Endogenous growth and distributional conflicts

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1. Introduction

After a decade of agony there has been a strong revival of growth theory. Recent research in "new" growth theory is based on several aims. Firstly, growth should be explained as the result of the interaction of the intertemporal decisions of the individuals coordinated by markets and governmental interventions. Secondly, theories have to explain the multitude and diversity of the actual growth processes of countries across the world. Hence, the research programme of new growth theory does not accept models that assume the main driving forces for the economy to be given exogenously as was the case in most of the contributions to the old growth theory of the sixties. Growth, therefore, needs to be explained endogenously within the model.

Recent achievements in growth accounting and careful empirical research are proof of the strong commitment to relevant and testable theorising. According to new growth theorists, one of the main predictions of the old "Neoclassical" growth theories, as developed by Solow and others, was the convergence of growth rates and income per capita towards world wide uniform values. This should be the case, since in relatively poor countries the low capital intensities in production are accompanied by high interest rates according to marginal productivity theory. Hence, capital and technological knowledge are expected to flow from rich countries (with low interest rates) to poor countries. The growth rates of the poor, therefore, are expected to be higher than

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those of the relatively rich countries, unless all countries grow with almost the same rate. Empirical evidence, however, does not support the convergence-hypothesis.\textsuperscript{2} Thus, apart from labour and capital, there must be additional factors at work accounting for the variety of growth rates observed internationally. New endogenous growth theory aims to detect all the factors responsible for the diversity of actual developments and hence, searches for a general theory of economic development.\textsuperscript{3}

Despite the progress of recent research on economic development by endogenous growth theory, the mainstream of recommendations on economic policy for underdeveloped countries largely ignore its findings. Typically, these recommendations read like a four course menu: i) monetary and fiscal policy should ensure that inflation remains moderate; ii) trade and capital movements should be liberalised; iii) the prices need to be »right«; iv) the economy should have a good human capital endowment. The basic attitude seems to be that if only politicians could really understand this message, they would implement it and every economy could be developed. These recommendations, however, seem to miss, among other relevant aspects, the distribution of income as a central issue. This is crucial for at least two reasons. First, developing countries are generally societies with skewed income distribution patterns which is in turn the basis for open or covert distributional conflicts. Second, the funding needs for the provision of economic and social infrastructure are enormous in proportion to GDP. Given the enormous current indebtedness of many less-developed countries and their low surplus, financing of public goods appears to be extremely difficult.

In the early fifties there was a small and quite diverse group of heterodox economists who pointed out that the implementation of development policies may be subject to distributional conflicts. Baran (1952) argued that growth could be brought about by public investment, but the necessity to pay for public investment raises the issue of who should and could be taxed for it. Poor people living close to existence minimum have an income which is too low and the rich are

\textsuperscript{2} There now exists a large empirical literature but no agreement on this topic. There are also several conceptualisations for convergence. See e.g. Bernard and Durlauf (1995) or Romer (1994) who found no evidence supporting the convergence hypothesis, whereas Barro and Sala-i-Martin (1991) or Mankiw, Romer and Weil (1992) did.

\textsuperscript{3} See e.g. Lucas (1988). The title of his paper is »On the Mechanics of Development«. Also see Schelkle in this volume.
not keen on the redistribution involved if they pay for public factors that are mainly used by the poor. H.G. Johnson has pointed out that the reduction of fiscal deficits is not an easy task because of the political conflict involved in the decision to tax.\textsuperscript{4} T.W. Schultz (1964) argued that the provision of public factors, such as basic education and basic scientific research, is necessary for human capital formation. Although this would drive technical progress, it is, however, blockaded in the political process.\textsuperscript{5} Hence, incorporating distributional considerations into the policy menu is more than just the dessert; it ought to be the meat in the main course. This non-mainstream tradition pointing to distributional conflicts as an obstacle to growth has recently been revitalised in the endogenous growth literature.

