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# Does trade openness matter for aggregate instability?

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## Abstract

This paper presents a cash-in-advance model of a small open economy and shows that whether an inflation-targeting interest rate rule introduces aggregate instability depends in general on the degree of openness to international trade. This result emerges regardless of whether prices are sticky or flexible. In a closed economy, as the monetary authority responds to movements in inflation, the resulting changes in interest rates affect aggregate consumption through an intertemporal substitution effect and an inflation tax effect. In a small open economy, this policy also induces changes in the terms of trade, which, depending on the degree of openness, can generate counteracting effects on consumption. As a consequence, the implications of interest rate rules on macroeconomic stability in an open economy differ from those in a closed economy.

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## 1. Introduction

The most recent decade has witnessed an increasing popularity of inflation-targeting policies, particularly in small countries that are highly open to international trade. As Table 1 shows, these countries share two common features. First, the degree of openness measured by the share of exports (or imports) in gross domestic product (GDP) is typically large: it ranges from 21% in Australia, to around 40% in Sweden and Canada, and to more than 60% in the Czech Republic. Second, most of the central banks in these countries have adopted CPI inflation as a targeting variable, while allowing exchange rates to be freely floating.

To achieve the goal of price stability, many academics and policy makers have argued for adopting a simple feedback interest rate rule, under which the monetary authority adjusts the short-term nominal interest rate in response to changes in inflation (e.g., Taylor, 1993). The implications of these feedback rules on business cycle fluctuations have been extensively studied in the literature both for closed-economies (e.g., Clarida et al., 2000; Orphanides, 2001; and Rotemberg and Woodford, 1997) and for open economies (e.g., Ball, 1999; Erceg, 2002; McCallum and Nelson, 2001; Taylor, 2001). It is well known that, depending on the activeness of the policy, these rules can potentially lead to multiple equilibria. A conventional wisdom holds that equilibrium uniqueness obtains under an active interest rate rule, where the monetary authority raises the nominal interest rate more than proportionally in response to increases in the inflation rate (e.g., Clarida et al., 2000; Kerr and King, 1996; Woodford, 2003). The generality of this view has been challenged in the more recent literature. It has been shown that whether an active rule can ensure local equilibrium uniqueness may depend on, for example, whether the policy is forward-looking (e.g., Bernanke and Woodford, 1997) or backward-looking (e.g., Benhabib et al., 2003; and Carlstrom and Fuerst, 2000, 2002), whether prices are sticky or flexible (e.g., Carlstrom and Fuerst, 2001), or how money enters the utility function or the production function (e.g., Carlstrom and Fuerst, 2001; and Benhabib et al., 2001a). Nonetheless, it is remarkable that most of such analyses have been conducted in a closed-economy context, despite the large trade share of many inflation-targeting countries.

Table 1  
Inflation-targeting in open economies

Country	Target variable	Year adopted	Import/GDP (%)	Export/GDP (%)
Australia	CPI (after 1998)	1993	22	21
Canada	CPI	1991	37	41
New Zealand	CPI (excl. interest)	1988	31	33
Sweden	CPI	1993	37	43
United Kingdom	Retail price index	1992	29	26
Czech Republic	CPI	1998	63	61

'Year Adopted' refers to the beginning year of explicit inflation-targeting policies. Trade statistics are for 2002, taken from the International Financial Statistics.

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