Journal of International Economics 68 (2006) 424–442
www.elsevier.com/locate/econbase

Inflation targeting rules and welfare in an asymmetric currency area

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Received 28 May 2002; received in revised form 13 August 2004; accepted 22 May 2005

Abstract

This paper studies the effect on monetary policy of differing degrees of competition and differing degrees of nominal rigidity between the members of a monetary union. In particular, we assess the welfare loss brought about by the use of a simple interest rate rule that does not take into account such structural differences. Our results show that, *ceteris paribus*, to maximize welfare the central bank should react more strongly to inflation pressure generated by the more competitive economies. Our work extends the results of Benigno [Benigno, P., 2004. Optimal monetary policy in a currency area. Journal of International Economics 63, 293–320] by showing that, if the degree of competition differs between countries, the optimal rule could involve placing a *greater* weight on the more "flexible" countries. Our study suggests that the size of the welfare losses generated by failure to take account of these asymmetries depends crucially on the actual combination of the various asymmetries. As a consequence, we show that, if the optimal weights are chosen under incomplete information regarding the extent and type of asymmetries, the resulting level of welfare could be lower than that produced by the symmetric rule.

Keywords: Asymmetric currency area; Monetary policy rules; Imperfect competition; Sticky prices; Second-order approximation

JEL classification: E3; E4; E5; F4

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0022-1996/$ - see front matter
doi:10.1016/j.jinteco.2005.05.013

1. Introduction

This paper studies the effect on monetary policy of differing degrees of competition and differing degrees of nominal rigidity between the countries of a two-member monetary union. In particular, we assess the welfare losses brought about by the use of a simple monetary policy rule that does not take into account such structural differences.[1]

The creation of the European Economic and Monetary Union has stimulated new research on the theoretical aspects of the design of a monetary policy for a currency area. For example, Benigno (2004) has shown that, to maximize welfare, the central bank's stabilization policy should take into account differences in the degree of nominal rigidity between the countries participating in the monetary union. The differing degrees of price flexibility may cause concern for the monetary authority of the union because they produce differences in the development of producers' inflation and, ultimately, differences in the degree of inefficient "output dispersion" (Woodford, 2003; Khan et al., 2000).[2] In our paper we show that differing degrees of competition between countries will imply differing degrees of inefficient output dispersion even when the two economies have identical degrees of nominal rigidity.

One might well argue that other asymmetries could cause equal concern for an "inflation-targeting" central bank of a currency area. So why focus on imperfect competition? Unlike differences in technology, for example, differing degrees of competition denote differences in the "efficiency" of the respective economies. Very often, the policy debate about monetary policy, on the one hand, and structural reforms, on the other, tends to treat market structure issues as a long-run phenomenon divorced from monetary policy.[3] This paper offers a different perspective by highlighting the effects of the monopolistic distortion on the design of a monetary policy. Furthermore, imperfect competition is traditionally seen as a source of "static" deadweight losses (i.e. the "Harberger triangles"). In our dynamic model, monopolistic distortion acquires a second-best quality. When this distortion is coupled with sticky-price distortion, it has a partial positive effect on welfare, although the net effect is likely to be negative in practice. We believe that this paper can improve our understanding of this effect.

Finally, it is generally believed, and it has been documented empirically[4], that the degree of price rigidity and the degree of competition of an economy are related, at least to some extent. Our paper stops short of providing a theory of this relationship. Instead it shows that by studying the effects of changes in both the degree of price rigidity and the degree of competition, we obtain policy prescriptions that differ considerably from those obtained by studying each aspect in isolation.

We show that the benevolent central bank of the monetary union should respond more strongly to inflation pressure from the more competitive economy, all else being equal. With staggered price setting, the amount of "output dispersion" generated by a given deviation of prices from their average depends positively on the elasticity of substitution between goods (i.e.

[1] For example, the European Central Bank uses a measure of inflation (the euro-area HICP) that weighs the individual countries' inflation by their consumption shares (see Table 4.1 of the Methodological Notes of the ECB *Monthly Bulletin*).

[2] By inefficient "output dispersion" we mean the allocation of production across the various production units that would not take place if prices were flexible and reflecting the true marginal cost of production.

[3] We thank an anonymous referee for raising this point.

[4] Some empirical evidence seems to suggest that the intervals between price adjustments increase with market concentration (e.g. Carlton, 1986; Powers and Powers, 2001).