

This PDF is a selection from an out-of-print volume from  
the National Bureau of Economic Research

Volume Title: The Income Tax Burden on Stockholders

Volume Author/Editor: Daniel M. Holland

Volume Publisher: Princeton University Press

Volume URL: <http://www.nber.org/books/holl58-1>

Publication Date: 1958

Chapter Title: Conceptual Framework and Plan of the Book

Chapter Author: Daniel M. Holland

Chapter URL: <http://www.nber.org/chapters/c2606>

Chapter pages in book: (p. 19 - 28)

## CHAPTER 1

# Conceptual Framework and Plan of the Book

FOR understanding the results of this study and appreciation of the qualifications attached to the findings, the reader needs at the outset a brief explanation of the statistical procedures used and of the conceptual framework which underlies the whole report. In this chapter a brief explanation of methods and concepts is developed to show how the findings were derived, while the discussion of the findings in the next two chapters will serve to elaborate the bare structure and emphasize its limitations. A detailed exposition of the sources and procedures appears in Appendix B.

### INITIAL STATISTICAL PROCEDURES

All the data are from *Statistics of Income*, the annual Internal Revenue Service (formerly Bureau of Internal Revenue) tabulations from federal income tax returns—Part 1 for individuals, Part 2 for corporations.

The calculations are limited to double-taxed stockholders, i.e., dividend recipients who had some personal income tax liability. They do not cover, therefore, dividend recipients who were not subject to the personal income tax because of income below the minimum or specifically exempt (e.g. non-profit organizations); nor do they include stockholders who did not receive dividends in a particular year. Moreover the investigation is concerned only with individuals, and omits fiduciaries (trusts and estates) subject to personal income tax.

The initial objective of the statistical procedures was the development of a distribution of stockholders' income, including in income their full pro rata share of pre-tax corporate earnings.

The starting point was the *Statistics of Income* tabulation that cross-classifies dividend recipients by the size of their adjusted gross income and their dividend receipts.<sup>1</sup> In this array, for example, appears

<sup>1</sup> Adjusted gross income is picked off tax returns for tabulation in *Statistics of Income*. Bear in mind that throughout the book this term connotes a specific definition of income. The "gross" in its title is misleading since it is essentially a net income concept. In general it is defined as the sum of net income from all sources (including only 50 per cent of long-term capital gains and excluding interest on state and local securities and certain other types of income) before personal deductions and exemptions. More particularly, it is defined "as gross income *minus* allowable trade and business deductions, expenses of travel and lodging in connection with employment, reimbursed expenses in connection with employment, de-

## CONCEPTUAL FRAMEWORK

one entry for stockholders (dividend recipients) with adjusted gross income of \$4,000 and under \$5,000 of which up to \$100 is dividends, another for those in this same income class with dividend receipts of \$100 and under \$200, etc. In all, there are 225 such cells. For each cell the average adjusted gross income was obtained by assuming it to be the same for dividend recipients as for all taxpayers; dividends per stockholder were estimated in each cell by using the mid-point as a first approximation and then adjusting for consistency with the total reported for each income class in *Statistics of Income*.<sup>2</sup>

Next aggregate net earnings and dividends for all corporations were computed, and the difference between earnings and dividends determined.<sup>3</sup> The ratio of this difference to total dividends was used as a "blow-up" factor which, when applied to dividends, provided the necessary addition to the average adjusted gross income in each stockholder cell to arrive at imputed gross income, i.e., stockholders' income defined to include their full pro rata share of net corporate earnings.<sup>4</sup>

Then, the income data were rearranged in 15 imputed gross income classes. For each class the average imputed gross income and the fraction representing net corporate earnings were computed. From a plot of these values we read off the proportion represented by net corporate earnings at selected imputed gross income levels, some 19 in all, ranging from \$1,000 to \$500,000.

---

ductions attributable to rents and royalties, deductions for depreciation and depletion allowable to life tenants or to income beneficiaries of property held in trust, and allowable losses from sales of property." (*Statistics of Income for 1950*, Part I, p. 7.)

<sup>2</sup> In this brief description a number of specific features of the method are not spelled out. For example, the dividend component of income reported by individuals as income from estates and trusts was estimated. Details of the procedure will be found in Appendix B.

<sup>3</sup> Aggregate net earnings (generally called net corporate earnings in this study) is the algebraic sum of the net income of income corporations and the deficits of loss corporations. It is the sum, therefore, of dividends, net retained earnings and corporate taxes (normal and surtax and excess profits tax where applicable).

