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CAPITAL INCOME TAXATION AND RESOURCE ALLOCATION

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INTRODUCTION TO THE SERIES

This is a series of books concerned with the quantitative approach to problems in the social and administrative sciences. The studies are in particular in the overlapping areas of mathematical economics, econometrics, operational research, and management science. Also, the mathematical and statistical techniques which belong to the apparatus of modern social and administrative sciences have their place in this series. A well-balanced mixture of pure theory and practical applications is envisaged, which ought to be useful for universities and for research workers in business and government.

The Editors hope that the volumes of this series, all of which relate to such a young and vigorous field of research activity, will contribute to the exchange of scientific information at a truly international level.

THE EDITORS

PREFACE TO THE ENGLISH EDITION

This book is a revised and updated version of my habilitation thesis submitted to Mannheim University in 1982 and published in German by Mohr in 1985. The English manuscript was completed shortly after the 1986 U.S. tax reform. Where appropriate, the book comments on this reform and applies the theoretical findings to it.

Although the book should be accessible to graduate students, it is not a textbook. It is an old-fashioned European-style monograph, reminiscent of the times when scientific results were published in books rather than in articles. It is designed for professional economists at universities, research institutes, and governments. It attempts to provide a comprehensive view on the allocative implications of capital income taxation.

I owe much intellectual debt to my teachers and colleagues. My interest in the subject was stimulated many years ago by Hans H. Nachtkamp's and Herbert Timm's seminars on neutral taxation. More recently I have benefitted from the comments of participants in numerous seminars, primarily at German-speaking universities, where I presented various chapters of this book. I have also had useful discussions with Günter Franke, Peter Howitt, Ngo Van Long, Agnar Sandmo, David Sewell, Lawrence Summers, and John Whalley. In addition to my referees, Hans H. Nachtkamp, Horst Siebert, and Christian Schneeweiß, I received extensive and helpful comments on the manuscript from Mervin King, Otto Gandenberger, and Peter Swoboda.

Valuable technical assistance was provided by Kai Konrad, Harald Kotsch, and Stephan Panther. The numerous drafts of the manuscript were typed with great patience by Gertraud Porak and Ingrid Wutte. I hope they forgive me for my pedantry. Juli Irving-Leßmann helped to improve my English style, eliminating as many Germanisms as she could find. If the text, nonetheless, lacks the elegance a native English writer could ensure, this is not her fault.

I am grateful to all who helped clear my mind, enabling me to produce this book.

Hans-Werner Sinn

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INTRODUCTION

Limits of the Study

This book is concerned with the influence of taxation on the allocation of the factor capital. It is a positive analysis, in that it describes how taxes affect economic behavior. It is also a normative analysis, in that it makes rigorous judgements concerning the value of specific taxes from the viewpoint of Paretian welfare theory. While distributional aspects are not emphasized in this study, they are treated: Chapter 10 deals exclusively with the incidence problem.

The effects of taxation on the stability of economic equilibrium are not considered. Limiting the issues discussed in this book in this way is an attempt to achieve the gains of specialization, it does not reflect a belief that stability problems are unimportant.

Aims of the Study

The allocation of the factor capital is of crucial importance for the operation of modern industrial societies. The stock of capital that determines the well-being of Western nations was laboriously accumulated over many generations. The further development of this stock, its distribution among different countries and its allocation to different uses within these countries is essential for the prosperity of present and future generations.

As will be shown, under certain ideal conditions such as well-defined property rights, well-functioning capital markets and a lack of government intervention, there are good reasons for believing that the market process brings about an efficient use of existing capital and, measured against the time preference of households, an optimal formation of new capital. However, not all of these ideal conditions are met with in reality.

One of the most serious obstacles to an optimal allocation could be the tax policy. The possession of capital and the receipt of capital income has long been considered a sign of a particular ability to pay taxes and has induced fiscal authorities to collect these in various ways from the owners of capital. A priori, it seems quite natural to expect that such taxes reduce the incentive to build up new capital and induce a flight of capital into uses that are less heavily taxed and into low-tax countries. The main goals of this study are to discover to what extent this a priori expectation is justified, and to determine what changes in taxes would be necessary so as to disturb the efficient use and optimal accumulation of capital as little as possible.

In recent years, the suspicion that industrialization is not an unmitigated blessing has been increasing in the rich industrialized nations. Slogans like "growth fetishism" and "oppressive consumption" are now very common. At first sight, such suspicion can be interpreted as a rejection of the goals of economic growth and allocation efficiency. In fact, however, the opposite is true. Those who criticize modern capitalist development so vigorously would prefer a qualitatively different kind of development: "environmental protection" instead of the "throw-away society", "development aid" instead of "wallowing in luxurious living", and the like. The critics do certainly not want a stagnant society for the very realization of their goals requires extensive capital accumulation and an efficient allocation of existing capital.

The public often finds it difficult to understand the subtler aspects of allocative efficiency. Unlike stability and distribution issues, allocative problems are often neglected in the hurly-burly of day-to-day politics. Nevertheless, in the medium and long run, that is in a time horizon extending beyond business cycles and election dates, the problem of allocation is of decisive importance for people's well being. None of the many little *Harberger triangles* that economists have been able to isolate may be by itself very exciting. However, the sum of all these triangles explains the welfare difference between eastern and western societies, a difference that is glaringly obvious to anyone who keeps his eyes open. In view of the importance of allocation problems, the economist must not be tempted to turn away from them even if he faces a Sisyphean task.

The allocation problem studied in this book comes under the heading of fiscal taxation. Governments have to withdraw resources from the private sector in order to finance transfer payments and public goods, but they should carry out this task in a way that minimizes economic friction. Citizens have to bear the unavoidable burden of financing a tax, but any *excess burden* resulting from a paralysis of the incentive to work, from a distortion of consumption patterns or from a misallocation of productive factors, should be avoided wherever possible. To some extent this goal resembles that of Colbert who described the art of fiscal taxation as plucking a goose without making it squawk.

In the seventies, the problem of optimal taxation, that is, taxing economic activities with a minimal excess burden, was the subject of an extensive literature, filling many issues of the *Journal of Public Economics* and other periodicals. This literature concentrated on problems of indirect taxation and was typically confined to static models. A tax on labor income is, it is true, implicit in these models since this tax can be interpreted as a uniform indirect tax on all commodities. However, a tax on capital income is necessarily absent. The reason is that economic categories like capital and interest can only be incorporated in static models with the help of highly artificial constructions. The extension of the discussion to the taxation of capital income within the framework of dynamic models is a task that has been only recently tackled by some writers.

This work is a further contribution to this task. In comparison to other attempts, its basic characteristic is that tax effects are typically studied within the framework of an intertemporal general equilibrium model like that of Irving Fisher. Fisher's approach depicts the process of intertemporal allocation in a quite optimistic way since misallocation of resources does not occur here in the absence of government activity. It is this very property that makes it particularly suitable for isolating tax distortions.

Despite the similarities with the static theory of optimal taxation, this book does not attempt to reproduce Ramsey rules for an optimal tax structure for, with the current state of art, such a procedure would probably mean limiting the analysis to only two uniform taxes on capital and wage income. Instead, it is devoted to an analysis of more complex theoretical systems of capital income taxation which permit a reconciliation with existing tax systems. Accordingly, attention focusses on alternative forms and degrees of integration between corporate and personal taxation. The analysis incorporates different tax rates on retained profits, dividends, interest income, and capital gains. Consumption taxes, taxes on the stock of capital, and, in particular, alternative tax depreciation policies are also considered. Excellent work on related problems has been done by a number of authors following the pioneering contributions of King (1974a, 1977).[1] However, surprisingly little attention has been paid to the roles of the alternative tax systems within a framework of market equilibrium. In

[1]See Auerbach (1983) for an overview of the literature.

particular, there does not seem to be any comparable study that addresses similar issues within an intertemporal general equilibrium framework.

The attempt to present the tax system in a comparatively complex way has the advantage that the analysis can be applied to problems that have immediate political relevance. An example is the problem of double taxation of corporate dividends through corporate and personal income taxes. In the sixties and seventies, there were intense political discussions of this topic in various European countries which resulted in new tax laws that substantially reduced the burden of double taxation. In recent years, the discussion was most vigorous in the United States, and there were voices that demanded adoption of the European reforms, up to now, however, without success. Another example refers to the close network of mutual international tax conventions and agreements that links the countries of the Western hemisphere. In the Model Double Taxation Convention published by the OECD in 1977, an agreement was reached on the taxation of border-crossing interest income flows, but despite extensive attempts, the different opinions on the taxation of border-crossing dividend flows could not be coordinated. The discussion continues. The third example refers to the American tax reforms of 1981 and 1986. Perhaps the most important allocative aspect of the 1981 tax reform was the introduction of the Accelerated Cost Recovery System. This system cut tax depreciation periods in half, and it can be argued that this was one of the main reasons for the huge capital imports into the United States and for the high levels of interest rates that troubled the world economy in the first half of the eighties. The 1986 tax reform removed some of the provisions of the Accelerated Cost Recovery System, but, in exchange, it brought about substantial cuts in personal and corporate tax rates. This, too, will not leave the world economy unaffected, let alone the economy of the United States, and once again immediate and significant consequences for day-to-day policy making can be expected. On this and other problems this book can offer a number of insights. Some of them confirm common beliefs; others are in striking contrast to them.

In addition to an analysis of existing tax systems or systems that are under discussion in the political sphere, the book also examines those proposals for a reform of direct taxation that aim at removing, almost completely, tax-induced distortions in the formation and use of the factor capital. The issue is not primarily whether existing tax systems of the Schanz–Haig–Simons type should be replaced with an expenditure tax à la Mill, Elster, Mombert, or Kaldor. Rather, the attention focuses on the possibilities of constructing distortion-free systems of personal and corporate capital income taxation. That there are such possibilities – ones that do not necessarily require a radical upheaval of existing tax systems – will be shown in the last chapter of this book.

Methodological Problems

The change in taxpayers' behavior induced by a tax change is usually separated into a substitution and an income or wealth effect. Corresponding effects can be distinguished for those affected by the compensation measures necessary for balancing the budget. For an allocative evaluation of a tax, only the direct substitution effect on the tax payers is relevant. The blame for an excess burden can only be put on this effect: only *it* is a specific characteristic of the tax. When the tax rates are appropriately chosen the income effect and the effects resulting from the necessity of balancing the budget can be identical for many taxes. Were these effects to be included in an allocative analysis, there would be a risk of watering down the differences between the various taxes and of presenting a distorted picture of the structure of an efficient tax system.

Taxes that are free from any direct substitution effect are defined as *neutral* in this study. Although this is a common way of defining neutrality, it is not used unanimously in the theory of public finance. Sometimes a tax is defined as neutral if it does not induce *unintended* substitution effects. Thus, the meaning of neutrality depends on the normative position of policy makers. This book does not use this definition. A tax is neutral if, and only if, it does not induce a direct substitution effect, whether this effect is intended or not. This does not mean that the notion of neutrality is normatively meaningless. On the contrary, in the case where the laissez-faire allocation is optimal, taxes should indeed be neutral in the above sense for this avoids an excess burden. The difference between the definitions depends on direction; one defines the desirable as neutral, the other the neutral as desirable.

In order to isolate the direct substitution effect of taxation and to be able to answer the neutrality question, no special precautions are necessary in the partial analytic model of a *firm*. Effects originating from the necessity of balancing the budget are disregarded because the analysis is partial and there is no income effect if there are perfect markets that allow firm and household decisions to be separated; there may be an income effect for the households owning the firm, but for the firm's decisions this effect is irrelevant. On the other hand, in the partial analytic model of the *household* and in the general equilibrium model, special assumptions are necessary if intermingling of the direct substitution effect and the other effects is to be avoided. A simple assumption, appropriate to the purpose of this book, seems to be that government redistributes tax revenues in a lump sum fashion back to the households. Other, analytically similar, assumptions are described in connection with the development of an intertemporal general equilibrium model with taxation (Chapter 8).

