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Introduction

Martin Feldstein

Capital formation has long been a central focus of the research of the National Bureau because of the central role of capital accumulation in the process of economic growth. NBER studies in this area, including the work of Simon Kuznets, Raymond Goldsmith, and Milton Friedman, have focused on the determinants of saving as well as on the process of investment in plant and equipment.

A high saving rate leads to a high rate of investment in plant and equipment and in housing since the increased flow of saving reduces the equilibrium cost of funds to prospective borrowers. The rate of saving is, of course, influenced by many factors in addition to the tax rules emphasized in the current volume. Demographic factors, retirement arrangements, and public and private pension systems have an important independent influence. Tax rules, as the evidence in this volume indicates, are important because they affect the return that savers receive in exchange for postponing consumption.

Investment in plant and equipment is a critical aspect of economic activity, for it contributes directly to raising productivity and therefore to raising the nation's standard of living. An increase in saving does not automatically produce a rise in such investment, however; the savings can go instead into housing or foreign investment. A variety of factors influence the division of the nation's capital stock between plant and equipment, housing and foreign investment. These factors can be summarized as affecting the relative profitability and riskiness of alternative types of investments. The studies in this volume deal with the way taxes affect the profitability of different investments and the impact of those profitability differences on the allocation of the capital stock.

A finding common to several of these studies is that the process of capital formation is quite sensitive to tax rules. With respect to personal saving, Steven Venti and David Wise report an analysis of new survey evidence that indicates that Individual Retirement Accounts have a powerful effect on personal wealth accumulation. They estimate, for example, that an increase in the annual IRA contribution limits would significantly raise contributions, with about half of that increased contribution coming from reduced consumption and most of the remainder coming from reduced tax liabilities. Relatively little of the increased IRA contributions would come from reductions in other types of saving. Thus a rise in the IRA contribution limits would raise national saving even though it reduced tax revenue.

A quite different type of evidence on the sensitivity of personal saving to tax rules is provided by Gregory Mankiw's analysis of the effects of the after-tax interest rate on consumer durable spending. Mankiw's analysis indicates that the after-tax interest rate is an important determinant of consumer spending, especially spending on consumer durables. This implies that tax policies that raise the after-tax return on saving, like the IRA or a partial exclusion of personal interest income, would stimulate personal saving. Similarly, the proposal to eliminate or limit the deductibility of consumer interest would reduce consumer borrowing and raise the net saving rate.

Lawrence Lindsey analyzes the long-term capital gains reported in each tax bracket in every year since 1965. This important body of aggregate data by income class has confirmed the finding of previous studies based on individual tax returns and on household survey data that the decision to realize capital gains is quite sensitive to effective tax rates on realized gains. Lindsey calculates that the sensitivity to high capital gains tax rates is such that a capital gains tax rate above 20% reduces total tax revenue.

My own study with Joosung Jun examines the relationship between tax-induced changes in the net profitability of investment during the past three decades and the share of GNP devoted to net investment in plant and equipment. The evidence indicates a powerful effect of tax rules on business investment that is consistent with past research and with the rise in net investment in the 1980s. Our analysis implies that the types of changes in tax rules that have recently been proposed by the Reagan Administration and legislated by the House of Representatives would significantly reduce business fixed investment. The eventual effect would be to reduce such investment by approximately the full amount of the additional corporate tax revenue.

The frequent changes in tax rules have sensitized businesses to the possibility that existing tax rates and tax rules are subject to change. Alan Auerbach and James Hines analyze the response of business investment to anticipated changes in tax rules and conclude that business investment responds to anticipated tax changes as well as to existing tax rules. Their paper presents estimates of the likely effects of different recent tax proposals on the timing and magnitude of business investments in equipment and structures.

A significant alternative to investment in the United States is additional direct investment in overseas production facilities. The paper by Michael Boskin and William Gale reports that tax-induced changes in the net profitability of investment in the United States has an important effect on the international location of investment, particularly on the amount of foreign direct investment financed by retained earnings. More precisely, Boskin and Gale estimate that for every dollar of increase in U.S. domestic investment induced by tax policy, there is a reduction of approximately six cents of U.S. direct investment abroad financed out of overseas retained earnings. In addition, the increase in U.S. domestic investment includes a significant inflow of direct foreign investment from abroad.

Several previous studies have indicated that existing tax rules distort the allocation of capital among different types of investments. These distortions were a primary reason advanced by the Treasury for its proposed changes in depreciation rules and for elimination of the investment tax credit. The present research confirms the existence of important distortions in investment incentives but indicates that the nature of the bias in current tax law is quite different from what has previously been asserted.

