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Efficiency and distribution effects of a revenue-neutral income tax reform

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Abstract

We study the quantitative effects of two revenue-neutral income tax reform proposals, (i) a flat-rate tax and (ii) a consumption tax, in a general equilibrium model with elastic labor supply and progressive income taxation. Households are heterogeneous with regard to their productivity and their assets. The model is calibrated with regard to the German economy in 1996. Importantly, the endogenous labor income distribution as computed from our model is equal to the empirical labor income distribution in Germany. As our first main result, both reform proposals are shown to have only negligible effects on the labor income distribution. Second, both tax reform proposals result in a moderate increase of aggregate employment and a strong increase of aggregate savings. And third, both reform proposals imply significant steady-state welfare gains equivalent to a rise of total consumption of 3.6% and 8.2%, respectively.
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1. Introduction

This paper studies the efficiency and distribution effects of two tax reform proposals which have been discussed prominently in recent German policy debates: (1) a flat-rate income tax reform and (2) a switch from the income tax to a consumption tax. In Germany, the income tax is progressive even though the recent tax reforms in the years 1986, 1988, 1990, and 1998 have helped to reduce marginal tax rates. [1] The effects of a progressive income tax on efficiency and welfare are not straightforward, however, and critically depend on the labor market structure. In competitive labor markets, which will be the focus of the present paper, progressive income taxation reduces the labor supply of the very productive worker on the one hand and the savings of the wealth-rich on the other hand which will result in smaller aggregate labor supply, capital accumulation, and income. [2] A flat-rate tax, however, increases income inequality and, hence, decreases welfare. The net effect on welfare can only be evaluated numerically. Our second focus is the analysis of a shift from income taxation to consumption taxation. Contrary to the income tax, a consumption tax is neutral with regard to the intertemporal allocation as it does not tax interest income.

We develop an intertemporal general equilibrium model which is calibrated with regard to the characteristics of the German economy. In particular, we closely represent the present German personal income tax schedule in our benchmark calibration. In our model of income inequality and income mobility, agents face uninsurable idiosyncratic productivity shocks and, between periods, individual productivity may change. As a consequence, individual labor income also changes. Our general equilibrium model is able to account for both the observed heterogeneity in wage rates and the observed labor income mobility. In addition, we model the household's labor supply decision. As a consequence, the labor income distribution is endogenous. As one major implication of our modelling framework, we are able replicate the German labor income distribution quite closely.

In our model, labor adjusts only along the intensive margin as agents change their supply of working hours. Recent computable general equilibrium studies with heterogeneous-agent economies have also emphasized the effects of public policy on aggregate employment. E.g., Heer (2003) shows in a model of search unemployment that an increase of unemployment benefits results in a rise of the unemployment rate. We do not analyze the adjustment of labor along the extensive margin in our model, which we consider to be a fruitful area for further research, but rather take the unemployment rate as given. However, contrary to similar studies of the US economy

[1] As a second major impact, the recent tax reforms have also relieved the tax burden on the low-income families.

[2] In the presence of non-Walrasian labor markets, however, a progressive income tax does not necessarily increase employment. Assume that wages result from Nash bargaining, that union's utility depends on both employment and post-tax wage, and that firms have the right to manage. For a constant average income tax, a decrease of the marginal tax rate induces a substitution effect towards higher employment as a unit decrease in post-tax wages results in a higher employment gain. See, e.g., Lockwood and Manning (1993) for both theoretical and empirical evidence.

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