Available online at www.sciencedirect.com
ScienceDirect
Journal of Economic Theory 145 (2010) 860–868
JOURNAL OF Economic Theory
www.elsevier.com/locate/jet

Note

# Monetary policy under a fiscal theory of sovereign default ☆

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Received 1 June 2009; final version received 1 September 2009; accepted 26 September 2009

Available online 24 October 2009

**Abstract**

This paper examines equilibrium determination under different monetary policy regimes when the government might default on its debt. We apply a cash-in-advance model where the government does not have access to non-distortionary taxation and does not account for initial outstanding debt when it sets the income tax rate. Solvency is then not guaranteed and sovereign default can affect the return on public debt. If the central bank sets the interest rate in a conventional way, the equilibrium allocation cannot be determined. If, instead, money supply is controlled, the equilibrium allocation can uniquely be determined.


*JEL classification:* E31; E52; E63

*Keywords:* Equilibrium determination; Interest rate policy; Money supply; Public debt; Sovereign default

## 1. Introduction

How should monetary policy be conducted when fiscal policy does not guarantee full debt repayment? [9] suggests that central banks should control monetary aggregates if interest rates

☆ The author would like to thank Roel Beetsma, Wouter den Haan, Mark Gertler, Philipp Harms, Dirk Niepelt, Leopold von Thadden, and other seminar participants at the Federal Reserve Bank of New York, the Free University Berlin, and the University of Amsterdam for helpful comments. This work has been supported in part by the Collaborative Research Center SFB 823 of the German Research Foundation (DFG). The usual disclaimer applies.

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0022-0531/$ – see front matter 
doi:10.1016/j.jet.2009.10.013

are associated with default risk. In this paper, we provide a formal analysis of this question by extending the "Fiscal Theory of Sovereign Risk" of [10] to a simple framework where money serves as a means of payment and government surpluses are endogenous. Fiscal policy does not guarantee full debt repayment, such that sovereign default affects the effective rate of return on government bonds. Conducting monetary policy by setting the nominal interest rate then fails to determine the equilibrium allocation, while the equilibrium allocation and the associated price system can uniquely be determined under a money growth policy.[1]

It is known that monetary policy can be severely constrained by fiscal policy, in particular when the government fails to guarantee government solvency (see e.g. [2] or [3]). Most prominently, the fiscal theory of the price level (FTPL) has demonstrated that monetary policy is required to accommodate fiscal policy, when the government decides on primary surpluses irrespective of outstanding debt.[2] We depart from the FTPL approach and consider that investors/households account for the possibility of sovereign default due to intertemporal insolvency, consistent with the criticism raised by [7]. In contrast to the set-up in [10], we allow production to be endogenous and assume that non-distortionary taxes are not available such that tax revenues depend on the equilibrium allocation. The income tax rate is assumed to be constant and does not guarantee debt obligations to be fully serviced. Sovereign default can occur if the present value of endogenous revenues from distortionary taxation and from seigniorage are too low, while we do not consider the case where the government strategically defaults on debt.

Due to a cash-in-advance constraint monetary policy is non-neutral and might affect the equilibrium allocation and government revenues. We show that monetary policy implementation is decisive for the determination of the equilibrium allocation. Since debt obligations might not fully be served, the actual debt repayment rate and the contractual interest rate on public debt jointly affect the saving decision of households. A standard interest rate policy (regardless whether interest rates are set exogenously or contingent on macroeconomic indicators) is then ineffective in the sense that neither the equilibrium allocation nor the associated price system can be determined. In contrast, if the central bank controls the money growth rate, the equilibrium allocation and the associated price level can uniquely be determined.

The remainder of this paper is organized as follows. Section 2 presents the model. In Section 3 equilibrium determination under different monetary policy regimes is examined. Section 4 concludes.

## 2. The model

This section presents a simple perfect foresight model with a cash-credit good distortion and a labor income tax. The government is assumed not to have access to lump-sum taxation. Following [10], we assume that tax revenues do not necessarily suffice to serve debt obligations, and – departing from the literature that considers strategic default[3] – we assume that the government is able to commit to its promises and serves its debt obligations as far as possible, for a given monetary and tax policy.

[1] This analysis adds a new argument to the debate on equilibrium determinacy under money growth rules (see [6] for an overview).

[2] See [11,12].

[3] See for example [4] or more recently [1].