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Measuring regional effects of monetary policy in Canada

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Abstract

This article measures monetary policy shocks and examines whether the effects of such shocks have differential regional effects in Canada. We identify three possible sources of regional effects: differences in the importance of interest-sensitive industries, differences in the contribution of exports to output and differences in the proportion of small relative to large firms. Using the overnight interest rate as the instrument of monetary policy, we present impulse responses of industry output from a recursive vector autoregression, which incorporates a cointegrating relation. The results show that manufacturing and primary industries are the most interest sensitive. We conduct impulse responses of provincial employment from a monetary contraction. The results show that Newfoundland and Prince Edward Island (PEI), primary industry-based provinces, are strongly and adversely affected by a monetary contraction. Manitoba, Saskatchewan and Alberta, also primary-based, are also affected. Ontario, which is

manufacturing-based, is also affected but to a lesser extent. The response of Quebec, New Brunswick, Nova Scotia and British Columbia are not statistically significant.

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Notes

[1] Asymmetric shocks across regions are just one issue of optimal currency areas. Mundell (1961) outlines that one needs to weigh the benefits in terms of greater economic efficiency at the micro level with the costs in terms of less economic stability and wider fluctuations in output and unemployment.

[2] The rationalization of industries caused by the implementation of Free Trade agreement in 1989 was another contributing factor. Gaston and Trefler (1997) show that 15% of the total drop in employment in all industries over 1989 to 1993 was due to the Free Trade Agreement.

[3] This is in part because the former two provinces contribute the largest share of overall employment.

[4] For more on VAR identification, see Christiano et al. (1998) and Enders (1995).

[5] In this article, we did conduct analysis using the spread defined as the difference between the long-term 10-year T-bond yield, where the results remained robust. The results are available upon request.

[6] The latter two studies note that energy prices improve the explanation of the exchange rate, but the sign of the coefficient is opposite of what is expected and in some cases is statistically insignificant. The relevance of this variable is debatable; as such we will omit it from our analysis. The added benefit of omitting this variable is that our VAR estimates will be more efficient given we have less parameters to estimate.

[7] The results are available upon request.

[8] For each impulse response figure, the horizontal axis shows the number of periods, where time 0 is the period of the shock. Each period represents a month. The dashed lines represent a one SD band around the estimates of the coefficients of the impulse response functions. The confidence bands are obtained using Monte Carlo integration,

as described by Sims (1980) and Doan (1996), where 500 draws were used from the asymptotic distribution of the VAR coefficients.

[9] They exclude the exchange rate and commodity given that the United Sates is a large open economy and is relatively less resource dependent than Canada.

[10] For details of the various budget rules, see Millar (1997), pp. 2–10.

[11] See Zhang et al. (2004) for a discussion and an analysis of a monetary union for East Asia.

[12] Hayo and Uhlenbrock (2000) find differential impact of monetary policy within Germany. An interesting question would be to compare this volatility with the volatility with Germany in the European Union with the European Central Bank conducting policy. Holman and Newman (2002) study on the effects on Canada and the United States from a monetary policy shock in the United States or Canada, where this article is a starting point in comparing the regional effects within Canada with the volatility effects from a shock in the United States.

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