

# Taxation, Information, and Economic Organization

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So long as men have been ruled by governments, there have been taxes. And so long as there have been taxes, there have been complaints about them. Taxes played a critical role in the founding of our Republic: the slogan "Taxation without representation is Tyranny" provided a rallying point for the Revolution. The framers of the Constitution were well aware of the potential for political discord to which taxes could give rise, and they specified three important Constitutional restrictions on the set of taxes which may be imposed. They were, it would seem, more concerned with the distributional consequences of taxation, of the ability it provided for the politically powerful to redistribute income from others to themselves than with its effects on economic efficiency.

But even by then, history had provided numerous examples of the potential distortionary role of taxation. The windowless houses constructed in England as a result of the window tax is perhaps the most famous example, but it is not hard to find others: visitors to Tuscany often remark about the unique quality of the bread served there, marked by the absence of salt, little aware that its origins go back to a medieval tax, which has left its permanent mark.

It has only been during the past hundred years or so that there have been systematic attempts to understand the full consequences of taxes and to design tax systems that are both equitable and efficient. The nineteenth century economist, Henry George, proposed what he thought of as a "solution" to the tax problem, a tax on land. The great English mathematical economist, Edgeworth, my predecessor in the Drummond Professorship of Economics at Oxford, initiated the formal study of optimal tax systems. It has, however, only been during the past decade or so that we have become more fully aware of why it is impossible to design an equitable, non-distortionary tax system; and as we have come to understand the impossibility of designing a non-distortionary tax system, we have become increasingly aware of the full range of distortions

associated with taxation. Moreover, our economy has become both more sophisticated and more complicated. The greater sophistication associated, for instance, with increased computerization, has enabled a more uniform enforcement of taxes than had previously been possible; it has enabled the imposition of taxes that previously would have been, at best, administratively difficult. At the same time, the greater sophistication of taxpayers has resulted in methods by which taxes can more easily be avoided, making tax avoidance a major problem. The difficulties facing the tax authorities have, in this sense, increased. There is a view of the evolution of the tax system as a war between the tax authorities and the taxpayers. Who really won the Battles of 1986 remains to be seen.

In this session, Mark Wolfson and I want to sketch out a framework for thinking about the consequences of taxes, a framework which provides insights into both how to avoid or reduce taxes, given our tax structure, and how to design a better tax system. In preparing for this talk, Mark and I got together to share ideas, develop new insights, and to discuss what each of us might say. In doing so, we recognized that the frameworks that both of us employed in our approach to the analysis of taxation were essentially identical. This is perhaps not surprising, since he was instrumental in having me invited to address this meeting. To avoid as much duplication as possible, we have agreed to divide our tasks; I will present much of the

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general theoretical framework, and Mark will embellish, drawing out some of the more important consequences, including some insights into the effects of taxation on economic organization which, until his work, had received scant attention.

The framework that we share is based on the following five central considerations:

1. Taxes can only be imposed on the basis of information that is available to the government. There are fundamental asymmetries in the information that individuals have and that governments have. Individuals and firms can be selective in the information that they make available.
2. The information that is now made available publicly serves, however, more than one function. It not only affects what taxes the government might (does) levy. It may also, for instance, affect the value of a security, or the willingness of someone to engage in a transaction. Information asymmetries, it is now recognized, are pervasive throughout the economy, and economic relations are pervasively affected by the selective disclosure (direct and indirect) of information. Moreover, there are conflicting objectives: for tax purposes, the firm wishes to provide information that its income is low; while to increase its stock market value, it wishes to provide information that its income is high.
3. Among the reliable sources of information are market (or what may be called anonymous) transactions. Information provided by non-market transactions is often of questionable reliability; information provided by, say, intra-firm transactions is perhaps of particularly low value, for purposes of taxation, since it can be so easily manipulated. Because of its "reliability" governments have been inclined to rely on market transactions, and in particular, on a subset of easily observable market transactions; among the distortions that may result is the extent to which transactions take place in anonymous markets.
4. The frictions in the market, including those associated with asymmetries of information, and transactions costs, affect what economic transactions occur through anonymous markets and are central to an understanding of the government's ability to raise taxes, and of the limitations on that ability.

5. The effect of a tax cannot be analyzed in isolation; only the effects of a tax system, the full set of taxes which are levied, can be assessed. Moreover, one has to look beneath the surface and at the full general equilibrium consequences of the tax system. The fact that the government imposes half of the social security tax on employers and half on employees does not mean that half of the tax is really borne by employers. The fact that interest on state and local bonds is tax exempt does not mean that it is those who buy these bonds who get most of the benefits of this provision. The consequences of the corporation income tax depend on whether or not capital gains receive special treatment.

To analyze the effects of a tax system, we must have a theory about how the economy behaves. On the other hand, the study of how the economy responds to the tax system provides one of the best ways of learning about the economy. It is the closest thing we economists have to experiments.