The purpose of this paper is to give a brief overview of these contributions. It focusses on recent endogenous growth literature, on the conflict between publicly financed investment in human capital as a major impulse for growth and the impediments to growth caused by the inequality of incomes. To model this conflict, at least some heterogeneity among individuals as well as the institutional channels through which it substantiates into actual policies have to be specified. Integration of these specifications, however, soon makes models formally intractable. Most of the papers on the subject, henceforth, specify only one of those aspects to keep the models manageable. Whether public investment and heterogeneous individuals are considered explicitly or not is taken as the criterion to classify the literature on this subject.

The paper is organised as follows. In the next section a general overview of relevant contributions is given in the form of a table that is followed by a short review of papers which capture the distributional conflict merely implicitly. These contributions provide important insights into the basic economic mechanisms at work. Section 3 covers articles that explicitly model at least certain aspects of this conflict. The importance of the results for political purposes will be evaluated in section 4. The paper closes with some more general considerations on the usefulness of the findings of endogenous growth theory for developing countries.

\textsuperscript{4} Cf. Harberger and Wall (1984; p. 624)
\textsuperscript{5} Schultz's contribution is summarised in Ziesemer (1987; Ch.9.2)
2. Implicit considerations of distributional conflicts

In evaluating empirical evidence, the World Bank (1990, 1991), Larre and Torres (1991), Stern (1991), Reynolds (1983), Hughes (1982) and Adelman (1980) put a strong emphasis on education, health and infrastructure as a justification for the potency of government intervention in promoting growth and development policy because of their public goods properties. An early non-formal theoretical justification for government interference was given by T.W. Schultz (1964). He argued that technical progress depends on human capital and the production of human capital requires public factors such as basic education and basic scientific research; however, because the provision of public factors is opposed in the political sphere the actual levels of human capital and technical progress are very low. In the literature on development economics this opposition to the provision of public factors is often discussed under the topic of tax resistance.\(^6\) Many models discussed below resemble the theory of T.W. Schultz, because Schultz was the first to emphasize the long-run effects of public investment for growth and development, whereas Baran (1952) put more emphasis on the short and medium term. In the contributions to the recent literature on endogenous growth, some papers pick up this line. This is very interesting in the sense that it opens the opportunity to understand different income levels and growth rates as the result of different outcomes of a conflict on distribution or public investment. The literature to be discussed can best be distinguished with respect to two properties. Firstly, individuals in the various models are either identical or heterogeneous; if they are heterogeneous they either differ with respect to initial endowments or with respect to parametrically given abilities or both. The rows in Table 1 indicate these differences. Secondly, models contain either public investment or they don't. The columns in Table 1 indicate these differences.

In the first group of papers the importance of human capital on growth is modelled explicitly. But in the contributions of Romer (1986) and (1990), Lucas (1988) and Ziesemer (1991 and 1987, chap. 14), individuals are identical and there are no public investments. Lump-sum taxes are merely raised to correct for the inefficiencies due to private externalities; in Lucas (1988) where subsidies are also correcting for externalities, however, this is done only implicitly. The basic reason for

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\(^6\) See, e.g., Mutén (1985)
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This kind of intervention is simple enough. Private investments create positive external effects. Since individuals ignore those externalities in their private decision-making, investments turn out to be lower than socially desirable. Hence, distorting interventions (taxation or subsidisation, which can be seen as negative taxation) that increase the relative price of consumption goods to investment costs can improve the intertemporal efficiency of the economy. Whereas these models show the positive effects of interventions, interventions could have negative effects as well. In Mino (1989), Lucas (1990), Rebelo (1991) and Trostel (1993) individuals are still identical and there is no public investment. The distortionary taxes are raised to finance some government consumption (or transfers, as in Trostel’s paper), however, neither enters the utility nor the production functions. Distortionary taxation, therefore, leads to a slowdown of growth in these models. In Justman (1992)
an indivisible infrastructure is supplied by a regulated monopolistic private firm. The effects of governmental interventions on growth in these models are crucially dependent on how the government provides its services and on what factors are taxed. In Lucas (1988) and (1990) human capital is produced in leisure time only, therefore wage taxation in effect works in a similar manner as a tax on consumption, whereas taxes on physical capital have almost no influence on the accumulation of human capital. Hence, tax policy has little influence on the growth rate in his model. In Pecorino (1993) the production of human capital needs both physical and human capital. It is shown that to maximize growth, the factor which is used most intensively in the consumption goods sector should be taxed more highly. In a model to determine the quantitative impact of some tax reform proposals to eliminate distorting taxes Stokey and Rebelo (1995) reaffirmed the findings of Lucas (1990). They also showed that the rate of depreciation, the factor shares, the elasticities of labour supply and intertemporal substitution are decisive for the influence of the tax reform on growth, whereas the elasticity of substitution among the factors of production has negligible influence on it.

