

COMMENTS ON SESSION III: FISCAL POLICY AND GROWTH

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First of all I would like to thank you for the invitation to this workshop. I very much appreciate the opportunity to debate on significant fiscal policy issues in this setting and the chance to gain new insights. I am impressed by the interesting approaches the individual papers have come up with, and by the “food for thought” they have provided.

By way of introduction, I would like to share with you a few words on the guiding issue behind this Session. Then I would like to offer a short response to growth theory that will be highly subjective and also highly selective. I plan to wind up my contribution with a short view on the empirical evidence.

What is the debate about?

Basically, it is about the implications that fiscal policy may have for long-term growth. It is a fact that growth produces prosperity, but it may be worth discussing whether fiscal policies do indeed play a key role in determining the long-run growth rate of economies. If they do, is the impact of fiscal policy instruments growth-enhancing, or does it rather have growth-retarding effects in the bottom line? How does the share of government expenditure in output, or the composition of government expenditure and revenue, affect the long-run growth rate? Let me refer to economic theory first.

What does growth theory tell us?

In *neoclassical models* in the tradition of Solow (1956) and Swan (1956), the answer to the question whether fiscal policy affects long-run growth is clearly “no”. Public-policy neoclassical growth models, for example Chamley (1986), consign the role of fiscal policy to that of

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determining the level of output rather than the long-run growth rate. The only explanation of growth that neoclassical theory accepts is exogenous technological progress and population growth. Any change in other parameters of the models is found to induce only transitory movements to a new steady state, without having any effect on long-run growth. Fiscal policy can affect only the transition path to the steady-state growth rate.

Although fiscal policies, like tax and expenditure measures, influence the saving rate or the incentive to invest in physical and/or human capital – and therefore the equilibrium factor ratios –, they cannot permanently sustain higher output growth. What they can sustain is a higher level of output and therefore of the standard of living. Sustainable growth requires a continued infusion of technical progress – in terms of improved capital productivity or labor skills. Such progress, by definition, arises outside the models.

Endogenous growth theory tells us that a country's growth performance in the long run is endogenously determined by a set of variables that are responsive to and affected by fiscal policy. Increasing returns-to-scale on the production side, knowledge spillovers, learning-by-doing externalities or monopolistic power in markets for costly developed new goods are the factors determining endogenously driven growth. Investment in new capital, the implementation of new production techniques and the introduction of new products are the fundamentals of the growth process according to the new growth theory. Investment in physical as well as human capital can affect the steady-state growth rate in these models. Consequently, there is scope for at least some elements of tax systems and government expenditures to play a role in the growth process.

Some of the clearest and most direct conceptual links between fiscal policy and growth are to be associated with tax policy. Through its effects on the return on investment or the expected profitability of research and development, taxation affects what choices are made and, ultimately, the rate of growth – either temporarily, in neoclassical-type growth models, or permanently, in endogenous growth models. With distortionary taxes, private economic agents' allocative decisions will be different from those that would be made in the absence of such taxes. Paul van den Noord and Christopher Heady give an extensive overview of economic distortions resulting from labor and capital income taxation and indirect taxes, like VAT and excise taxes. Clearly not all distortions mentioned are of similar importance for growth considerations. However, of particular relevance in

this respect at present are perhaps the implications of open and integrating economies accompanied by the increasing mobility of production factors, since distortions may be exaggerated.

However, some tax distortions may be the result of growth-enhancing measures. They are then a consequence of economically useful measures aimed at correcting market failures, for example tax incentives that are meant to promote investment, research and development activities. By their very nature, these tax incentives create distortions; distortions that may well be outweighed by the benefits that can be reaped from their use. Without corrective public measures, such activities would be below their optimal levels.

Unambiguous effects result from income taxes – mostly they have a negative impact on the long-run growth rate because they reduce incentives to save, to accumulate human capital or to innovate. However, in an endogenous growth context, the growth effects of income taxation on (physical) capital are sensitive to the specification of the respective production technology; the ultimate impact of a capital income tax on growth depends on how the tax affects other factors, such as human capital, that cooperate with physical capital in the production process.

Since not all tax distortions are of the same relevance from a growth perspective, the structure of taxation has important implications for growth. A shift from an income tax to a consumption tax, which reduces the disincentive to save, is likely to boost capital accumulation. Of course, a consumption tax distorts labour/leisure choices, but these distortions can be considered as neutral with respect to the relative price of consumption today and tomorrow.