More specifically, in contrast to the common assertion that current tax law factors investment in equipment relative to investment in structures, the study by Roger Gordon, James Hines, and Lawrence Summers concludes that current tax rules favor investment in structures relative to investment in equipment because of the opportunities to redepreciate buildings that are resold, the differential ability to use debt to finance investments in structures, and the possibility of arbitrage between investors in different tax brackets.

Patric Hendershott's study emphasizes that the important investment bias in current tax law is not among different components within the category of business fixed investment but between business fixed investment as a whole and investments in inventories and in owner-occupied housing. Current tax rules impose a much higher effective tax rate on investment in inventories than on investments in business plant and equipment. Moreover, current tax rules imply a much lower effective tax rate on investments in owner-occupied housing than on all forms of business investment. As a result, current tax rules increase the share of investment going into owner-occupied housing and decrease the shares in business plant and equipment and especially in inventories.

Hendershott's analysis shows that although the Treasury's tax plan would reduce the difference in effective tax burdens among different types of corporate assets, it would increase the advantage of real estate relative to corporate assets. Hendershott's calculations indicate that the tax bill passed by the House of Representatives would actually increase the existing overall misallocation of capital and raise the efficiency loss by exacerbating the existing bias in the allocation of capital toward owner-occupied housing and away from corporate investments.

Tax reform could increase national income by achieving a more "level playing field" among different types of assets, but the work of Gordon, Hines, and Summers and that of Hendershott indicate that the critical ingredient in such reform is to reduce the tax on business capital relative to owner-occupied housing.

In a related study, Lawrence Summers reports new evidence from a survey that he conducted of major industrial corporations. The corporations were asked about their method of evaluating investment options, and those companies that used a discounted cash flow technique were asked the discount rate that they used. Summers found that the vast majority of firms used a formal capital budgeting procedure and that the discount rates used for calculating the present value of depreciation allowances (and other components of corporate cash flow) had a median of 15% and a mean of 17%. These discount rates are substantially higher than the 4% real rate assumed by the Treasury in its calculations. One important implication of a high discount rate is that the investment tax credit is a substantially more powerful incentive to invest than an increase in depreciation allowances with an equal present value when discounted at the rate assumed by the Treasury in its analysis.

An important focus of the tax reform debate has been on those companies that pay no corporate tax in a particular year. The papers by Alan Auerbach and James Poterba and by Saman Majd and Stewart Myers examine some of the reasons for and consequences of the temporary no-tax status of corporations. Since these companies in general expect to be subject to tax in the future, the temporary no-tax status has very different effects on their incentives to borrow and invest than a permanent tax exemption would have. These papers indicate the need for addition work on this subject.

Mervyn King's paper explores the implications of shifting to a "cash flow corporate income tax," in which corporations are taxed on the net cash flow received from their activities rather than on any accounting measure of income. Such a tax permits the expensing of all investment but taxes the receipts from borrowing. King discusses a number of the practical problems that would be involved in adopting such a tax.

The final two papers in the volume present calculations based on disaggregated computable general equilibrium models of alternative tax reform proposals. The analysis by Don Fullerton (an NBER Research

Associate and University of Virginia professor who was on leave and serving as Treasury Deputy Assistant Secretary for Tax Policy when this study was completed) and Yolanda Henderson evaluates the potential effect of the Treasury Tax Plan of November 1984 and the president's proposal of May 1985. Their model allows them to assess the potential gains from changes in interasset, intersectoral, interindustry, and intertemporal distortions. They present two parallel analyses corresponding to two alternative views of the effects of dividend taxation on the cost of capita. One view implies that the Treasury plan would produce a sizable increase in the cost of corporate investments while the other view implies that the Administration's tax proposals would cause a slight reduction in the overall cost of capital.

The paper by Charles Ballard, John Scholz, and John Shoven uses a general equilibrium model to evaluate the effects of a value-added tax. The paper finds that the introduction of a VAT and an equal-yield reduction in the personal income tax would improve the efficiency of the economy. The analysis shows the substantial reductions in this gain that result when different value-added tax rates are imposed on different types of goods and services.

The studies in this volume show the substantial effects of taxation on the process of capital formation and therefore on the overall operation of the economy. While some of the research confirms earlier findings, other studies show that previous conclusions must be reconsidered. The National Bureau will be continuing its tradition of research on capital formation in general and the current project on the effects of taxation on capital accumulation in particular. Although the National Bureau does not make policy recommendations, we hope that these studies will be helpful to those who are concerned with policy decisions concerning taxation.