# Nominal income targeting in an open-economy optimizing model[☆]

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## Abstract

This paper presents simulation results regarding the performance of nominal income targeting, a monetary policy rule that sets interest rates in response to deviations of nominal GDP growth from a target path. The macroeconomic model is one in which agents solve dynamic optimization problems with rational expectations, but in an environment with slow price adjustments. In the present version, consumption choices reflect habit formation and the economy is open to international flows of goods and securities. When calibrated to quarterly US data, the model's results suggest that nominal income targeting performs well, in relation to inflation targeting and Taylor rules. © 1999 Elsevier Science B.V. All rights reserved.

## 1. Introduction

The purpose of this paper is to examine the merits of monetary policy rules that utilize as their principal target variable the level or growth rate of some

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aggregate measure of nominal spending, such as nominal GDP, rather than a monetary aggregate or an index of inflation – either alone or in combination with some measure of the output gap.[1] Considerable academic support for nominal spending targets has existed since circa 1980, and therefore predates the upsurge of interest in inflation targeting that began in the early 1990s with the adoption of inflation targeting by the central banks of New Zealand, Canada, the United Kingdom, and Sweden.[2] In our discussion we shall adopt the term 'nominal income targeting' because of its widespread usage, although it does not most accurately reflect the logic of the approach, according to the discussion below. Also, we shall use the word 'targeting' in the manner familiar from the existing literature, rather than in the more tightly defined sense suggested by Svensson (1997a) and Rudebusch and Svensson (1999). That is, we shall use the term '$X$-targeting' when the central bank sets its instrument in response to a rule that refers to deviations from a desired path for the variable $X$.[3]

We begin in Section 2 with an extremely brief review of the case for nominal income targeting (NIT) together with some evidence which suggests that NIT has in effect been utilized in practice in the United States. Our paper's main objective, however, is to develop new results concerning the possible desirability of NIT in the context of a quantitative structural macroeconomic model that represents an improved and extended version of the semi-classical framework presented in McCallum and Nelson (1999a). Toward that end, optimizing aggregate demand and supply specifications are developed in Sections 3 and 4. Both of these sections feature modifications designed to make the model one that depicts an economy open to trade and capital flows. In addition, our new demand specification incorporates habit-formation features that increase its ability to match aggregate US data at the quarterly frequency. The model is summarized and log-linearized in Section 5. Calibration of the model, based on properties of quarterly data for the United States – which is similar in size and openness to the European monetary union – is undertaken in Section 6. The main simulation exercises are finally reported in Section 7 and their implied messages are summarized in Section 8.

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[1] We do not explicitly consider a policy of targeting some foreign exchange rate because the merits of such a regime seem to be largely based on either political or microeconomic (i.e., resource allocation) grounds, which are not amenable to study with macroeconomic models. Nevertheless, we report a small bit of evidence regarding the macroeconomic properties of an exchange rate target.

[2] For discussions of inflation targeting see Mishkin and Posen (1997), McCallum (1997), and individual papers in the volumes edited by Haldane (1995) and Leiderman and Svensson (1995).

[3] By contrast, Rudebusch and Svensson would call this 'responding to the variable $X$', and would reserve the term 'target' for variables that appear in the central bank's objective function. Although we applaud those authors' desire for terminological precision, we are not persuaded that adoption of their proposed terminology is desirable. On this issue, see our working paper version of the present paper (McCallum and Nelson, 1998, Appendix A).