The study of taxation provides us with insights into the economy for another reason. Most of us have little knowledge of the technology required to be manufacturers of cars, for running a financial system, or for making airplanes. Accordingly, we cannot tell whether the economy is "efficient." Those of us brought up on the virtues of capitalism take it as a matter of religion that it is efficient—at least when not interfered with by the government. Yet at the same time we recognize that it is capable of producing far more than it does, as witnessed by the ability of productivity to respond to the demands of wartime. But while we may not know whether GM or Chrysler produces cars efficiently because we do not know exactly what is entailed in car production, the tax code is public information; it is relatively simple, contained in less than a hundred large volumes, and the central provisions can be even more briefly summarized. We can see whether firms do in fact minimize their tax burden. If they do not *seem* to, we need to ask why? Are they not rational? Is some assumption in our model wrong? If so, which?

Over the years I have discovered a large number of what I call "tax anomalies"—examples of widespread behavior, involving billions of dollars which individuals seemingly voluntarily pay to the Treasury. Although I was brought up in a family in which the importance of charity was stressed, the government was not among those included in the list of those deserving

charity. And I am sure that my feelings are shared by most taxpayers. Some of these examples are true anomalies. I cannot account for them other than by the observation that those students of mine, who seem so mediocre in class but which economic theory says when they enter the business world, become, or behave as if they become, intelligent, rational, calculating profit maximizers, remain mediocre in later life; they do little better in maximizing profits than they did in finding the maximum of some elementary function. Some of those in the business community with whom I have discussed these anomalies report that they are aware of them, that they are indeed not as foolish as it might seem, but it is their colleagues, their shareholders, their banks, which are the source of the problem. Never mind. The point is that in light of these anomalies it is hard to hold to some of the central hypotheses of traditional neoclassical economics.

Others of the anomalies point out the central role of imperfect markets, frictions, transactions costs, and informational asymmetries, in the analysis of the consequences of taxation, and it is to this theme that I will return later.

In the waning days of the Carter administration, I was asked by OTA (the Office of Tax Analysis of the Treasury) to analyze the consequences of the capital gains tax and to draw out some of the policy implications. I was aware, of course, of the hidden agenda: Feldstein had been arguing that lowering the capital gains tax rate would increase revenues. Had Feldstein discovered something akin to the economists' perpetual motion machine? Surely, if tax rates were lowered to zero, revenues could not rise still further! On this, he had been silent. But even if his conclusion held within a more limited range, it had strong policy implications.

When I began my work, I wrote down the economists' standard model of the economy, and the tax economists' standard model of the tax structure, merged the two, and attempted, like every good neoclassical economist, to maximize expected utility (or perhaps more accurately, I attempted to find out how individuals would design a set of transactions to maximize their expected utility). I kept finding difficulties. At last, I was led to the solution: there were several optima. All had the property that individuals paid no taxes and all had the property that all real variables in the economy were unaffected by taxation.

It used to be said that there were two things in life that were inevitable—death and taxes. What I seemed to have proved was that if death was inevitable (I had assumed individuals lived a

finite life, contrary to many conventional economic models, but more in accord with my perception of reality), then taxes were not.

The methods by which taxes were avoided were variants and generalizations of some commonly employed tax avoidance devices. (I am smart enough to realize that there may be market value in the translation of these theoretical notions into practice, and so, for purposes of this talk, I simply assert the existence of these devices.)

I am not an empirical economist. Yet, it did not take a fancy regression for me to ascertain that something was wrong with the model. I—and most of my friends—do pay taxes; the government does collect revenue. There were three possibilities: I had made an error; the standard public finance model of the tax structure was wrong; or the standard economists' model of the economy was wrong. I did not entertain the first possibility for long. This left two others. Admittedly, I had oversimplified the model of the tax structure. I had, for instance, ignored restrictions on wash sales (in which individuals essentially buy and sell the same security). Yet it seemed apparent that, if the economists' model of perfect capital markets was correct, that restriction should be inoperative: there were, in effect, an infinite number of ways by which an individual could achieve essentially the same pattern of returns. He could buy one set of securities, and sell another set, the returns to which were perfectly correlated with the first set. There would be no way of ensuring that transactions which were functionally *equivalent* to wash sales did not occur. Even Congress was aware of this. In the debates leading up to the 1981 tax bill, a provision attempting to disallow the favorable tax treatment resulting from the wash-like transactions had been discussed; it required a statistical test of correlation. Many of my friends welcomed this legislation; had it passed, it would have been known as the Finance Economists' Relief Act of 1981, just as one of the earlier pieces of tax reform legislation had become known as the Lawyer and Accountant's Relief Act of the year in which it was passed—not that that particular subdiscipline was any more needy or deserving of relief than the rest of us.

Taking this and other detailed provisions of the tax code into account did not fundamentally alter the basic conclusion. It was still possible for individuals to avoid all taxation of income from capital and to offset at least part of wage income. In fact, an examination of tax returns suggests that the provisions of the tax code attempting to impose restrictions on taxpayers' abilities to

avail themselves of these tax avoidance possibilities (such as the limitations on the deductibility of interest) are not binding constraints.

I was thus forced to come to the conclusion that the problem with the model was not so much with the model of the tax structure, but with the model of the economy. Two features, in particular, of that model seemed defective: the assumption of rational, well-informed individuals, upon which I have already commented, and the assumption of a perfect capital market, with no transactions costs and no limitations on borrowing or on short sales.

