



ELSEVIER

Available online at www.sciencedirect.com

SCIENCE @ DIRECT®

European Economic Review 49 (2005) 485–503

EUROPEAN
ECONOMIC
REVIEW

www.elsevier.com/locate/econbase

Are monetary-policy reaction functions asymmetric?: The role of nonlinearity in the Phillips curve

Juan J. Dolado^{a,b,*}, Ramón María-Dolores^c, Manuel Naveira^d

^aDepartment of Economics, Universidad Carlos III de Madrid, c/Madrid 126, 28903 Getafe, Madrid, Spain

^bCenter for Economic Policy Research, London, UK

^cDepartamento de Fundamentos del Análisis Económico, Universidad de Murcia, Spain

^dBBVA, Unidad de Control de Riesgos, Via de Los Poblados s/n, 28033 Madrid, Spain

Accepted February 2003

Abstract

This paper investigates the implications of a nonlinear Phillips curve for the derivation of optimal monetary policy rules. Combined with a quadratic loss function, the optimal policy is also nonlinear, with the policy-maker increasing interest rates by a larger amount when inflation or output are above target than the amount it will reduce them when they are below target. Specifically, the main prediction of our model is that such a source of nonlinearity leads to the inclusion of the interaction between expected inflation and the output gap in an otherwise linear Taylor rule. We find empirical support for this type of asymmetries in the interest rate-setting behaviour of four European central banks but none for the US Fed.

© 2003 Elsevier B.V. All rights reserved.

JEL classification: E52; E58

Keywords: Taylor rules; Nonlinearities; Phillips curve

1. Introduction

For the most part, derivations of optimal rules for the conduct of monetary policy have taken place in a linear–quadratic (L–Q) framework, stemming from the combination of a quadratic objective function for the policymaker and a linear dynamic system

* Corresponding author. Department of Economics, Universidad Carlos III de Madrid, c/Madrid 126, 28903 Getafe, Madrid, Spain. Tel.: +34-1-624-9300; fax: +34-1-624-9313.

E-mail address: dolado@eco.uc3m.es (J.J. Dolado).

describing the economy; cf., inter alia, Taylor (1993, 1999), Svensson (1997) and Clarida et al. (1998, 2000). When the policy instrument is a short-term interest rate, this combination leads to a linear reaction function (Taylor rule) whereby central banks adjust nominal interest rates proportionally to inflation and output deviations from their targets.

There are, however, at least three good motives to challenge the L-Q paradigm underlying linear Taylor rules. First, it has been recognised for some time that the short-run inflation–output trade-off may be nonlinear. For instance, convexity may arise under the traditional Keynesian assumption that nominal wages are flexible upwards but rigid downwards, giving rise to a quasi-convex AS schedule; cf. Baily (1978). More recently, Akerlof et al. (1996) have further elaborated on this argument claiming that even a downward-sloping Phillips curve (in the inflation–unemployment space) might hold in the long run at very low rates of inflation due to the existence of money illusion on the part of the workers when there is a price stability. Conversely, Stiglitz (1997) argues in favour of a concave relationship when the output gap is negative on the grounds that firms operating under monopolistic competition may exhibit increasingly greater willingness to reduce prices under weak demand to avoid being undercut by rival firms. Orphanides and Wieland (2000) is, to our knowledge, the first paper to consider this type of nonlinearity in the derivation of optimal reaction functions. In particular, they allow for a zone-linear Phillips curve where inflation is essentially stable for a range of output gaps and changes outside this range, providing in this way a good theoretical rationale for inflation-zone as opposed to inflation point-targeting behaviour by central banks. From an empirical viewpoint, Latxon et al. (1995, 1999), Álvarez-Lois (2000), Gerlach (2000) and others have presented evidence in favour of a convex shape for several European countries and the US whereby the inflationary tendencies of capacity constraints on prices imply a considerably steeper Phillips curve when the output gap is positive than when it is negative. In every case, the derived implication is an asymmetric response of inflation with respect to the output gap.

Secondly, there is a growing body of research that departs from the standard assumption of a quadratic loss function by acknowledging the possibility that central banks may have asymmetric preferences with respect to inflation and/or output gaps. For example, given that some central bankers are supposed to be accountable to elected political officials, Cukierman (1999) points out that they may have greater aversion to recessions than to expansions. Under these asymmetric preferences, an inflation bias à la Barro–Gordon emerges even when the policy-maker targets the natural output level rather than a larger level. By contrast, Mishkin and Posen (1997) argue that a deflation bias might be a more likely outcome, since independent central banks often tend to deny the possibility that an expansionary monetary policy stance can reduce cyclical unemployment, and report some favourable evidence to this viewpoint for the Bank of Canada and the Bank of England. Clarida and Gertler (1997), in turn, have tested formally for the null hypothesis of symmetry and found evidence against it for the Bundesbank. More recently, Orphanides and Wieland (2000), Ruge-Murcia (2002), Dolado et al. (2002), Surico (2002) and Cukierman and Muscatelli (2002) have analysed the implications for the derivation of interest-rate reaction functions of assuming asymmetric preferences with respect to inflation and/or output by the policy-maker.

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات