longer than in a world of certainty, to see if potential output has grown more than expected? He wondered if CPAM could address this issue. Rose replied to this question and to some of Smith's comments on the general issue of introducing parameter uncertainty into the model: the model currently has uncertainty due only to exogenous shocks and so cannot address uncertainty about the output gap. He pointed out that inflation would be more variable over time if the monetary authority allowed the economy to overheat occasionally in order to acquire more information about the level of potential output. Since the model has a convex Phillips curve, this greater inflation variability would result in a lower average level of output.