Of course, to noneconomists, the economists' devotion to the assumption of perfect capital markets may always have seemed somewhat of an anomaly. The importance of these limitations on borrowing was brought home forcefully to me as a young assistant professor at MIT, by my teaching assistant, later to be colleague and co-author Michael Rothschild. According to the apocryphal version of this story, he had passed his generals, and in line with the theory of the day, believed that because of his higher certification, his lifetime income had increased, and therefore, his consumption should increase. Accordingly, he went to the bank for a loan, to purchase, I believe, a car of a standard which was more consistent with the lifestyle to which he hoped to become accustomed. (As an aside, if he had gone to a more empirically oriented school, he would have realized that getting a Ph.D. probably reduced one's lifetime income.) The banker turned down his application. His consumption was credit constrained. When he informed the banker that he was a Rothschild, about whom the banker must undoubtedly know, the banker apologized, saying that he had only been in the business for 11 years.

The religious nature of the finance economists' devotion to the hypothesis of perfect capital markets was never more evident than in their treatment of taxes. For some years, they attempted to test a variety of forms of the hypothesis of efficient markets, leaving out, apparently by error, all considerations of taxation. The results they found were convincingly supportive of their beliefs. When they subsequently became aware of the presence of taxes—of the wedges amounting to 30, 50, or even, in some periods, 70 percent of the returns—it was apparent that theory could once again be confirmed. Evidently, the theory was remarkably robust, to be able to withstand what may be interpreted as errors in the data of this magnitude!

The crucial moral to be taken away from this discussion of the first anomaly is that the very

ability of our tax system to raise revenues depends on the existence of certain frictions, transactions costs, and market imperfections. These are not to be treated as second order refinements—for the purposes at hand, they are the first order effects.

Of course, during the past decade, our understanding of the nature and origins of many of these market imperfections has increased. And the origins are similar to those associated with the government's inability to impose lump sum, non-distortionary equitable taxes—limitations on information. Thus, the asymmetries of information, which are central to understanding why the government does not impose what economists have traditionally referred to as first-best taxation, are also central to understanding how the economy responds to the taxes that are imposed, and why those taxes raise any revenue at all.

Evenhandedness requires that, at this juncture, I fault my colleagues in the public finance profession no less than I have faulted those in the finance profession. For while they have increasingly become aware of the difficulties that the perfect markets hypothesis presents them in the analysis of the consequences of taxes, they steadfastly maintain the appropriateness of using that model, imposing, in an *ad hoc* fashion, constraints on individuals' or firms' abilities to engage in one or another tax avoidance device, as need to be, to derive the results which they desire.

Let me turn now to the second anomaly, the dividend paradox, from which a different set of lessons can be drawn. Some 15 years ago, I analyzed the effects of taxation on corporate financial structure, taking into account the combined effects of the corporation income tax, with the deductibility of interest, and the individual income tax, with its special treatment of capital gains [Stiglitz, 1973]. The main point of that paper was to show that the longstanding presumption that debt was tax advantaged might be reversed when it was viewed within a full analysis of the impact of the tax structure, and that the corporation income tax might not have as distortionary an effect on firms' investment decisions as had previously been supposed. What is of concern for our purposes here was the result that became apparent in analyzing how firms could distribute funds to their shareholders in a way that minimized tax burdens—that buying back shares dominated issuing dividends. A proportionate share repurchase was perfectly equivalent, from the shareholder's point of view, to a dividend, except for the favorable tax consequences; and, in the absence of transac-

tions costs, a market repurchase dominated a proportionate repurchase, since each shareholder had the *option* of selling the proportionate amount, but the fact that some might choose to resell more than others (because of tax or other considerations) suggested that each was better off than under a proportionate repurchase.

Since I wrote that paper, two things have happened: there have been a rash of articles trying to explain why issuing dividends makes sense—none of which I have found very convincing; and share repurchases, mergers, and acquisitions, providing means by which funds can be transferred from the corporate to the household sector at favorable tax terms, have increased enormously, to the point where John Shoven now estimates that a very large proportion of all transfers receive this form of favorable tax treatment [Shoven, 1986]. He has emphasized the enormous loss to the Treasury. But what seems paradoxical to me is the enormous (seemingly) voluntary contribution to the Treasury, and its persistence over these many years. Yet the response of the market does provide us another important lesson: markets may learn slowly, and they may learn imperfectly, but they do learn. There is a second important lesson to be learned from this anomaly: there may exist several alternative, and in effect, equivalent ways to achieve the same *economic* outcome, which in this case is the transferral of funds from the corporate to the household sector. Tax laws that fail to take this into account may distort the form without distorting the substance of economic transactions. But to the extent this is true, such tax laws also raise less revenue.

This brings me to the third anomaly, which I refer to as the executive compensation anomaly. It has become fashionable for firms to pay their executives in stock options. This, it is alleged, is an attractive way to pay executives because it combines incentives with favorable capital gains treatment. This, I think, is misguided. Recall my emphasis that one has to take into account *all* of the tax consequences of any transaction. Ultimately, the pay of an executive has to come from the shareholders. When executives are paid by issuing shares, shareholders pay through the dilution of their shareholdings, effectively, through the reduced value of their shares. If the holding period of the executives is the same as that for the average shareholder, and the two were in the same tax bracket, then a dollar of after-tax income to the executive would cost shareholders precisely a dollar.

By contrast, when executives are paid directly by the firm, a dollar of executive pay reduces the firm's corporation income tax, reducing, in turn,

its issuance of dividends or share repurchases. In pre-1986 days, when the corporation income tax rate and the individual income tax rate were approximately the same, a dollar of after-tax income to the executive would cost the shareholders far less than a dollar of after-tax income. (In the case where the firm responded by reducing its dividends, a dollar of after-tax income to the executive would only cost a shareholder in the 50 percent bracket 50 cents, far less than the stock option plan.)

What about incentives? Firms can easily tie the amount they pay to their executives to the performance of the stock market. Thus, one can obtain the same incentive effects, with more favorable tax treatment, by paying executives directly, rather than through stock options. In fact, of course, the incentive issue is somewhat of a red herring, for if one were really concerned with incentives, one would want to tie executive pay to the performance of the firm. If the stock price goes up because *all* stocks go up, there is no reason to reward the manager. Managers should be rewarded on how well their stocks do relative to others in the market, and in particular, how well they do relative to others in comparable situations (industries).

Some years ago, I was at a meeting of personnel officers of some of this country's major firms, and I posed the question to them of why they designed their executive compensation schemes the way they did. There seemed to be two competing hypotheses: either they knew what they were doing and were attempting to deceive shareholders, who did not understand that paying executives with stock options had the effect of diluting their shares; or they did not know what they were doing. The consensus—not expressed in so many words—seemed to be that they did not know what they were doing, but even if they had, they would have gone ahead, because they believed that shareholders could be deceived.

The list of anomalies that one can compile is far longer than this. There is the LIFO-FIFO accounting anomaly, by which during inflationary periods firms using FIFO accounting for inventories seemingly could have reduced their tax obligations, collectively by billions of dollars, had they shifted to LIFO accounting. Again, many firms gradually did, but not all firms did. For many years, the government gave firms a choice of depreciation schedules; not all firms took advantage of accelerated depreciation.

Firms sometimes claim that the reason they do not take advantage of these provisions, which would reduce the present discounted value of

their tax liabilities and have no other real consequences, is that it would make the profits they report to shareholders and third parties look smaller.

This brings me to one of the central messages, and central quandaries, of this talk. What is apparent is that information generated for purposes of assessing taxes may have other consequences. While firms would like to convince the tax collector that they are poor, they would like to convince potential shareholders that they are well off.

The question is, why, particularly in the situations I described earlier, cannot shareholders distinguish among the functions for which the information is being used. It would seem perfectly easy for the firm to keep separate sets of books, or at least to explain how the books would have looked under, say, FIFO accounting. In some cases, there may be legal restrictions that affect the kind of information that can be reported. In other cases, there may be limitations on the ability of investors to absorb information. In both cases, what is apparent is that these "frictions" and "information limitations" have first order effects—and if they have first order effects in the context of this simple problem, how much more so might they have consequences in the context of the complex problems which those in decision-making positions in the business community constantly find themselves.

The research problem which this poses, then, is to ascertain the conditions under which firms cannot find tax favored equivalent actions which have the same consequences (including those relating to information revelation) as the actions that are heavily taxed.

One important set of circumstances in which information *may* be revealed has to do with accrued capital gains and losses. Individuals and firms would like to realize capital losses and to defer capital gains. There has been a long presumption that in an idealized tax structure, taxes would be imposed on capital gains as they accrued; but this ignored the fact that for most assets, it is difficult to ascertain market values except when the asset is sold. For many assets, then, there is little option except to tax capital gains upon realization. There are exceptions—we could tax marketed securities on the basis of their value at the end of the year, just as we now do for positions in futures markets. There are two reasons why we do not. First, to do so would introduce a wedge between marketed and non-marketed securities. Do we really want to discourage the usage of marketed securities? Second, liquidity constraints may mean that if we impose taxes on an accrual basis, we would

have to force some individuals to sell their assets. This second reason takes explicit cognizance of the market imperfections which, we have argued, are at the heart of the analysis of the impact of the tax system.

There are several possible ways of getting around both of these problems. One proposal addressing the first issue, which is not without its problems, is to have individuals state the valuation of their assets, with any other individual then being able to purchase the asset at that price. Such a system would, in effect, attempt to tax the consumer surplus that individuals realize from ownership of any particular asset; whether this is desirable is questionable.

The liquidity problem could, presumably, be resolved if the government were willing to borrow or lend (within specified limits) at market rates of interest. Since the government's ability to collect on "bad" debts is far better than that of a bank, presumably charging a slight amount above the safe rate of interest would be actuarially appropriate.

Such schemes remain, however, more in the realm of the economists' fantasies. Given that virtually all governments that have chosen to tax capital gains have done so only on a realization basis, we can ask, what are the consequences? It has long been recognized that it encourages the realization of capital losses and the postponement of the realization of capital gains. What has not been so widely recognized are the potential *organizational* consequences [Stiglitz, 1983], which may be the central true economic cost of this provision, and the offsetting private consequences of the information revelation, which may, to some extent, limit the magnitude of the tax-induced behavior [Scholes and Wolfson, 1987].

Shareholders may be imperfectly aware of the true value of the assets of the corporation. Managers and controlling shareholders want to reduce the flow of information about losses and increase the flow of information about gains. Declaring losses on tax returns makes shareholders aware of them. Not declaring gains may make them less aware of the gains than they otherwise would be. There is an asymmetry; however, there may be other ways in which firm managers may convince their shareholders of the presence of gains. But when a firm fails to report any losses, shareholders cannot distinguish between cases where there is an undisclosed loss and no loss at all.<sup>1</sup> In any case, it is apparent that, say, mutual funds seem perfectly happy to realize gains, in spite of the increased taxes which result, while they are reluctant to realize capital

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losses. The information about the value of the portfolio is, of course, already available. The realization decision—on losses and gains—focuses attention, at a rather considerable cost. What this example makes clear is that what is at stake is not just what information is available, but what and how information is absorbed and processed, a far more complex matter.

Why should we be much concerned about who owns what assets? Are there important consequences of what economists have called the “locked in effect,” the reluctance of those who have earned capital gains on some asset to sell it? A persuasive case can be made that the effects on equity markets are not particularly important. But more generally, there is a link between ownership and control. Economists have increasingly become aware of the importance of economic incentives in decision making. The residual returns, and residual control, associated with ownership cannot easily be reconstructed through alternative contractual arrangements. When, because of taxes, the owner of a small business postpones the sale of his firm, even though there may be some younger individual who might more effectively “control” the asset, there is a real economic loss to society. The old owner may obviously hire a young manager, and incentive pay may, if properly designed, reduce the discrepancy in their objectives. But, as the recent debates in Washington have made clear, it makes a difference where the buck stops: especially in a small firm, ownership matters.<sup>1</sup>

My teacher, Paul Samuelson, used to quote Wicksell, approvingly, as stating that it made little difference whether capital hired labor or labor hired capital. Incentives, ownership, and decision making played no role in these neoclassical conceptions of economics. Economic organization was of no consequence. Today, it is clear that that conception, as useful as it may be for some purposes, does not provide even the starting point for any understanding of the effects of taxes on our economy. If the assumptions that went into those models were correct, no taxes would be raised. Informational considerations are at the heart both of why we have the kinds of taxes we have, rather than the old style economists’ idealized conception of first-best taxes, and of the effect of those taxes on economic activity, including their effects on economic organization and the impact of that on economic activity.

### MARK A. WOLFSON

In his remarks this morning, Joe offered several reasons why economists find it useful to

study taxation. And he also indicated that the modern study of taxation differs dramatically from the neoclassical approach that dominated the research landscape but a few years ago. Before following up on these remarks, I would like to spend a few moments exploring what accountants have to offer in the research effort and to argue that the study of taxation is a natural pursuit for the academic accountant.

To do this, let me begin by expanding the scope of discussion to encompass research in accounting more generally. The field of accounting is blessed with a rich set of institutions that exhibit many unique and easily identifiable characteristics through which accounting activities are undertaken. CPA firms and the Financial Accounting Standards Board are but two prominent examples of accounting institutions. These institutions have arisen and survived due to their comparative advantage in facilitating certain types of economic exchange.

Among the objectives of accounting research, as with any other functional area of business like finance or marketing, are:

- to understand how the institutions unique to the functional area are organized and operated;

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<sup>1</sup>There are simple models in which, with perfect and costless confirmation of what is disclosed, one can obtain complete disclosure. See Stiglitz [1975] and Grossman [1981].

<sup>2</sup>Master limited partnerships (MLPs) represent an example of how new legal forms can be constructed which attempt to replicate in a tax-favored way some of the aspects of contractual arrangements that receive unfavorable treatment. These allow the same distribution of risks that could be achieved by a conventional equity relationship. Limited partners receive a pro-rata share of profits and are protected by limited liability. The general partner is not protected by limited liability, but if the general partner is a corporation, it is protected. The shares can be traded in the stock market, just like ordinary shares.

The one restriction that is effectively imposed is on control. In effect, the firm must create two classes of shareholders. It cannot *restrict* itself to the one share-one vote rule, except if it imposed a restriction that everyone who bought a limited partnership share bought a commensurate amount of the shares of the general partner. Thus the shift to MLPs that the current tax law has encouraged may have an effect on managerial control.

Safe harbor leasing provides another example of a deliberately created legal form. Here, the residual risk is borne almost entirely by the user of the capital, rather than the “nominal” owner.

- to understand how these institutions facilitate economic exchanges (and for sociologically-based behavioral researchers, noneconomic exchanges);
- to understand the ways in which the institutions sometimes compete with and sometimes complement the institutions in other functional fields in facilitating economic exchanges;
- to predict how institutional behavior will be altered by changes in the economic environment; and
- to prescribe how changes in the environment should be managed to achieve equity goals or to improve economic efficiency.

The economic activities most naturally associated with accountants include:

- the design of information systems to facilitate economic exchanges within the firm;
- the design of information systems to facilitate economic exchanges in a variety of *external* markets, including:
  - labor markets
  - product markets
  - capital markets
  - political markets
- the verification of information that forms the basis of reports produced by the information systems; and
- due to natural economies of scope, the rendering of consulting services to identify efficient organizational arrangements.

Choosing among alternative information systems for the firm is equivalent to choosing among the economic consequences of the information produced by the information systems, as we have learned from Joel Demski and Jerry Feltham. And since the economic consequences may differ dramatically depending upon the nature of the exchange, different information systems are often chosen to facilitate different kinds of economic exchanges.

