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Fiscal policy in debt constrained economies ☆

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Abstract

We study optimal fiscal policy in a small open economy (SOE) with sovereign and private default risk and limited commitment to tax plans. The SOE's government uses linear taxation to fund exogenous expenditures and uses public debt to inter-temporally allocate tax distortions. We characterize a class of environments in which the tax on *labor* goes to zero in the long run, while the tax on capital income may be non-zero, reversing the standard prediction of the Ramsey tax literature. The zero labor tax is an optimal long run outcome if the economy is subject to sovereign debt constraints and the domestic households are impatient relative to the international interest rate. The front loading of tax distortions allows the economy to build a large (aggregate) debt position in the presence of limited commitment. We show that a similar result holds in a closed economy with imperfect inter-generational altruism, providing a link with the closed-economy literature that has explored disagreement between the government and its citizens regarding inter-temporal tradeoffs.

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1. Introduction

Economies frequently pursue policies that lead to fiscal crises, usually typified by sustained deficits that eventually lead to an inability to increase or roll over debt (without paying an historically abnormal premium), and an associated sharp increase in tax rates and decline in government expenditure. The recent experience of Greece, Ireland, and Portugal, are only the latest examples of such crises.[1] Policies that run up debt, and eventually encounter borrowing constraints, may be the rational response of citizens (and their politicians) who face a world interest rate that is below their subjective rate of time preference. However, the normative question of optimal tax policy in an economy that faces long run binding debt constraints has not been thoroughly studied. To this end, this paper studies optimal fiscal policy in economies that are debt constrained, with a specific interest in relatively "impatient" economies for which the debt constraints are particularly relevant.

We consider optimal fiscal policy in a linear-tax framework. The canonical Ramsey formulation of optimal fiscal policy is quite simple: a government funds fiscal expenditures using linear taxes, and chooses (under full commitment) the sequence of taxes that maximizes the welfare of the representative domestic household. A well known result in this framework is that capital taxes should be zero in the long run if the economy converges to a steady state (Judd, 1985; Chamley, 1986; Atkeson et al., 1999; Straub and Werning, 2014), and that taxes on labor income should be "smoothed" using government debt (Lucas and Stokey, 1983; Ljungqvist and Sargent, 2004). That is, if a steady state exists, the government will rely solely on labor taxes.[2] This prediction is robust to dropping the Ramsey assumption of full commitment, as shown by Dominguez (2007) and Reis (2013), if debt constraints do not bind in the steady state. There are a number of alternative environments in which capital is taxed in the steady state, but our focus is not solely the role of capital taxes in a steady state, but also the role of labor taxes.

This paper explores several variations of the canonical framework under limited commitment. At their core, each variation shares the fact that the inter-temporal marginal rate of substitution (MRS) of private agents may differ from the marginal rate of transformation (MRT) in the long run. In particular, private households are impatient relative to the inter-temporal price of resources. The greater impatience may reflect higher mortality in developing economies, imperfect altruism, or simple preference heterogeneity (with large/rich countries being rich because they have patient agents). Alternatively, countries with weaker domestic financial markets may export their savings, putting downward pressure on the world interest rate faced by citizens and governments in the rest of the world (Caballero et al., 2008; Mendoza et al., 2009). In this spirit, our primary scenario is a small open economy in which domestic households discount at a rate that differs from the world interest rate. If the economy faces a borrowing constraint, agents would like to pursue a declining path of consumption given the world interest rate, but are eventually constrained from doing so. Our main result is that in such an environment the tax on labor income converges to zero. That is, the optimal response to impatience and binding borrowing constraints is to *front load* taxes, driving labor taxes to zero in the limit. This result is quite general. In particular, we show that as long as (i) the private inter-temporal MRS is impatient relative to the inter-temporal MRT, (ii) the allocation remains interior (what we refer to as "no immiseration"), and (iii) there is no disagreement between the govern-

[1] See Reinhart and Rogoff (2009) for many more examples from the historical record.

[2] If labor is a type of capital, as in environments in which human capital can be accumulated, then labor taxes may also go to zero for the same reason that capital taxes go to zero. See Jones et al. (1997).

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