Tax policy and present-biased preferences: Paternalism under international capital mobility[☆]

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ABSTRACT

This paper deals with tax-policy responses to quasi-hyperbolic discounting. Earlier research on optimal paternalism typically abstracts from capital mobility. If capital is mobile between countries, it may no longer be possible for national governments to control domestic savings via capital taxation (as in a closed economy). In this paper, we take a broad perspective on public policy responses to self-control problems by showing how these responses vary (i) between closed and open economies, (ii) between small open and large open economies, and (iii) depending on whether or not both source based and residence based capital taxes can be used.

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1. Introduction

Much research effort has been put into studying savings behavior as well as the effects of tax policy on the incentives to save.[1] A major reason is, of course, that savings play a crucial role for economic growth and, therefore, ultimately also for future welfare. Concerns have also been raised about the level of savings, where a frequent argument is that the savings rates may be "too low" in many countries and, in particular, in the U.S., where the savings rates have been quite low for a long time (by historical comparison).[2] One argument emphasized in earlier research as to why individuals may save too little is that they suffer from bounded rationality in the sense of having "present-biased" preferences, i.e. a time-inconsistent preference for immediate gratification. A mechanism that generates this behavior is quasi-hyperbolic discounting, where

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[1] See Bernheim (2002) for a literature review.
[2] See, e.g., Guidolin and Jeunesse (2007) and Feldstein (2008).

the individual at any time uses a higher utility discount rate for intertemporal tradeoffs in the near future compared to the utility discount rate attached to intertemporal tradeoffs in a more distant future.[3,4]

The behavioral failure that quasi-hyperbolic discounting gives rise to is a self-control problem, where the preference for immediate gratification makes the individual's current self impose an externality on his/her future selves (sometimes referred to as "internality") which, in turn, provides an argument for policy intervention by a paternalistic government. A capital subsidy to correct the incentives to save was considered by Laibson (1996),[5] who assumed that the government aims at implementing a savings-target. This policy response is interpretable as being designed for a closed economy, since Laibson did not consider the possibility that capital is mobile between tax-jurisdictions. To the best of our knowledge, there are no studies analyzing the corresponding policy problem under international capital mobility. Such an extension of the literature is potentially very important because if the consumers can invest their savings both at home and abroad, then domestic capital taxes/subsidies may no longer constitute perfect instruments for influencing the incentives to save faced by the domestic residents. The reason is that international capital mobility may imply restrictions on the domestic post-tax interest rate, which render capital taxes ineffective; or at least less effective than in a closed economy. This will be described in greater detail below. Therefore, the optimal policy response to quasi-hyperbolic discounting derived for a paternalistic government in a closed economy may actually be misleading if applied to an open economy. The present paper examines how a paternalistic government can use the income tax instruments available in an open economy to address the undersavings-problem caused by quasi-hyperbolic discounting, and the analysis is based on a general equilibrium model.

To further explain why capital mobility is important in this particular context, it is useful to distinguish between a small open economy whose government treats the world-market interest rate as exogenous, and a large open economy where the government recognizes that it may influence the world-market interest rate through public policy, as well as between the source-principle and residence-principle for capital taxation. According to the former principle, capital income is taxed at source irrespective of whether it accrues to domestic or foreign residents, whereas the latter principle means that the government taxes the domestic residents irrespective of whether they earn their capital income at home or abroad. In a small open economy, a source based capital income tax would be completely ineffective as a means of influencing the incentives to save: a change in the tax rate just leads to an inflow or outflow of capital until the domestic post-tax interest rate returns to the equilibrium level given by the ("exogenous") foreign rate. Similarly, in a large open economy, neither the source based nor the residence based tax alone constitutes a perfect instrument for influencing the incentives to save, since the capital tax is also a strategic instrument for influencing the world-market interest rate. As such, to exercise perfect control over the savings behavior, both an unrestricted source based tax and an unrestricted residence based tax are needed; otherwise, the optimal tax policy may also feature adjustments of other broad-based taxes.

We take a broad perspective on optimal income taxation under quasi-hyperbolic discounting by (i) distinguishing between closed and open economies with mobile capital, (ii) addressing the policy implications of time-consistent (sophisticated) versus time-inconsistent (naive) consumers, and (iii) focusing on the simultaneous use of two tax instruments that governments typically have at their disposal; labor and capital income taxes. The distinction between naive and sophisticated consumers is arguably important: whereas a naive consumer behaves in a time-inconsistent way by erroneously expecting the self-control problem to vanish in the future, a sophisticated consumer recognizes that the future selves are also subject to the same self-control problem.[6] Also, since countries typically differ quite much in terms of resources and size, we examine the tax policy responses to quasi-hyperbolic discounting both in the context of small open economies (applicable to a number of European countries) and large open economies (such as the U.S.). To do so, we develop an overlapping generations (OLG) model with endogenous labor supply and savings, where each consumer lives for three periods (at least three periods are required to model quasi-hyperbolic discounting). The purpose is to analyze how a paternalistic government – which does not share the consumer-preference for immediate gratification – uses the capital and labor income taxes to correct for the behavioral failure that quasi-hyperbolic discounting gives rise to.

The income tax system is assumed to be nonlinear, which gives a reasonably realistic description of the tax instruments that many countries have at their disposal. This implies that the use of distortionary taxes is a consequence of optimization by the government and not due to the necessity to raise revenue per se. It also means that tax competition and the

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[3] See, e.g., Thaler (1981), Kirby and Marakovic (1995), Kirby (1997), Viscusi et al. (2008), and Brown et al. (2009) for experimental evidence pointing in this direction. See also Fredreick et al. (2002) for a review of empirical research on intertemporal choice.

[4] Bernheim et al. (2001) use data from the Panel Study of Income Dynamics and Consumer Expenditure Survey, and find that the conventional life-cycle model is unable to explain observed variation in retirement wealth in the U.S. They argue, instead, that their data is consistent with rules of thumb, mental accounting or hyperbolic discounting. A similar argument is presented by Mastrobuoni and Weinberg (2009), who find (on the basis of data from the Continuing Survey of Food Intake) that retirees with little pension savings, whose income mainly comes from social security, consume much less the week before they receive the paycheck than the week after.

[5] Other literature on public policy responses to quasi-hyperbolic discounting includes sin taxes attached to unhealthy commodities (e.g., Gruber and Köszegi, 2004; O'Donoghue and Rabin, 2003, 2006), health capital subsidies (Aronsson and Thunström, 2008) and public investment (Aronsson and Granlund, 2011).

[6] The behavioral implications of quasi-hyperbolic discounting may depend on whether consumers are naive or sophisticated (e.g., O'Donoghue and Rabin, 1999, 2001; Diamond and Köszegi, 2003). In an experimental study, Hey and Lotito (2009) find behavioral patterns consistent with both naivety and sophistication, even if naivety seems to be a more common type of behavior. See also the review by DellaVigna (2009).