Of course, we are not always completely free to design the information system in the ways we might wish. Some types of communication, especially those between the firm and outside parties, are highly regulated both as to form and content. The regulatory environment is motivated by a variety of equity and efficiency goals. As with the private choice of information systems by firms, given regulatory constraints, choice of regulations by the regulators boils down to choosing among the economic consequences of the regulations.

One of the more active areas of accounting research over the past decade has been to investigate the economic consequences of financial accounting rule setting. The approach has been much more empirical than theoretical, which is at the same time both its greatest strength and its greatest weakness. The overall findings have *not* been very impressive, in a statistical sense. The focus has largely been on the equity value implications of regulatory rule changes, although *some* work has also considered the effects on management compensation practices and management decisions (for example, how changes in financial reporting rules governing foreign currency translation affected foreign currency hedging policies). It is not surprising that the signal-to-noise ratio has generally been found to be rather low in these investigations. The reason is that the cash flow implications of different financial reporting rules is indirect at best and certainly not well understood.

To get a better handle on this important economic consequences issue, it would seem sensible to consider regulatory settings wherein the cash flow implications of rule changes are more direct and where implications for changes in organizational arrangements are more easily identified. The setting of tax rules would appear to satisfy these conditions nicely and are therefore a logical place for accountants to conduct economic consequences research.

Let me emphasize that when I refer to economic consequences, I do not mean to focus narrowly on security price studies. The more dramatic economic consequences are likely to be manifested in a broad restructuring of firms' economic balance sheets; that is, the changes in the mix of productive activities and capital structure, which includes equity valuation and the terms of employee compensation contracting as but two elements. Security price reactions are far from sufficient statistics to capture the economic consequences of these reorganizations.

### The Taxation Domain

Whether one is interested in studying taxation for the purpose of: (1) helping taxpayers to reduce tax burdens; (2) helping to formulate effective tax policies; or, less directly, but no less importantly, (3) to learn something about how the economy operates, one must begin with a microeconomic theory to tax planning. Myron Scholes and I have been working jointly towards the development of such a theory over the past three years (indeed, we have recently committed ourselves to writing a book on the subject), and we have recently begun to turn our attention to



gathering empirical evidence to test the theory. Consistent with Joe Stiglitz's suggestion that neoclassical models must be abandoned if we are to understand the role that taxes play in affecting the organization of economic activity, the theory is very much in the spirit of transactions cost economics.

We have been somewhat frustrated by the fact that tax professionals and information economists have largely been proceeding along independent lines in their attempts to describe or prescribe efficient organizational arrangements. While it seems indisputable that taxes affect the way in which production and exchange is organized in the economy, the same would appear to be true of the fact that information is asymmetrically distributed among economic agents. In many contracting problems, a desire to achieve tax minimization encourages precisely the same organizational arrangements as do solutions to incentive problems among differentially informed and opportunistic agents. When this occurs, researchers and public policymakers alike face an identification problem in sorting out which economic force is responsible for giving rise to observed contractual relationships.

On the other hand, tax considerations and information-related transactions cost considerations often have *conflicting* implications for efficient organization design, and a richer predictive theory of organizational arrangements should emerge if these interaction effects are considered. Joe mentioned a couple of examples of these conflicts earlier, and Myron Scholes and I have modeled such conflicts in a variety of other settings [Scholes and Wolfson, 1987], including:

1. risk sharing in a syndicate;
2. compensation planning;
3. customer and supplier contracting;
4. oil and gas exploration;
5. research and development activities;
6. the buy-versus-lease decision;
7. investment policy of depository institutions;
8. project selection in firms;
9. business insurance under conditions of moral hazard;
10. choice of secured versus unsecured debt in multinational businesses;
11. choice of local versus foreign suppliers;
12. choice of degree of decentralization of management;
13. corporate restructurings: selective asset

sales, capital structure changes, and mergers; and

#### 14. financial reporting policy.

In each setting, the tax planning opportunity arises due to differences in tax rates across taxpayers, across time periods, across economic activities, across legal organizational form, or across tax jurisdictions. In addition, contracting problems arise due to risk-sharing, moral hazard or adverse selection considerations. So it is important to recognize that in a great variety of circumstances, tax minimization and effective tax planning are very different animals.

One situation that we have recently begun to look at more closely, along with another colleague, Pete Wilson, is the conflict among tax considerations, financial reporting considerations, and regulatory capital considerations for financial institutions. We have been able to document that commercial banks restructure their economic balance sheets in response to changes in tax rules in predictable and statistically striking ways. We have also been able to document that banks forego very substantial opportunities to reduce their taxes by as much as they could. But most interesting to us, we have begun to document that banks are more inclined to take actions that reduce taxes when the costs to doing so, insofar as the impacts on financial accounting income and regulatory capital are concerned, are relatively small, and when the magnitude of the potential tax benefits is large.

### Towards The Development of a Research Paradigm

I mentioned earlier the importance of developing a microeconomic theory of tax planning as a prerequisite to the undertaking of fruitful research in the tax area. Let me now share with you some of the building blocks such a theory might possess. Joe discussed some of them earlier, so I will concentrate on others.