However, in discussing distortionary effects or efficiency aspects of taxation, we must not forget that taxes are multi-targeted instruments, with efficiency being just one argument. Tax policy is not only focused on raising the required revenue with the minimum amount of distortion to economic activity and at minimum cost of collection. Tax policy is about fairness, too. Fairness/equity may entail costs in terms of efficiency and growth, but it would be inappropriate to design tax systems or assess tax systems with only growth objectives in mind. Moreover, some new strands of research in growth theory shed a different light on the trade-off between redistribution and long-run growth. It is argued that redistributive taxation and social transfers can be growth-enhancing.

That the *financing* as well as the *spending side* are of importance for long-term growth was shown by Barro (1990). He provided a theoretical analysis by which fiscal policy can determine – in contrast to public-policy neoclassical papers – both the level of output and the steady-state growth rate. In this model, a higher tax rate ($\tau=G/Y$; G/Y is the government's expenditure ratio) reduces growth by reducing the after-tax rate of return. At the same time, however, it increases growth by increasing the future level of public services (or productive expenditures), which in turn raises the private marginal product of capital.

Following Barro, the relation between the size of the government ($G/Y=\tau$) and the per capita growth rate is non-monotonous or hump-shaped: at low values of τ , the growth rate of income-per-capita increases with the tax rate, since the positive effect of higher public spending on private capital's marginal product dominates. As the tax rate rises, the adverse impact of distorting taxation becomes more important, and the per capita growth rate eventually reaches a peak. For still higher values of τ , the taxation effect dominates, and the per capita growth rate declines with the tax rate.

Extensions of the Barro model show that both long-run growth and the utility of the representative consumer will be reduced if government expenditures are not restricted to the provision of productive inputs but are also used to finance transfers that directly enter the representative consumers' utility function or budget constraint. These additional government activities do not have a positive effect on the production sector but, must be financed by distortionary taxes which reduce the after-tax rate of return on capital and discourage saving, the reduced investment activity results in lower growth.

Several articles have been published since that pioneering paper, extending the analysis of taxation, public expenditure and growth, like Jones *et al.* (1993), and Mendoza *et al.* (1997).

To sum it up, from the theoretical perspective it is reasonably clear that fiscal policy can impact long-run growth, even though the predicted growth effects of taxation and government spending depend critically upon model specification. Furthermore, they are heavily dependent on the engine of growth, the process of human capital accumulation, tax regimes and the way the tax revenue is spent.

Is empirical evidence consistent with the predictions of growth theory?

Empirical evidence is not unambiguous. This is also one of the conclusions of Ana Lamo and Rolf Strauch, who review the main findings of the empirical literature in the context of fiscal policy's contribution to the European Growth Strategy. They are discussing a whole range of potentially productive, growth-enhancing government expenditures which, of course, have to be financed by distortionary taxes. They conclude that public infrastructure investment, education and R&D investment have positive effects on growth, albeit the magnitude of the impact of the various public expenditures is questionable. They also draw the conclusion that the composition within specific expenditure categories is of importance and that the relationship between growth and fiscal variables may be non-monotonic. While the effect is likely to be positive if public spending remains moderate, it could be expected to decrease and may even become negative if expenditure exceeds certain levels.

Kristal Buysse's contribution focused on long-run growth effects of educational expenditures. Empirical evidence with respect to this expenditure category is also inconclusive. Following her result there are some indications that spending on education may help explain differences in productivity growth.

However, estimations of growth equations have to cope with a number of specific methodological problems. Paul Hiebert and his colleagues give an extensive enumeration and explanation of methodological insufficiencies and problems in their paper. They highlight the most important methodological caveats in the empirics of growth. In their contribution they estimate the long-run effects of fiscal policy on growth for EU countries. They establish a robust negative relationship between government size and trend growth.

The paper focuses only on the effects of the overall revenue ratio and the overall expenditure ratio as a proxy for government size. They do not single out productive expenditures that increase the profitability of private investments through externalities or expenditures that have positive impact on human capital. However, taking into account that the growth effects of government consumption are different from those of productive expenditures it follows that for empirical investigations it may be of overall importance to distinguish between these two categories – although this distinction may in itself be problematic.

Relating their results to Barro (1990), it can be concluded that European governments might act on the right hand part of Barro's hump-shape curve. Any reduction of distortionary taxation would boost long-run growth, or in other words, long-run growth – or at least the steady-state level of income – could be increased by reducing government size.

However, economic growth is just one economic policy target, and it may be taken as a fact that it will conflict with other targets. Therefore, the result – to the extent that it is based on one target only – must be taken with a grain of salt, or must be interpreted with caution, taking into account the multi-dimensional targets of economic policy.

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