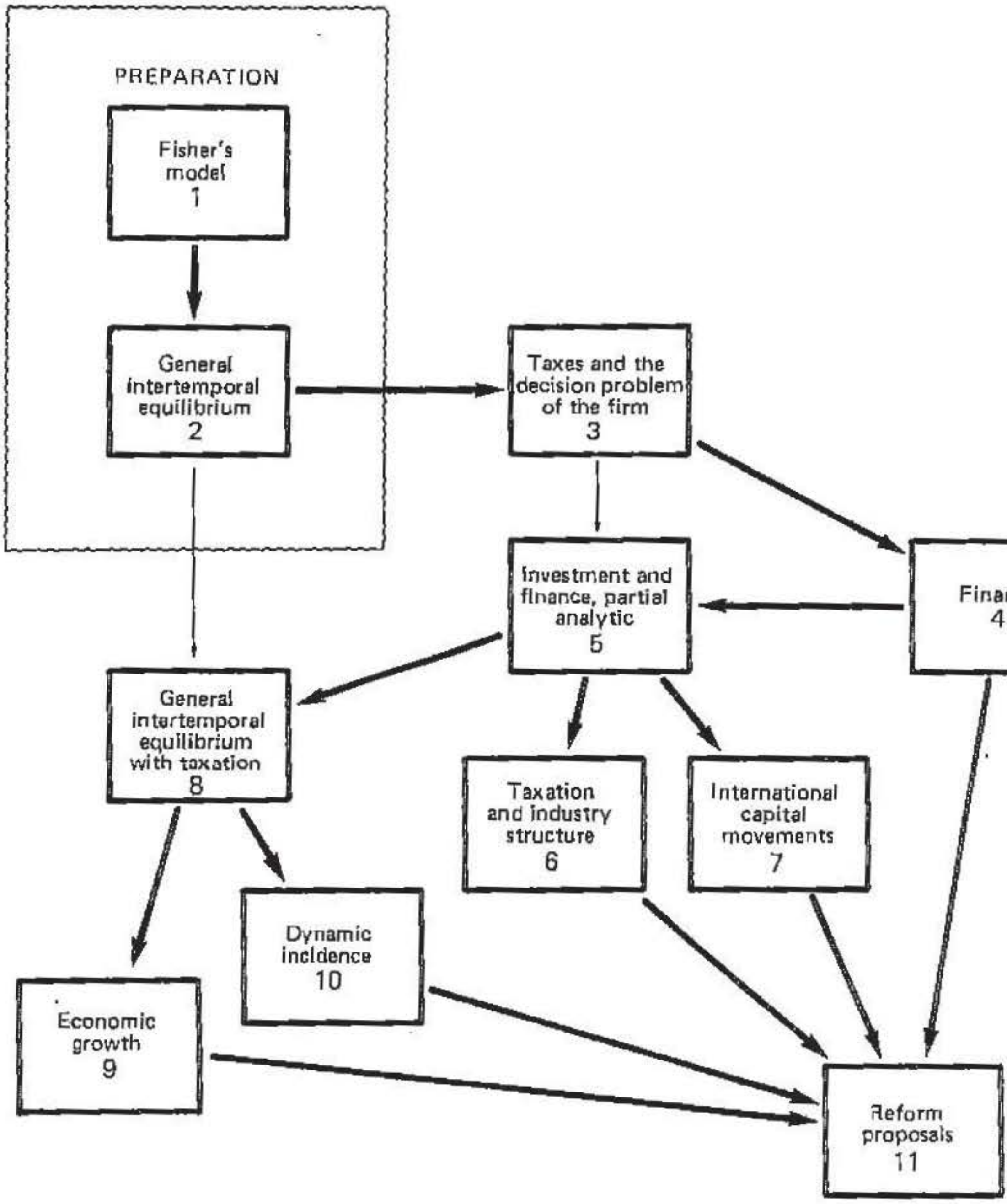
By using the assumption of lump sum transfers, a particular form of differential tax analysis is carried out. This assumption is solely an analytical tool for isolating the direct substitution effect, it does not imply that such transfers can really be made. Two analytic steps are necessary for a "true" differential tax analysis; that is, for an analysis of the substitution of two genuine taxes. In the first step, two separate differential analyses with lump sum transfers have to be carried out for the respective taxes with the same present value of the tax revenue or transfer payment being assumed in each. In the second step, the allocative effects thus found have to be subtracted from one another. The result is the same as that of a "true" differential tax analysis. Thus, the findings of this book have immediate implications for the question of which taxes belong to an optimal tax system whose purpose is to finance a given present value of government expenditures with as little distortion as possible. They show how Colbert's goal can be achieved.

The Structure of the Book

The organization of the material presented in this book is shown in the following figure. There are eleven chapters linked with one another as illustrated.

The first two chapters are preparatory to the analysis and are predominantly educative. The first describes Fisher's approach, the second an intertemporal general equilibrium model with capital accumulation and separate decision problems of households and firms, but without government activity. If an appropriate model of this type had been available in the literature, its presentation before starting the analysis of taxation would have been superfluous. A basic difficulty with this investigation was, however, that this was not the case.

With Chapter 3 the public finance part of the book begins. This chapter gives an overview of the tax systems that exist in the OECD countries, it places particular emphasis on the taxation of capital incomes, and sets up



The Structure of the Book

the optimization problem of the firm under the influence of such tax systems. This chapter also contains an analysis of the impact of taxation on the firm's labor demand.

Chapters 4 and 5 study the implications of taxation for the firm's optimal financial decisions and for its optimal investment plans. From a theoretical point of view, both of these chapters are basic for many of the allocative effects described in the subsequent chapters. Even in the absence of detailed knowledge of the household's decision problem they have direct implications for the influence of taxation on the sectoral structure of the economy and on international capital movements. These implications are pointed out in Chapters 6 and 7.

Starting with Chapter 8, the decisions of the household sector are included in the analysis of tax effects. This is the last step for a generalization to the case of taxation of the intertemporal general equilibrium model of Chapter 2. In Chapters 9 and 10 this generalized model is interpreted with regard to intertemporal tax distortions and with regard to dynamic aspects of tax incidence.

While Chapters 3 through 10 are primarily concerned with existing tax systems, the last Chapter (11) tries to follow up the implications of the previous investigations. In this chapter, different proposals for a reform of capital income taxation whose realization could mean substantial allocative improvements are discussed.