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Income inequality and the tax structure: Evidence from developed and developing countries

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ABSTRACT

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This paper seeks to examine the effect of income inequality on the structure of tax policies. We first use a simplified theoretical framework which allows us to formalize the testable implications of the relevant literature. Subsequently, our analysis indicates that more unequal economies rely heavier on capital relative to labor income taxation. This relationship remains robust across various alternative measures of income inequality and most importantly through alternative political regimes. In addition, our analysis investigates the role of the tax structure on the relationship between income inequality and economic growth. Our empirical findings provide evidence in favor of a political economy channel through which income inequality affects economic growth. *Journal of Comparative Economics* **43** (1) (2015) 138–154. University of Ioannina, P.O. Box 1186, 45110 Ioannina, Greece.

1. Introduction

The interplay between economic and political factors suggests a role for public policies mainly on the side of redistribution through taxation and government spending. Focusing on taxation, the political economy literature (see e.g. Persson and Tabellini, 1994a; Besley and Coates, 1997) suggests that tax structure is portrayed as the voting outcome in elections with office motivated parties who seek the support of the median voter. In all these models, capital income is more concentrated than labor income and the median voter gains from shifting a large share of the tax burden to capital. This result becomes stronger the lower the median income is relative to the mean income (i.e. the higher is the income inequality).

The relationship between income inequality and redistribution has been extensively investigated by a large number of empirical studies (see e.g. Alesina and Rodrik, 1994; Persson and Tabellini, 1994a; Perotti, 1996; Milanovic, 2000; Karabarbounis, 2011).[1] Most of these studies place the spotlight on total government spending or on specific spending accounts (e.g. social transfers as a share of GDP) and examine the effect of income inequality on the size of government spending.

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[1] See Borck (2007) for an excellent review of the literature investigating the impact of income inequality on redistribution.

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However, to the best of our knowledge there is no empirical study examining the impact of income inequality on the structure of taxation and the relative tax burden between labor and capital.[2]

In this paper, we seek to examine the impact of income inequality on the structure of tax policies and whether this effect is affected by the political regime type (i.e. the degree of democracy) within each country.[3] To this end, we develop a simple theoretical model that allows us to formalize the testable implications of the relevant theoretical literature. Then, in the empirical section, we investigate the above mentioned relationship. Concerning the data on tax policies, we employ the high quality data on effective tax rates developed by Djankov et al. (2010) which provide us detailed measures of the tax burden fallen on labor and capital for a world sample of 85 countries. This dataset allows us to employ effective income tax rates for both developed and developing countries and thus gives us the opportunity to examine the impact of inequality on the structure of taxation in countries exhibiting substantial differences in terms of institutional quality and political environment. Concerning the data on income inequality, we employ various alternative economic inequality measures. More precisely, we employ: (i) the Gini coefficient of Texas University Inequality Project (2003), (ii) the Gini coefficient developed by Solt (2009) and (iii) the Deininger and Squire (1996) Gini coefficient obtained from the World Bank.

An important issue raised by numerous scholars (see e.g. Piketty and Saez, 2007; Poterba, 2007) is the potential reverse causation between taxation and economic inequality that may generate an endogeneity problem in the relationship under consideration. According to this rationale, lower degrees of economic inequality may be the contemporaneous result of a more redistributive tax structure (i.e. a tax structure imposing larger tax burdens on capital relative to labor) rather than solely the cause of it.

Our analysis places the spotlight on the potential reverse causality issue and seeks to address it by making use of the most appropriate data and techniques. First, we employ the most accurate data available. Namely, we use the Djankov et al. (2010) tax data which come from experts' surveys on national tax legislation. Since these tax data are experts' calculations of taxes applicable to a standardized enterprise, instead of realized tax rates we can assume that changes in taxation come as a result of changes in income inequality rather than being the cause of it.[4] This is because these tax data are constructed to reflect the relevant tax legislation and therefore are exogenous to the general economic conditions and to any indirect channel that may affect the realized tax policy. Moreover, concerning the economic inequality data, we choose to rely mainly on pre-tax-and transfers Gini coefficients instead of post-tax-and-transfers Gini. This decision mitigates somewhat the reverse causality problem since post-tax-and-transfers Gini vary "mechanically" and "economically" with the fiscal system whereas pre-tax-and transfers Gini coefficients vary solely through the endogenous responses of labor supply or the general equilibrium effect on factor prices (see e.g. Poterba, 2007). Third, we employ measures of inequality of former periods as explanatory of the tax structure in the year 2004. More precisely we employ the average of Gini coefficients over the period 1980–2002 as regressors on the estimations of the tax structure in 2004. Last, a part of our analysis relies on Instrumental Variables (IV) estimation techniques.

In sum, our results provide evidence of a positive and strong association between income inequality and capital taxation. On the other hand, our results suggest a negative and robust association between income inequality and (i) labor taxation, (ii) the ratio of labor to capital relative tax burden. Therefore, we conclude that economies characterized by higher income inequality choose to rely heavier on capital relative to labor taxation. This relationship remains robust through various alternative measures of income inequality and most importantly through alternative political regimes. In other words, our analysis fails to establish a clear cut result concerning the effect of the political regime type on the relationship between income inequality and tax composition.

In turn, our analysis examines the role of tax structure on the relationship between income inequality and economic growth in order to illuminate a political economy channel through which inequality may affect economic growth (see e.g. Perotti, 1996; Barro, 2000). The argument goes as follows: increased income inequality motivates more fiscal redistribution which in turn leads to lower work effort and investment. Therefore, greater inequality (measured before transfers) is expected to induce lower investment and consequently lower economic growth (see e.g. Barro, 2000). Our empirical findings provide evidence in favor of the "political economy channel". Namely, we find that the relationship between income inequality and

[2] Perotti (1996) investigates the effect of middle class income share on marginal tax rate but fails to provide a robust relationship, whereas Karabarbounis (2011) using a sample of OECD countries, provides evidence that a higher ratio of the gross earnings of the rich (resp. poor) to mean gross earnings is associated with lower (resp. higher) personal income taxes. However, both of these studies examine mainly the effect of income inequality on redistribution through government spending and thereby refraining from examining the impact of inequality on the structure of tax policies.

[3] A small but growing number of empirical studies examine the effect of democracy on the size of total tax revenues and the composition of taxation (see e.g. Aidt and Jensen, 2009; Boix, 2001, 2003; Kenny and Winer, 2006; Mulligan et al., 2004; Profeta et al. 2013). The theoretical argument behind the potential impact of democracy on tax policies goes as follows. An extension of the voting franchise increases the number of low-income voters and consequently changes the position of the median voter and the preferences of the electorate concerning redistribution. This implies: (i) an increase in total tax revenues and (ii) a shift of the tax policies away from the preferences of the rich (i.e. an increase – resp. decrease – on direct taxation – resp. indirect taxation). However, the relevant empirical literature delivers contradicting findings. Aidt et al. (2006) and Boix (2001, 2003) provide empirical evidence of a positive relationship between voting franchise and total tax revenues, whereas Aidt and Jensen (2009) and Kenny and Winer, 2006 report a positive and significant effect of democracy on direct - relative to indirect- tax burden. In contrast, Mulligan et al. (2004) and Profeta et al. (2013) fail to establish a robust relationship between democratic institutions (i.e. degree of democracy and civil liberties) and implemented tax policies.

[4] We note that Djankov et al. (2010) dataset of taxes has been constructed – jointly with Pricewatehouse Coopers accountants and tax lawyers – by computing all relevant taxes applicable to the same standardized domestic enterprise called TaxpayerCo, operating in each country. TaxpayerCo is a taxable corporation operating in the most populous city in the country. It is liable for taxes charged at the local, state/provincial and national levels. In many instances, these rates differ sharply from statutory tax rates.