A microeconomic theory of tax planning is concerned with how tax rules affect the nature of contracting in both *personal* markets, such as within the firm, and *impersonal* markets, as well as how tax rules affect the decision of whether to transact in personal or impersonal markets. As we are all quite aware, the taxing authority is an uninvited party to virtually every contract into which taxpayers enter, and this can alter dramatically the calculus of the contracting process. The IRS brings to each of its forced ventures with taxpayers a set of contractual terms (the tax rules). Unlike other contracting parties, the IRS does not negotiate these terms separately for

each venture. This would be too expensive. Instead, it announces a standardized menu of terms by which taxpayers must live.

The *specific* contractual rules that the taxing authority forces on its joint ventures (that is, the Tax Code) is the result of a variety of socio-economic and political forces. Among other things, taxes are designed to:

- finance public projects, like national defense and a legal system that enforces property rights;
- redistribute wealth; and
- encourage a variety of economic activities that are deemed to be in the public interest.

Noble as these objectives might be, any tax system designed to achieve such a broad variety of social goals inevitably provides considerable private incentives to engage in tax planning. Any system that seeks both to redistribute wealth as well as to subsidize certain economic activities gives rise to a system of marginal tax rates that may vary wildly:

- from one contracting party to the next;
- for a given contracting party over time;
- for a given contracting party over different economic activities;
- for a given contracting party over different legal organizational forms; and
- for a given contracting party operating in different tax jurisdictions.

Because of the differences in tax rates, effective tax planning requires that the tax position of all parties to all possible contracts into which a taxpayer might enter be considered both at the time of contracting *and* in the future. Among other things, this observation exposes the *naiveté* of distinguishing between business tax planning and personal tax planning or tax planning for one type of business in isolation from tax planning for all other types of businesses. For example, it is impossible to prescribe an effective employee compensation policy for a firm without simultaneously conducting some sort of personal tax planning analysis for employees. Similarly, it is impossible to prescribe an effective capital structure policy for a firm (that is, whether operations should be financed with debt, preferred stock, common stock, or other financial instruments) without simultaneously considering how the returns to prospective lenders and shareholders of the firm will be taxed.

Any tax system that taxes different taxpayers and different economic activities differently gives rise to the pervasiveness of so-called *implicit taxes* and *tax clienteles*. Implicit taxes

correspond to how tax rules affect the *pricing* of assets. The before-tax returns available in the marketplace on tax-favored assets are less than those available on tax-disfavored assets due to competition among taxpayers for the right to hold the assets that receive tax-favored treatment. A simple example of an implicit tax is the reduced yield available on tax-exempt municipal bonds relative to taxable *corporate* bonds of equal risk. Here the reduced yield represents a form of tax that is paid to municipalities rather than to the federal government.

The concept of tax clienteles is closely related to that of implicit taxes. Tax clienteles refer to the fact that because of cross-sectional differences in tax rates, certain taxpayers are more likely than others to own various kinds of assets or to organize production in particular ways. High tax-bracket taxpayers being more likely to hold tax-exempt bonds than low tax-bracket taxpayers is a simple example of a tax clientele.

Wrong-headed public policy *can*, and probably *does*, result from ignoring implicit taxes in considering how tax burdens are distributed throughout the economy. For example, since it is high tax-bracket taxpayers that invest most heavily in those assets bearing low explicit taxes but high *implicit* taxes (like municipal bonds and other tax shelters) the distribution of tax burdens may be *far* more progressive than estimates produced by such places as the Brookings Institution suggest. In the same vein, the corporate sector of the economy may bear much more tax than is evidenced by the size of the checks written to the federal government by corporate treasurers.

For example, when capital-intensive firms are granted generous depreciation allowances, competition for the delivery of goods to consumers results in implicit taxes being paid to consumers and possibly wage earners through a reduction in the price charged for the goods that are sold and possibly through wage increases that must be offered in the labor market. Similarly, when defense contractors are given the opportunity to postpone, for extended periods of time, the payment of taxes on income earned from long-term contracts, competition for the right to win such contracts results in implicit taxes being paid to the Defense Department by way of reduced prices for the winning bids. On the other hand, a precise calculation of implicit taxes is hampered when the market is imperfectly competitive.

If one accepts at face value much of the rhetoric surrounding the passage of the latest round of tax changes, two prominently-mentioned goals were:

- the restoration of tax progressivity at the personal level by eliminating many tax shelter investment opportunities; and
- the reversal of the trend of declining corporate taxes as a fraction of total tax collections.

As for the first goal, the Tax Reform Act of 1986 (TRA) will probably be a big failure although many public policy analysts will interpret the data as providing evidence of success. Why? Because high-income taxpayers will end up writing larger checks to the government in satisfaction of explicit tax liabilities. But they will also be paying substantially reduced implicit taxes as their level of investment in tax-favored activities declines, including investment in qualified retirement savings vehicles.<sup>3</sup> Moreover, even when they do invest in tax-favored activities, the implicit taxes paid by high-income taxpayers will be reduced due to the dramatic reductions in maximum tax rates.

As for the goal of increasing corporate taxation, the TRA will probably be a big success, but for reasons that were unintended. Moreover, the data will probably be interpreted by many public policymakers as providing evidence that corporate tax burdens have been *reduced* for many entities rather than increased. The basis for these claims relates to the fact that when tax regimes change, economic agents are encouraged to effect all sorts of reorganizations of their economic activities. The reason is that changes in tax regime alter *relative* rates across taxpayers, time periods, economic activities, legal organizational forms, and tax jurisdictions. This in turn alters the distribution of implicit taxes that fall on economic activities in the economy, as well as shifts many natural tax clienteles.

