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Endogenous (re-)distributive policies and economic growth: A comparative static analysis ☆

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ABSTRACT

This paper analyzes the interplay of economic growth, (re-)distribution and policies when the latter are set exogenously or when they depend on economically important fundamentals. A redistribution policy generally causes lower growth, but less so when economic efficiency is higher. The model implies that high (endogenous) tax rates may not necessarily imply low growth. The paper shows that the long-run cross-country relationship between growth and endogenous policy is generally not clear-cut. But it is shown that this relies on conditions that can be used for identification in empirical research. The paper also argues that in the long run workers benefit more from higher efficiency than capital owners, even though inequality might and growth would rise.

1. Introduction

It is often shown that policies which are optimal for the accumulated factor of production maximize growth and that high (re-)distributive taxes slow down long-run growth.

However, when analyzing the effects of policy on growth empirically, policy is mostly viewed as exogenously determined and then it turns out that – at least across countries – these theoretical predictions do not appear to command strong empirical support.[1]

In this paper I address this issue by distinguishing between exogenous and endogenous policy. The latter is given when policy is set optimally and, thus, takes account of fundamental economic variables. Endogeneity of policy may help explain why we observe policy–growth relationships that are sometimes at odds with theory. To make this point I build on own research in Rehme (1998, ch.1), Rehme (2000), and Rehme (2002), and complement it here by not only stressing, but focusing comparatively more on theory as one vehicle in uncovering what differences exogenous or endogenous policy may imply for the policy–growth nexus.[2]

For the analysis I concentrate on two policy instruments as metaphors for wider policy packages that may be analyzed in more general frameworks. One instrument is a tax rate that may cause a disincentive to accumulate. The other is an indicator for direct redistribution from the accumulated to the non-accumulated factor of production. A simplified version of the widely known model of Alesina and Rodrik (1994) that incorporates features shared by many other models provides the theoretical "lens" through which existing results are interpreted.

First, the model predicts that in equilibrium an inverted U-shaped relationship between taxes and growth holds, when taxes are set exogenously. Taxes higher than those which are optimal for the capital owners imply lower growth. Furthermore, higher taxes imply higher

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[1] See, for instance, Perotti (1993), Alesina and Rodrik (1994), Bertola (1993), and Persson and Tabellini (1994) on stressing the theory point, and see, for example, some of the same authors as well as Barro (1991), Easterly and Rebelo (1993), Perotti (1994), and Sala-i-Martin (1996) on the empirical point. The working paper version provides additional relevant references that address this issue. Some authors even argue that growth is invariant to (some) policy (measures). See, for example, Stokey and Rebelo (1995). On the whole, though, a lot of historical evidence suggests that growth and development do in fact react to (fundamental) policy changes, including tax and redistribution policies. See, for instance, Landes (1998). In this paper I follow the latter evidence.

[2] See also Rehme (2010) and Rehme (2011) where theory is used to derive the presence of and the *sign* of biases in the coefficients on some conventionally used policy variables in growth regressions. Complementarily to those papers, here the focus is on theory of the more general problem of endogenous policy for any analysis of the policy–growth link.

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redistribution from capital to labor. These results are in line with many other theoretical contributions.

Second, we introduce optimizing governments. By assumption governments are either only concerned about the workers or only about the capital owners. This simplifying assumption captures that political preferences are *structurally fixed* one way or the other for a long period of time. More precisely, we assume that long-run political regime characteristics such as the size of the welfare state, the degree of corporatism, fundamental labor laws, and the unions' role in wage bargaining do not change for long periods of time, but may be different across countries. Thus, I follow the common procedure of political scientists to classify (long-run) political preferences along these lines.[3]

The optimal policy of an entirely pro-capital government is tantamount to a growth maximizing policy in the model. In contrast, an entirely pro-labor government chooses higher taxes and, thus, lowers growth.

In the model all optimal policies depend on three fundamental economic variables: the rate of time preference, an index of the state of technology and the (pre-tax) share of capital (income in total income). Thus, policy is economically endogenous.

Acknowledging that all these factors play a potential role, we concentrate on the state of technology (aggregate efficiency) as the prime mover of policy differences across countries and fix the other determinants for the analysis. This is rationalized by the importance that aggregate efficiency is usually accorded to in explanations of long-run changes to the economic structure of a country. See, for example, Prescott (1998).

Analyzing the consequences of differences in aggregate efficiency the following results then emerge for cross-country studies. When fixing policy at some arbitrary (including some optimal) level, higher efficiency implies higher growth, but lower redistribution. The first result corresponds to conventional wisdom. A better technology allows a better use of resources in the accumulation process and that is reflected in a higher growth rate. The second result is not so straightforward. In the analysis redistribution is measured by the differences in Gini coefficients for pre-tax and post-tax incomes. The pre-tax income distribution is independent of aggregate efficiency in the model. Thus, the after-tax capital income rises relatively more, when policy is fixed and efficiency rises. Hence, efficiency gains accrue relatively more to the capital owners' post-tax income and so redistribution from labor to capital is lower in this case.