<sup>4</sup> The excess of net corporate earnings over dividends was used in deriving this multiplier because dividends are already included in adjusted gross income. Implicit in the procedure is the assumption that, on average, for stockholders in every one of our income-dividend size cells the pay-out ratio (i.e., the ratio of their dividend receipts to the earnings of the corporations which paid them) was the same. For an explanation of why this seemingly strong assumption may be reasonably accurate see W. L. Crum, "The Taxation of Stockholders," *Quarterly Journal of Economics*, February 1950, p. 26. As Crum points out, in the lower income-dividend size cells, the few securities held by each of the large number of dividend recipients would, for the group as a whole, average out to a "representative" portfolio; despite the small number of stockholders in the upper income-dividend cells, the same result would be likely because most would possess portfolios of wide variety and coverage.

## CONCEPTUAL FRAMEWORK<sup>5</sup>

These data provided the basic material for investigation of our problem—the extent to which stockholders were differentially taxed during the period under study. Four measures, each focusing on a particular aspect of the problem, were used.

### *Differential against Earnings for Distribution*

First to be examined is the alleged double taxation of distributed earnings. In this connection the relevant component of stockholder income is not dividends which are net of the corporate tax. Rather, in estimating the reduction in potentially disposable income caused by this tax, we must work with the pre-tax equivalent of distributed earnings, to which we give the title of earnings for distribution. Assuming for simplicity a corporate tax rate of 50 per cent, then for every dollar of dividends paid out, corporations must earn two dollars. If a given "average" stockholder, therefore, has \$100 of dividends, the earnings for distribution component of his income will be \$200. The difference between earnings for distribution and dividends measures the corporate tax on the distributed segment of net corporate earnings. To this is added the personal income tax on dividends (considered an increment to the stockholder's taxable income from other sources) to obtain the total income tax actually levied on earnings for distribution.

But this does not measure the differential tax load. For, relating the corporate tax to the income status of the taxpayer means that the personal income taxpayer is not deprived of an amount of potential income equal to the corporate tax payment on earnings for distribution. Had this sum been paid to him instead of to the government, it would have been taxable as personal income. So it is only the difference between the corporate tax and the product of the corporate tax multiplied by the marginal rate of personal income tax that represents the extra burden on stockholders' earnings for distribution.<sup>6</sup> For example, with the corporate rate at 50 per cent, every dollar of

<sup>5</sup> The main outlines of this conceptual framework are not novel. In setting it up, I have drawn on the work of previous investigators, in particular Richard B. Goode and W. Leonard Crum:

Richard B. Goode, *The Corporation Income Tax* (Wiley, 1951) and *The Postwar Corporation Tax Structure*, (Treasury Dept., Division of Tax Research, 1946).

W. L. Crum, "The Taxation of Stockholders" (*Quarterly Journal of Economics*, February 1950).

In addition, I have benefited greatly from the comments of both Goode and Crum on an earlier draft of this manuscript.

<sup>6</sup> Goode, 1951, *op. cit.*

## CONCEPTUAL FRAMEWORK

earnings for distribution bears a 50 cent corporate tax, but had this 50 cents been paid to stockholders it would have represented something less than a 50 cent addition to their personal income after tax. If the relevant marginal rate is 20 per cent, the deprivation due to the corporate tax will be 40 cents; if the potential marginal rate is 90 per cent, the corporate tax causes a loss of potential disposable income of only 5 cents. So the potential personal income tax on earnings for distribution is computed and subtracted from the actual combined corporate-personal income tax on that component of stockholder income to find the net extra burden on the distributed portion of net corporate earnings. For comparison among income levels and between years, the absolute extra burden was converted to an incremental effective rate by taking it as a percentage of the earnings for distribution component. We call this measure the differential against earnings for distribution.

The derivation of the measure may be summarized symbolically as follows. (For simplicity, all rates and differentials are expressed as ratios.)

$C_e$ <sup>7</sup> = effective rate of corporate tax on earnings for distribution

$D$  = dividends received

$E$  = earnings for distribution;  $E - C_e E = D$

$P$  = applicable marginal rate of personal income tax

$N_e$  = absolute extra burden on earnings for distribution

$\frac{N_e}{E}$  = differential against earnings for distribution

Then

$$\begin{aligned} N_e &= PD + C_e E - PE \\ &= PD + C_e E - (PD + PC_e E) \\ &= C_e E - PC_e E \\ &= C_e E (1 - P) \\ \frac{N_e}{E} &= C_e (1 - P) \end{aligned}$$

Since  $P$  rises as stockholder income rises but never reaches 100 per cent, the differential against earnings for distribution is a declining function of stockholders' income, but always positive. In relation to the distributed segment of net corporate earnings, then, the corporate tax constitutes a burden that is always smaller than its face amount, a burden that varies inversely with the level of stockholders' income. But this is only part of the story.

<sup>7</sup> The lower case form of the symbol is used to designate the particular tax rates and liabilities associated with corporate earnings and each of its components.

## CONCEPTUAL FRAMEWORK

### *Differential against Earnings for Retention*

There still remains for consideration the undistributed segment of net corporate earnings—earnings for retention, or the remainder of net corporate earnings after subtraction of earnings for distribution. Following the logic of the procedure in connection with the distributed portion, we compute the corporate tax on earnings for retention and compare it with the hypothetical personal income tax on that component of corporate earnings. The difference between these two tax liabilities is the measure of the net extra burden. This extra burden, taken as a percentage of earnings for retention, is designated the differential against earnings for retention.

Add to the symbols listed above:

$R$  = earnings for retention

$C_r$  = effective rate of corporate income tax on earnings for retention  
(This is higher than  $C_e$  because earnings for retention are net of deficits reported by loss corporations.)

$N_r$  = absolute extra burden on earnings for retention

$\frac{N_r}{R}$  = differential against earnings for retention

Then

$$\begin{aligned} N_r &= C_r R - PR \\ &= R(C_r - P) \end{aligned}$$

$$\frac{N_r}{R} = C_r - P$$

It is apparent that the differential against earnings for retention can be positive, zero, or negative depending on the relative heights of  $C_r$  and  $P$ . With  $C_r$  invariant on stockholders' income and  $P$  a rising function thereof, the differential will be a declining function of stockholders' income, and at some point in the income scale, if  $P$  is high enough, the differential will become negative. (Note that because the personal income tax rate schedule is progressive, the  $P$  that applies here is higher than the one in the differential against earnings for distribution formula.)

### *Differential against Net Corporate Earnings*

The combination of the two measures just discussed provides us with the composite or net result—the differential against net corporate earnings which, with corporate earnings equal to the sum of earnings for distribution and earnings for retention, is a weighted average of the differential against each of these components of net corporate earnings.

## CONCEPTUAL FRAMEWORK

Add to the symbols listed above:

$T$  = net corporate earnings =  $E + R$

$N_t$  = the absolute extra burden on net corporate earnings

$\frac{N_t}{T}$  = the differential against net corporate earnings

Then

$$\begin{aligned} N_t &= N_e + N_r \\ &= C_e E (1 - P) + R (C_r - P) \end{aligned}$$

Since

$$T = E + R$$

$$\frac{N_t}{T} = \frac{N_t}{E + R}$$

$$= \frac{C_e E (1 - P) + R (C_r - P)}{E + R}$$

$$= C_e (1 - P) \left( \frac{E}{E + R} \right) + C_r - P \left( \frac{R}{E + R} \right)$$

The differential against net corporate earnings will, of course, have the same characteristics as its components. The higher the proportion of earnings for retention to total corporate earnings, the closer  $N_t/T$  lies to  $N_r/R$ . Further since both its components behave in the same way on this score, it will be a declining function of stockholders income. Also, after a point  $N_r/R$  can (and in most years of this study did) weigh so heavily that  $N_t$  will turn negative—i.e., an income tax differential in favor of net corporate earnings will exist at the higher income levels.

With this differential we can answer the question: how much more (or less) heavily were corporate earnings actually taxed than they would have been if subject in full to the personal income tax alone?

### *Differential against Stockholders' Income*

One more measure has been used in our analysis. By relating the extra burden to the total income of stockholders, we obtain the differential against (or in favor of) stockholders. It enables us to answer the question: how much more heavily, measured in terms of effective rates, were stockholders actually taxed on the whole of their income from all sources by the combined corporate-personal income tax system than they would have been with the corporate tax abolished and their pro rata share of net corporate earnings subject fully and promptly to the personal income tax?

## CONCEPTUAL FRAMEWORK

Add to the symbols listed above:

$S$  = imputed gross income of stockholders

$O$  = stockholders' income from sources other than net corporate earnings =  $S - T$

$\frac{N_t}{S}$  = differential against stockholders

$S = T + O$

$N_t$  — the extra burden on net corporate earnings—is also the extra burden on stockholders, since it is only on the corporate earnings component of their income that stockholders are differentially taxed. Therefore:

$$\frac{N_t}{S} = \frac{N_t}{T + O}$$

With  $O$  positive, the differential against stockholders lies below that against net corporate earnings.<sup>8</sup> But, since the only difference is in the denominator, the smaller the value for  $O$ , i.e., the larger the proportion of  $T$  in  $S$ , the closer  $N_t/S$  to  $N_t/T$ . Thus, as we shall see, at the lower stockholder income levels, the two measures diverge considerably; near the top of the income scale, however, they lie very close together. This is a reflection of the fact that, except for the lower portion of the income range, the proportion of  $T$  to  $S$  is a rising fraction reading up the array of stockholder incomes.