All the models in this group have in common that the government influences investment in human capital not directly but only indirectly by the design of taxation. Although distributional conflicts are not captured explicitly, the models, nevertheless, provide insights into the importance of human capital formation for growth and the sensitivity of specific tax policies chosen to stimulate it.

The second set of papers involves public investment with identical individuals. In Shell (1967) they are users of a public, non-rivalrous stock of technology. A flat-rate income tax is raised to finance the change in the stock of knowledge. It generally has two offsetting effects. The expenditure effect of the tax increases growth, but the distortion through capital income taxation decreases it, since it decreases the returns from investment after taxes and hence, negatively influences private capital formation.7 In Barro's (1990) model identical firms all have access to use the full amount of the publicly provided services apart from capital as an input. The public services outweigh the diminishing returns in private capital accumulation and are, therefore, positive for growth. The amount of public services depends on the tax

7 Cf. also Grossman and Helpman (1991, Chap. 2.4) for a simple version of Shell’s model; an optimal growth version of this model is given in Hartwick 1992, who sets the elasticity of production for capital in the technology production function equal to zero.
Endogenous growth and distributional conflicts

revenue resulting from a flat-rate income tax. Too high a tax rate has a negative impact on savings and investments which overcompensates the positive effects of the public factor; hence, the model exhibits the same properties as in Shell's paper. Sorensen (1993) extends Lucas' (1988) model to include public investments which are financed by capital and labour income taxation as well as tuition fees.

3. Considering the distributional conflict explicitly

In searching for appropriate redistribution policies to enhance growth, at least a crude conception is needed of how a political will is actually shaped into a certain policy. There is a «trick» often applied in growth theory with homogeneous individuals. When in presence of external effects the market solution turns out to be intertemporally inefficient, a benevolent dictator is introduced who chooses the tax rate that internalises the externality and maximises at the same time the welfare of the representative individual and of the society as a whole. With heterogeneous individuals, however, social welfare is hard to define in general terms as demonstrated by various impossibility theorems in social choice literature. In the new political growth literature a simple democratic process is assumed to settle the diverse interests and materialises in certain political decisions. To capture the political process through which the distribution of income influences growth, in many models the median voter theorem is used, i.e. a simple majority rule is assumed to decide on public affairs. If there is just one issue at stake, e.g. the tax rate, and the voters' decisions are such that the vote for a higher tax rate is inversely and monotonically related to a lower income, it is sufficient to know the decision of the median voter to determine the decision of the majority. Since all voters with a smaller income vote for a higher tax rate, and vice versa, the majority would support, in a compromise, the tax rate preferred by the median voter who is, therefore, ultimately decisive for the society's tax rate.