So, as tax rules change, economic agents find themselves situated in the wrong clienteles. This occurs, of course, because it is not cost-effective for taxpayers to enter into contracts with one another that specify how property rights will be reallocated for each and every one of the mind-boggling number of future contingencies that may arise. As a related matter, reorganization is costly, and the amount of and nature of the recontracting that follows a change in tax regime is very much a function of the costs of changing from one tax clientele to another. These so-called mobility costs are taxpayer-specific as well as economic activity-specific.

A documentation of the cross-sectional differences in agent's propensities to reorganize in a way different from what would be observed in a frictionless setting could provide important clues

to where transactions costs are most important in explaining observed economic behavior. This represents a tremendous research opportunity, one that can accommodate a large number of investigators. In this regard, Congress did tax researchers a big favor by passing the TRA of 1986. Not only was the level of the tax rates changed, but more importantly, *relative* tax rates were changed dramatically along all five of the dimensions, mentioned earlier, as mattering in tax planning.

To illustrate the reorganization incentives that changes in tax rules provide, let's consider how the TRA of 1986 altered relative tax rates across different legal organizational forms.<sup>4</sup> Prior to the TRA of 1986, the tax on income earned at the corporate level was roughly the same as that on income earned at the partnership or sole proprietorship level for successful businesses. The maximum corporate tax rate was a bit below the maximum personal tax rate, and the second round of corporate tax, that assessed to shareholders when they cash out of their investment, was very low due to favorable capital gains tax rates and favorable capital gains-related tax rules. The new bill not only set the maximum corporate tax rate of 34 percent well above the personal tax rate on high-income individuals of 28 percent, it also raised substantially the *second* round of tax on corporate income. This means that the corporate form of organization has become significantly less attractive from a tax standpoint relative to partnerships than it was under prior law. And partnerships should capture a much larger share of new capital formation if these new rules remain in place. We have already begun to see some evidence of this occurring in the US marketplace, as Joe indicated earlier.

<sup>3</sup>The reduced growth of pension-related instruments is due to a number of current changes and expected future changes in the tax law that make pensions less attractive. Important among these considerations is that most taxpayers appear to expect taxes to be increasing in the future. Such a situation makes qualified pension plans significantly less attractive than when rates are expected to stay the same or decrease. Even if tax rates are expected to remain constant, the liquidity costs that pension plans impose on taxpayers will overwhelm the tax benefits in more cases under the new law than previously, given that the tax benefits are reduced by virtue of lower tax rates.

<sup>4</sup>For further discussion, see Scholes and Wolfson [1988].

Of course, one *caveat* must always be kept in mind. As with most of the other reorganization incentives provided by the new tax bill, transactions costs will dampen the effect. Reorganization of business activity is costly. Beyond this, it is naïve to view the new tax rules as a steady-state set of rules. For example, we have read much of late about proposed legislation to have publicly-traded partnerships taxed as corporations.

Given that transactions costs associated with converting existing corporate activity into partnership form may well be prohibitive for most corporate activity, corporations will be led to alter their investment and financing strategies in ways that move them closer to *de facto* partnership taxation. The general approach here is to seek out ways in which to have corporate income taxed only once to the suppliers of capital. One way to do this, especially in owner-managed firms, is to increase employee compensation so that a higher fraction of profits are paid out as tax-deductible compensation rather than *non* tax-deductible dividends or *non* tax-deductible capital gains distributions through share repurchases.

Another way to do this is by issuing more debt and repurchasing equity. As discussed more fully below, despite the decline in corporate tax rates, and contrary to what we often read in the business press, it is straightforward to show that the effect of the new tax bill is to encourage *increased* reliance on corporate borrowing as a means of financing. As with compensation, interest payments are deductible to the corporation, so the profits that go to the suppliers of capital escape taxation at the corporate level. The result is the same as if the corporation had

converted partially to a partnership form of organization for tax purposes. And while this opportunity to achieve *de facto* partnership tax treatment by issuing debt also existed prior to enactment of the TRA of 1986, it was of no importance since corporate taxation was neutral at that time. Putting together these two ways of moving towards partnership taxation without making a *legal* change in organizational form leads one to predict an increase in leveraged buyouts of corporations by employees.

So under the new tax bill, corporations probably will *not* pay a higher fraction of explicit taxes, contrary to the apparent intent of the bill. Not only will corporations seek to rearrange their asset and capital structures in ways to avoid the corporate-level tax, but the new bill also discriminates against funding capital expansion in corporate form. As such, the corporate sector is likely to grow at a slower rate than the non-corporate sector of the economy. On the other hand, the *shareholder*-level tax will increase substantially under the new bill, and these are taxes that are properly attributable to the corporate sector of the economy.

The examples just discussed were meant to provide some support for the claim that policy-makers could benefit considerably from a microeconomic model of tax planning. Much work remains to be done in the development and testing of such a model, and the TRA of 1986 provides a wonderful laboratory that should help to advance research progress considerably. I hope that some of you will join the effort. There is plenty of room, whether your comparative advantage is in modeling, empirical research, or mastery of institutional detail.

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