These results would imply a tradeoff. For given policy, higher efficiency entails lower redistribution, but higher growth. For given efficiency, taxes higher than those which are optimal for growth imply lower growth, but more redistribution. This suggests that governments could tax the beneficial effects of higher efficiency away and redistribute more. However, this only holds if policy is set exogenously.

In the third stage of the analysis, it is acknowledged that policy is economically endogenous. Thus, differences in efficiency would imply a direct and an indirect effect on observed growth and redistribution across countries.

The model then implies that for given political preferences the observed association between growth and taxes would be positive across countries.[4] Thus, one should observe across countries that even optimizing, entirely pro-labor governments respect the beneficial effects of higher efficiency by not increasing taxes too much. The intuition for this is that in the long-run the workers benefit more from the intertemporal gain induced by a higher growth rate with relatively lower taxes than by higher redistribution with relatively higher taxes.

The same is true for redistribution. That implies that a negative cross-country relationship between redistribution and growth should be observed. This holds if one views countries with higher aggregate efficiency as more developed countries with optimizing governments.

The predictions are less clear-cut, when the analysis is applied to a cross-section of countries and differences in structural political preferences are considered. In fact, the observed tax–growth as well as the redistribution–growth relationships should generally be ambiguous across countries when the distribution of aggregate efficiency takes on more general forms. It would still be true that the observed tax–growth relationship is positive, but only if all countries in a sample would have the same political preferences. That, of course, is quite unlikely. Thus, no clear prediction on this relationship for a cross-section is in general possible.[5]

From the latter result negative implications for cross-country research would seem to be inevitable. For instance, Rodrik (2005, 2012) has argued that we learn "nothing from regressing economic growth on policies". However, the present paper allows for a more constructive message. We may simply argue that there is a need to disentangle more precisely the relationship between policy and growth, by taking account of the influence of deep variables like aggregate efficiency, which (possibly) bear on both policy and growth. Theory may provide an important guiding tool in this respect.

In a last step the welfare implication of efficiency differences is analyzed. Again policy is taken to be endogenous. Interestingly, I find that in the long run the individual worker as well as a pro-labor government would never benefit less from living in a more efficient economy than a capital owner or a pro-capital government. To have a more efficient economy is in the interest of all agents in the model, but – interestingly – the workers would prefer it relatively more.

The paper is organized as follows: Sections 2 and 3 set up the model and derive the equilibrium. Sections 4 to 6 present an analysis of exogenous policy, introduce optimizing governments and relate policy to economic fundamentals. Section 7 relates growth to endogenous policy. Section 8 presents the welfare analysis. Section 9 provides concluding remarks.

2. The model

The economy is populated by two types of many, price-taking and infinitely lived individuals of whom there are $\mathcal{N}$ and who are all equally patient. One group of agents, the capitalists, owns wealth equally and does not work. The other group is made up of workers who own (raw) labor equally, but no capital.[6] Population is stationary and consists of l workers and n capitalists of whom there are less, that is, $l > n$.

Each individual derives logarithmic utility from the consumption of a homogeneous, malleable good. This assumption allows to make interpersonal welfare comparisons, and is invoked for two reasons.

[3] For evidence on such classifications and their stability over time see, for example, Castles and Mair (1984), Garrett (1998) and Hall and Soskice (eds.) (2001). The qualitative results would not change if instead governments attached different social weights on the workers' or capital owners' welfare and one varied these weights. This assumes the possibility of parties with different preferences in a country, but that structural characteristics do not really change and constrain policy choices. In that sense the paper is complementary to the growing literature on dynamic political economy as e.g. in Hassler et al. (2003), Acemoglu (2006), Battaglini and Coate (2007), or Acemoglu et al. (2008).

[4] For example, Dalgaard et al. (2003) find for OECD countries that the relationship between taxes and growth is negative within countries and positive across countries.

[5] Furthermore, we might observe that countries pursuing pro-labor policies may have higher growth than those under pro-capital policies. But for this to be the case, the former countries need to be sufficiently efficient to support such a regime. When one finds that redistribution and growth are positively associated, then the model attributes this to sufficient efficiency advantages of pro-labor vis-a-vis pro-capital countries.

[6] The assumption uses a short-cut of a result in Bertola (1993). He has shown in an endogenous growth model that for utility maximizing, infinitely lived agents who do not own initial capital, it is not optimal to save/invest out of wage income along a *long-run*, i.e. steady state, balanced growth path. Similarly, it is not optimal to work for those who only own capital initially. Thus, the set-up is reminiscent of Kaldor (1956), where different proportions of profits and wages are saved. However, in Kaldorian models growth determines factor share incomes, whereas in endogenous growth models the direction is rather from factor shares to growth.