In Creedy and Francois (1990) households differ in initial incomes which also determine an individual's productivity in forming human capital. Education is paid for partly privately and in part by the government who finances the subsidies for education through a flat-rate income tax. The larger the portion paid by the government, the greater the number of people who get an education and the higher the growth rate which benefits all in the second period. Even the median voter who
receives no education and therefore no subsidy may vote for redistributive taxes because he benefits from the growth effect generated by other peoples' investment in human capital. The tax revenues are also used for other government expenditures which enter neither the utility nor the production functions. No public factors are considered and the model is constructed only for two periods. Perotti (1993) considers three groups of individuals who differ in their initial pre-tax incomes, a poor, an intermediate group and the group of rich people. It is assumed that people live for two periods. There are again no public investments. Private education to improve human capital exhibits an external effect on the human capital of others. To enable the members of the poor and eventually also of the intermediate group who have insufficient means to pay a fixed fee for education, subsidies are needed, because these people have no access to the capital market to finance their investment in human capital via loans. The subsidies which are divided equally among individuals are supposed to be paid out of income tax revenues. A median voter chooses her individually optimal tax rate which depends both on her income and on the average income of the population because the latter determines the value of the subsidies received in the same period. Depending on the income of the median voter and its relation to the average income in the economy this redistribution may be conducive or damaging to growth.

Another set of papers considers public investment and individuals who are different either with respect to their endowments of human or financial capital. The issue then is which level of taxation and investment they desire. Alesina and Rodrik (1992) modify the model of Barro (1990) in which public services are a productive input in private production. Households differ in their initial holdings of an accumulated factor ("capital") relative to their constant endowment of non-accumulated factor ("labor"). Redistribution policy requires taxation of capital to finance public services. The higher the tax rate, the lower the economy's growth because of its negative influence on the after tax returns from capital and hence, on investment. The less capital an individual is endowed with, the higher her individually preferred tax rate for capital. A poorer median voter therefore generates lower growth and one may conclude from this that, in a democracy, income inequality impacts unfavourably on growth rates. In Glomm and Ravikumar (1992) individuals differ in their initial values of human capital. In the public education regime of their model, revenues from a flat-rate tax on human capital income are spent to improve the quality of public education which is an argument in the individual utility
functions and hence, improves human capital of the next period. As the utility functions are of the additively separable type, all individuals prefer the same tax rate. Income inequality declines more quickly under public than under private education. It is shown that private education leads to higher per capita income unless the initial inequality is already high. In Saint-Paul and Verdier (1993) households also differ with respect to their initial endowments of human capital. Households have to pay, however, a flat-rate income tax, the revenues of which are spent on public education which is not a public good but is supplied on an egalitarian basis to them. Since schooling is a private factor in this model, benefiting all individuals identically because it enters the production function for human capital in an additively separable way, poorer people will prefer higher tax rates.

Higher inequality causes higher growth if redistribution improves public education.

In Persson and Tabellini (1991) individuals differ in their parametrically given abilities and, therefore, also in their incomes. There is no public investment considered in the model. A flat-rate income tax is raised, the revenue of which is distributed equally among all households. A higher rate of taxation yields lower growth because of the distortion of capital accumulation. The higher the abilities of the median voter, the lower the tax he prefers and the higher the growth rate will be. Ziesemer (1990) and (1987) takes into account public investment and that people are different in both abilities and endowments.

Having more capital provides a disincentive to higher taxation, but higher abilities make public factors more desirable. A median voter wants higher taxes than the average individual. The growth effects of a higher tax rate are merely transitional. In the long-run only the level of the growth path can be changed because, as in Arrow’s (1962) learning-by-doing model, the rate of growth is proportional to that of population growth. This is in accordance with Koester and Kormendi (1989) who find in a cross-country study, that tax rates have only level effects but no growth rate effects. One expects an improvement of the theoretical basis for empirical investigations through endogenisation of

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8 Clearly, when human capital endowment levels converge, individually preferred tax rates converge as well.


10 However, that study is only loosely related to growth theory and in view of the arguments presented in the theory and the empirical findings of the political-equilibrium literature (see Persson and Tabellini 1992, and Alesina and Rodrik, 1992) and because of their time-series character, the question is whether or not this is the final word on the subject.
the growth rate. For that purpose there is also an important paper by Otani and Villanueva (1990). They show for a cross section of countries that the share of public expenditure on education of the GDP has the same impact on growth rates as the savings ratios do. This result, together with that of Koester and Kormendi mentioned before, suggests a positive impact of government interventions on growth rates coming from the expenditure side, whereas there is little impact from the tax distortions on the revenue side of the budget.

Given the state of the art discussed so far, it is quite straightforward to look at the growth rate effects of changes in tax rates when individuals appreciate different levels of public factors differently, depending on their abilities. Ziesemer (1995) provides a model on this issue that bears a close resemblance with Schultz's informal theory. The argument of his paper is as follows. If government revenues from a flat-rate income tax are spent on public factors and public factors are used in the formation of human capital and human capital, in turn, is necessary for the production of technical progress, then a higher rate of taxation will lead to a higher rate of technical progress if steady states are stable. Given this chain of causality for the economy one has to consider the decision on the rate of taxation. If human capital producing households have different abilities, they will also have different individually desired (Lindahl) tax rates. As it is to be expected from the political growth literature presented above, a dictator who fixes the tax rate at a level to maximise the growth rate will not satisfy the welfare of the majority. Therefore, tax policy determines the rate of technical progress without reference to a generally accepted welfare function. People with lower abilities prefer lower tax rates, at least in the short-run. In the long-run things are much more complicated. To deduce definite results one has to know a) the time preference and its relation to the rate of growth and b) the elasticity of marginal utility of the individual who is decisive for the economy's tax rate decision.11 When their rate of time preference is larger than the rate of technical progress people with greater abilities prefer higher levels of public factors and hence, also higher tax rates.

11 The elasticity of marginal utility is a local measure of the curvature of the utility function. If, for example, the utility function is linear in its argument the marginal utility is constant and the elasticity of marginal utility is zero in this case. The elasticity of marginal utility is higher, the «more curved» the utility function is. The concept of the elasticity of marginal utility is closely related to the intertemporal elasticity of consumption, which roughly measures how easily consumption today can be substituted by consumption tomorrow without a change in utility. The intertemporal elasticity of consumption is just the inverse of the elasticity of marginal utility and is large if the utility function is nearly linear.
even in the long-run, if their indirect marginal utility is inelastic with respect to net income. The outcome of this political decision will determine the rate of technical progress. To our knowledge this is the first model of growth with endogenous technical progress that also incorporates the standard justification for the existence of government activity, namely the usefulness of public goods or services for individual utility or production. This changes the ultimate source of the distributional conflict from one who bears the burden of taxation towards one who benefits from the services provided by the government.

4. Remarks on the empirical relevance of the models

In the literature discussed above distributional conflicts arise mainly from the taxation of people with different endowments.\(^{12}\) The contributions show a considerable diversity in approaches to modeling the distributional conflict and hence, also often lead to different results. In Creedy and Francois (1990) only those people who are receiving education are partaking in the subsidy and there is no public factor, whereas in Alesina and Rodrik (1992) public services are required for private production. In both models individuals have different tax burdens. Similarly in Ziesemer (1995) individuals have different desired tax burdens and benefit unequally from public investment in the public factors. In the models of Shlifer (1967), Barro (1990), and Saint-Paul and Verdier (1993) a distortionary effect from taxation is also at work which biases individual decisions against the formation of (human) capital. Whether or not the negative distortion effect outweighs the positive expenditure effect presented above is therefore an empirical question.

The evidence of this distortion is weak until now. Easterly and Rebelo (1993) find a negative but insignificant impact on growth rates in a cross-section study. Koester and Kormendi (1989) found a negative and significant effect on the level of the path of the development, but not on the growth rate. According to the findings of Otani and Villanueva (1990) there is a positive effect on growth rates from the

\(^{12}\) One exception is Glomm and Ravikumar (1992) where the desired tax rates are identical and the distributional conflict lies in the choice between the public or the private education system.
share of public expenditure on human capital per unit of GDP which is as strong as the impact of an increase in the savings-ratio.\footnote{Given the simplicity of the model in Ziesemer (1995) it is rather straightforward to interpret the tax rate as that share because there is no distortionary effect from taxation.}

