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The winners and losers of tax reform: An assessment under financial integration☆

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ABSTRACT

I quantify the macroeconomic and redistributive effects of the unilateral elimination of the capital income tax in a two-country, heterogeneous-agent incomplete markets model with progressive labor income taxes. *Home*, by implementing the reform, induces government responses where labor income is taxed in *Home* and mostly subsidized in *Foreign*. In addition, post-reform price dynamics reduce *Home*'s wealth and suppress households' ability to do consumption smoothing, with negative effects on the majority—particularly on the poor. In turn, *Foreign* accumulates wealth, and price movements work particularly in favor of the poor. As a result, a large majority in *Home* prefers the *status quo* whereas *Foreign* supports the reform unanimously. These findings are robust to alternative scenarios where (i) the borrowing constraints are relaxed, (ii) both countries jointly eliminate capital income taxes, (iii) foreign interest income is taxed, and (iv) *Home* capital income tax is reduced from 40% to 35%.

1. Introduction

Should the capital income tax be eliminated? Capital income tax cuts in general—such as the one introduced in the US by the Bush administration in 2003 and extended through 2012—have been the subject of intense debate in both academic and policy circles.[1] Supporters of these tax reforms argue that they promote investment and output, and improve efficiency. Opponents, on the other hand, are concerned with the negative wealth distributional consequences of these reforms. They suggest that a capital tax cut primarily helps the rich.

Previous work studying the distributional effects of tax reforms has focused on closed economy-models, abstracting from countries' access to international financial markets. However, the globalization process has evolved over the past decades,

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[1] The Bush tax reform, known as the Jobs and Growth Tax Relief Reconciliation Act (JGTRRA), encompasses a cut in both capital gains and dividend taxes. This paper, however, focuses only on capital gains taxes and aims to address a central question in this literature regarding the elimination of capital income taxes.

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deepening financial imbalances in the world, creating an environment where policy decisions can have different implications for countries and households. This motivates the current study in quantifying the desirability of capital income tax reforms under international capital mobility. In a two-country heterogenous agent-incomplete markets model calibrated to match the key macroeconomic and distributional aspects of the US and the rest of the OECD, this paper explores how these model economies respond to the elimination of capital income taxes. In doing so, the paper also addresses how the gains and costs of the reform in a country are shared by both countries as well as the households of different income and wealth levels in these countries, which has also remained largely outside the focus of the literature.

Following Chamley (1986) and Judd (1985), a main finding in the Ramsey literature is that in the standard neoclassical growth model it is not optimal to tax capital in the long run. In a similar framework, a related policy prescription by Lucas (1990) was that if the highly distortionary capital income tax were to be replaced by a higher (and less distortionary) labor income tax in the US, households could enjoy significant welfare gains (a 1 percent increase in annual consumption) as the capital income tax cut stimulates investment, output, and consumption.[2] While the elimination of the capital income tax seems attractive in these closed economy models, it becomes even more attractive in a financially open economy since international borrowing amplifies the stimulus to investment and output and enables greater ability to do consumption smoothing during the transition. Mendoza and Tesar (1998) pointed out the importance of this channel, in a two-country neoclassical growth model. In such a setting, the elimination of the capital income tax leads to welfare gains to the US up to 33% more than in a closed economy model.

As one moves away from the neoclassical growth theory and considers an open economy under uninsured labor income risk and borrowing constraints, the welfare results change dramatically. In this more realistic environment, with flat-rate taxes on capital income and progressive taxes on labor income, the country that repeals its capital gains tax has an average permanent welfare loss of 7% of consumption. With only 4% of population that can potentially gain from it, the reform can be considered highly undesirable. The reform has positive spillover effects on the rest of the world: the average welfare gain is 40% and the whole population gains from the reform. Moreover, in a closed-economy version of the analysis, which is also considered in this paper for comparison with the literature, the average welfare loss goes up to 9%, while the benefits are shared by a larger number of households, given by 13%. Why is this so?

The key channels that determine the (un)desirability of the tax reform in this setting are (i) the dynamics of after-tax interest rates and labor income; (ii) the cross-country and within-country redistribution of wealth; and (iii) the way governments meet the budget constraints (i.e. by issuing debt and/or adjusting average labor income taxation in the economy). By altering the amount of precautionary savings and the ability to do consumption smoothing, the reform has quantitatively different implications on households at different income and wealth levels and in different countries.

The model studied is a two-country version of the Aiyagari (1994a) model where these financially-integrated countries, *Home* and *Foreign*, are calibrated to represent the US and the rest of the OECD countries, respectively. The framework is related to the heterogeneous-agent incomplete markets models of Bewley (1986), İmrohoroğlu (1989), and Huggett (1993), as well as Aiyagari (1994a) which is a one-sector neoclassical growth model with uninsurable idiosyncratic labor income risk and borrowing constraints. I enhance the model further by including government policy.[3] In this setting, I conduct an experiment *à la* Lucas (1990), Mendoza and Tesar (1998), and Domeij and Heathcote (2004), among others, by introducing a unilateral, unanticipated and permanent capital income tax cut in the US. The consequences of the reform are evaluated taking into account both steady state gains and the transitional dynamics. In particular, households with various initial wealth and labor productivity levels are tracked over time after the reform takes place, and their welfare is compared to the *status quo*. The calibration of the benchmark model of financial openness is realistic in the sense that at the initial steady state equilibrium, some relevant aspects of the macroeconomy and asset holding distributions across different wealth groups match the data for the US and the OECD.

The main experiment conducted can be described as follows. Consider two countries, *Home* and *Foreign*, that are financially integrated. *Home*, which unilaterally eliminates the capital income tax of 39.7%, accumulates physical capital and increases output, and can continue to do so by relying increasingly more on international borrowing as the world interest rate starts falling towards the reformed steady state. While external borrowing smooths out the transition path, it comes at the expense of a reduction in long-run consumption gains to service the debt. The government facing an unbalanced budget constraint has to adjust the average labor income taxation by taxing households at different levels of labor earnings. This adjustment takes place not only in *Home*, but also in *Foreign,* where international capital flows and price movements affect households' incomes and therefore the *Foreign* government's tax revenues. In turn, the governments' need to adjust labor income taxes in order to maintain fiscal solvency will affect the wealth distributions. In particular, the tax reform affects households depending on the composition of capital and labor earnings. The joint effect of these channels can only be determined with a quantitative exercise.

In many respects, the quantitative results between an open economy and an autarkic economy can be quite different. The capital accumulation in *Home* under financial integration is so large that the after-tax labor income of households goes up by 0.8% in *Home* between the two steady states, whereas in the closed economy version of the analysis there is a 2.1% decline.

[2] As Lucas put it, the welfare gain is twice that of eliminating 10% inflation, and about 20 times that of eliminating the business cycle.

[3] See Aiyagari and McGrattan (1998), Domeij and Heathcote (2004), Röhrs and Winter (2017), and Azzimonti et al. (2014) with examples of government policy in a heterogeneous agent-incomplete markets framework.