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Rule-of-thumb behaviour and monetary policy

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Abstract

We investigate the implications of rule-of-thumb behaviour by consumers or price setters for optimal monetary policy and simple interest rate rules. This behaviour leads to endogenous persistence in output and inflation and alters the policymaker's welfare objective. Our main finding is that highly inertial policy is optimal regardless of what fraction of agents occasionally follow a rule of thumb. We also find that a first-difference version of Taylor's (Carnegie–Rochester Conf. Ser. Public Policy 39 (1993) 195–214) rule generally has desirable properties. By contrast, the coefficients in other optimised simple rules tend to be extremely sensitive with respect to the fraction of rule-of-thumb behaviour.

JEL classification: E31; E32; E52

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1. Introduction

The characterisation of desirable monetary policy has been the subject of a large body of recent research. The question of what constitutes "optimal" monetary policy within structural models derived from optimising behaviour of households and firms has been a particularly lively area. A number of these studies are based on models in which the non-neutrality of monetary policy is derived from assuming frictions to price adjustment on the part of imperfectly competitive firms (e.g., Ireland, 1997; Rotemberg and Woodford, 1997; Clarida et al., 1999; Woodford, 1999b). In these models, the price decisions of firms that are optimal given the assumed frictions to price adjustment [1]

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[1] The frictions to price adjustment referred to are alternatively Taylor's (1979) overlapping contracts, Rotemberg's (1982) convex costs of price adjustment, or Calvo's (1983) constant hazard model of readjustment of prices.

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lead to a relation linking current inflation to a measure of the current output gap, or current marginal cost, and expected future inflation, which Roberts (1995) has called the "new-Keynesian Phillips curve". This description of the supply side of the economy is usually complemented on the demand side by a standard Euler equation characterising households' optimal consumption choice.

A notable feature of such models is the absence of lagged variables in the structural equations. The dynamics of output and inflation depend entirely on expectations of future values of these variables as well as future monetary policy actions. From an empirical perspective, this class of models has been criticised as being unable to replicate the high serial correlation found in both output and inflation data of many industrialised economies, unless one is willing to assume a substantial degree of serial correlation in the structural disturbances of the model (Fuhrer, 1997a,b).

The failure of the consumption Euler equation to capture the dynamics of aggregate nondurable consumption, let alone those of aggregate output, has been debated for a long time (Mankiw et al., 1985; Deaton, 1992; and many others). One proposed solution that maintains the assumption of optimal consumption choice is to allow for habit formation in preferences. Habit formation has been shown to improve the fit of small-scale business cycle models on U.S. time series, including aggregate consumption data (e.g., Fuhrer, 2000), as well as being able to explain various anomalies in the finance literature (e.g., see Campbell et al., 1997, Chapter 8). However, while habit formation may be useful in explaining various aspects of aggregate data, direct evidence for habit formation based on data at the household level is hard to find (e.g., Dynan, 2000).

More recently, attention has focused on the question whether the new-Keynesian Phillips curve is able to explain the high serial correlation in inflation in the United States (Fuhrer and Moore, 1995a) as well as other industrialised countries (Coenen and Wieland, 2000). Fuhrer and Moore argue that the price setting problem underlying the new-Keynesian Phillips curve is misspecified, and propose a contracting specification in which price setters are concerned about their relative *real* contract price. However, their specification seems at odds with optimising behaviour, since profit maximisation motivates only a concern for relative *nominal* contract prices or wages. On the other hand, Sbordone (2002) and Gali and Gertler (1999) provide evidence that the source of inflation inertia arises from the sluggish response of firms' real marginal cost to fluctuations in output.

An alternative approach to explaining the apparent dependence of current values of output and inflation on *past* as well as expected future conditions is to allow the choices of some agents to deviate from optimal behaviour due to, e.g., limits on their capacity to form fully rational expectations. Roberts (1997) considers deviations from rational expectations formation on the part of price setters. Similarly, Gali and Gertler (1999) derive a structural relationship explaining current inflation as depending on *lagged* inflation as well as current marginal cost and expected future inflation by assuming that a fraction of firms set prices by following a rule of thumb, while the remaining firms set prices in the optimal, forward-looking manner.

This article studies the implications for optimal monetary policy of rule-of-thumb behaviour. We believe there are compelling reasons for considering such behaviour,