What remains then is the expenditure effect. In other words, the estimates of Koester and Kormendi (1989) suggest an absence of effects of taxation on growth rates, whereas the study of Otani and Villanueva (1990) suggests that the mode of spending matters. The result that a higher share of output should be shifted to public educational purposes to achieve higher growth bears great similarity with the World Bank’s (1990, 1991) suggestion to further education. The World Bank suggests taking the resources from the military budget which may be considered as part of public consumption for investment in public education. This policy is of the »redistribution with growth« type because the increase in the tax rate is a permanent one.\footnote{Cf. Chenery et al., (1974) for that policy.} In determining desired tax rates for the steady state not only the marginal product of public factors for human capital formation matter, but also the elasticity of marginal utility from consumption.\footnote{See also footnote 10 for an explanation.} People with higher abilities have a desire for higher tax rates and for higher levels of public factors and hence, also for higher technical progress only if their marginal utility exhibits a low elasticity with respect to net income, which means that marginal utility does not decrease strongly as consumption grows.\footnote{This is true only if in addition their rate of time preference is higher than the steady state growth rate.} In this case preferences can be viewed as very materialistic. The reason is that the willingness to pay, as expressed by the marginal product of public capital in human capital formation, is an indicator for the current benefits derived from an existing stock of public capital. The tax rate, analogous to the savings rate in the standard optimal growth model, determines how much will be invested in the stock of public capital. When there is no capital market in the model, this kind of forced saving is the only source which feeds public investment directly and private investment in technical progress indirectly. It has, however, a negative impact on the revenues from forming human capital. The parameters that determine the households’ preference for high or low steady state tax rates are the same as those responsible for private savings. A low (high) elasticity of marginal utility with respect to consumption indicates a preference for high (low) savings or taxes. In most of the
models the elasticity of marginal utility with respect to consumption is zero because a linear utility of income or consumption is assumed from the outset.\textsuperscript{17} If the elasticity equals unity, all households want the same steady-state tax rate.\textsuperscript{18} What is urgently needed to predict the outcome of the models are, therefore, empirical indications for the value of the elasticity of marginal utility, which are hard to get, at least directly.

But things are even more complicated. In Alesina and Rodrik (1992) a unit elasticity for the utility function holds, but tax revenues do not go completely back into current utility. They are used for public investment which increases output which in turn is only partly consumed. Therefore, the more capital poor the voter is, the less she is damaged by a distortion and the higher the tax rate is that she desires. Saint-Paul and Verdier (1993) also use a log-linear utility function but its argument, «childrens’ income» consists of two additively separable parts one of which is government expenditure for education. The result here is also that poorer people prefer higher tax rates. However, inequality and public support for education vanish in their model. This is not the case in Ziesemer (1995) because individuals differ there with respect to abilities and not with respect to initial endowments. In Persson and Tabellini (1991) preferences are homothetic with the implication that indirect utility is linear in households abilities. The lesson learned from those results is that desired tax rates depend on the abilities of voters and that their impact cannot always be outweighed by properties of preferences: less able (poorer) people vote for higher taxes. To sum up, the only case where the expected outcome «poorer people want higher tax rates» does not hold is when the elasticity of marginal utility is smaller than or equal to one and the rate of time preference is larger than the steady state growth rate.\textsuperscript{19} As a consequence, a median voter who is poorer than the average citizen will desire a lower tax rate in Ziesemer (1995) if he has inelastic marginal utility.

The last result may be altered once capital income is introduced and taxed at the same rate because the distribution of capital then matters as well. An individual who is «median» with respect to abilities may have

\textsuperscript{17} In Creedy and Francois (1993) and Perotti (1990), preferences do not appear explicitly in the formula for the desired tax rate.

\textsuperscript{18} This is the case in the model of Ziesemer (1995). It is also true in the model of Glomm and Ravikumar (1992) where individuals are assumed to have log-linear preferences and education of the future generation for which the tax revenues are used enter as an argument in the utility function.

\textsuperscript{19} This is the case in Glomm and Ravikumar (1992) as well as in Ziesemer (1995) because the benefits of the public investments reverse the standard result.
a high capital wealth and, therefore, a low willingness to pay income taxes. Thus tax resistance is to be expected in this case. An analysis of the joint impact of different abilities and capital endowments on growth rates requires the introduction of capital markets into the models which would make things rather complicated. Whether a person is on the side of the favoured or on the disfavoured side in a distributional conflict will always depend on all the sources of heterogeneity and on all the public goods and factors modelled as well as on the tax system used. Up until now all the papers with endogenous long-run growth rates contain only one source of inequality and very simple, usually linear tax systems. Future work will hopefully be able to construct models with both sources of inequality (or even more such as land endowments emphasized by Persson and Tabellini, 1992) and less simple tax systems.

5. Final remarks on political relevance

What could be the impact of the models for practical policy? First of all, it should be noted, that the basic aim of the models is to understand the mechanisms of economic development. Despite this rather general aim it seems that most of the models are primarily designed for industrialized and not for developing countries. In the latter, the instruments of taxation and the institutional setup for raising public finance and redistributing incomes in that process are normally not well developed. There are several reasons for this, most notably the following. First, a large sector of the economy is engaged in non-monetised subsistence reproduction. Second, there is usually a considerable informal sector. In these two cases individuals are outside the purview of any taxation. Third, people are often extremely poor and hence not directly taxable. Fourth, in most developing countries trade taxes are the prevalent tax form. Most of the literature reviewed in this paper, however, refers to

20 The impact of both, different abilities and capital endowments on the level of the growth path has been analyzed in Ziesemer (1990) and (1987, Chaps. 11-13).
21 Imperfect capital markets and their impact on the formation of human capital and on growth are analysed, e.g. in Torvik (1993). However, distributional conflicts are not considered.
22 It should also be noted that in nearly all the models reviewed in this paper possible repercussions of taxation that could change the distribution of incomes or wealth are, either implicitly or explicitly assumed away. An exception is Perotti (1993).
income taxes or modifications thereof, e.g. capital tax or a tax on benefits. Trade taxes, which often are regressive are therefore expected to have different effects on individual decision making as well as on economic development than the direct taxes examined in the models.

The image of political decision making as pictured in the models is extremely simplified and generally does not reflect actual political processes very well. This is especially true for many developing countries for which the image of rational, ideal voting patterns in the sense of a process whereby voters decide on programmes which clearly indicate the cost they would be asked to bear in form of taxation and the derived benefits in the form of public services does not necessarily apply.

To sum up, for all the models discussed above, the crucial question is whose distributional interests are promoted and implemented by politicians. In this view the political resolution of conflict is as important as is corrective taxation or historical accidents determining lock-in or lock-out. However, the literature until now has little to say on what the outcome of the distributional conflict will be. Perkins (1994), for example, argues that in the cases of South Korea, Singapore, Hongkong, and Taiwan it was mainly the political competition with North Korea, Malaysia and the Peoples Republic of China that encouraged public investment in education and other purposes. If this is true the question arises whether the success of these countries exerts some pressure on other countries, such as those of Latin America, or whether there will be a phasing out of these success stories in the future. Only history will tell as long as changes in outcomes of distributional conflict are largely unpredictable.

One may conclude from those observations that endogenous growth theory, seen as general theory of development, has already provided us with useful insights but it is still in its infancy. Hence, much has to be done theoretically and empirically to detect the basic factors behind successful and even «miraculous» economic developments. It is easy to agree with Lucas (1993, p. 271), according to whom it is clear that once «we understand the process of growth ... we ought to be capable of demonstrating this knowledge by creating it ... If we know what an economic miracle is, we ought to be able to make one». It seems, however, we are still far removed from making economic miracles.

*23* Historical accidents, such as wars or natural catastrophies, may destroy useful resources and make a country so poor to get locked-in in that state, i.e. there would be no chance to leave it.
Bibliography


Endogenous growth and distributional conflicts