### *Three Variants*

One problem in our conceptual framework still remains for consideration. As described, the actual tax load on earnings for retention consists simply of the corporation income tax, and the extra burden on this segment of corporate earnings is measured as the difference between the corporate tax and the hypothetical personal tax. This measure is designated variant 1 of our standard method. Values of the differentials against earnings for retention (and of the differentials against net corporate earnings and stockholders, in whose derivation this measure of the extra tax burden on earnings for retention is employed) we call variant 1 values. Variant 1 is a clear-cut measure that tells us for a given year how much more (or less) income tax stockholders paid on their pro rata share of earnings for retention than would have been due if this income share had been subject promptly and in full to the personal income tax alone. But it leaves out something.

<sup>8</sup> Of course, when the differentials have negative values this means that the absolute value of the former is the lower, i.e., the differential against stockholders is less negative.



## CONCEPTUAL FRAMEWORK

For it can be argued that some portion, at least, of retained earnings would show up as capital gains, and that some of these capital gains would be realized by stockholders in taxable form. Thus, because of current retentions, sometime in the future an additional tax liability would be incurred. Therefore variant 2 was developed. Under variant 2, in measuring the tax load on earnings for retention a term, explained below, was added to represent the present value of the future capital gains tax on the undistributed earnings of a given year. Unless otherwise specified it is the variant 2 values that are used throughout this study.

To make such an adjustment with precision is impossible, however. Too many factors about which little is known are involved. To what extent do retained earnings show up in share prices? What proportion of resulting capital gains is realized, and of this what fraction shows up in taxable form? Our adjustment, therefore, is arbitrary but reasonable in the sense that it is in the right direction, and that substantial changes in the assumptions used in its derivation would lead to only slight changes in the size of the estimated additional tax liability on earnings for retention.

Briefly, variant 2 incorporates an additional tax liability on stockholders—a capital gains tax—determined on the assumptions that for each dollar of retained earnings share prices rose by 72 cents, and that two-thirds of these increments in the value of stock were realized in taxable form at an even rate over a five year period. The adjustment for the future capital gains tax liability enters as an additive term in  $N_r/R$ ,  $N_t/T$ , and  $N_i/S$ .

But it might be argued that this adjustment does not go far enough. For one assumption used in the variant 2 estimate is that stock prices rose by only 72 per cent of reinvested earnings, or that 28 cents of every dollar of retained earnings failed to show up in enhanced stock values. Apparently, then, when earnings are reinvested rather than paid out, stockholders lose 28 cents per dollar of such earnings. Should not this be considered a deprivation and, while not a formal tax, should it not be taken into account in estimating the extra tax load on earnings for retention? Despite good grounds for answering this question in the negative, and because the matter is debatable, variant 3 was developed. Very simply, in addition to the corporate tax and the present value of the future capital gains tax due to reinvested earnings, variant 3 includes the present value of this 28 cent loss as part of the tax on earnings for retention. This adjustment affects  $N_r/R$ ,  $N_t/T$ , and  $N_i/S$ , making them higher than the variant 2 values which, in turn, of course, exceed the variant 1 values of the

## CONCEPTUAL FRAMEWORK

differentials. (An amplified description of the procedures used under each of the variants and an indication of how much the values differ will be found in Chapter 2.)

But variant 3 seems to cover too much. For there is a difference between a tax and the reduction in potentially disposable income caused by the failure of corporations to distribute fully. The latter lacks the strong element of compulsion that characterizes a federal tax levy. Stockholders are not forced to acquiesce in corporate distribution policies. They can press for fuller distribution by the companies whose shares they hold; or acquire shares in corporations whose policy it is to distribute most of their earnings; or make other kinds of investments. On this reasoning variant 2 was selected as superior. Variant 3 goes too far; variant 1 not far enough.

There are additional grounds for doubting the relevance for our study of the adjustment that distinguishes variant 3. While an attempt to explain the failure of reinvested earnings to be reflected fully in share prices lies beyond the scope of this study, grounds for considering the variant 3 adjustment unwarranted are suggested by several plausible explanations. To William Vickrey the failure "argues either that the directors of the corporation have disposed of the undistributed earnings adversely to the interests of the stockholders or that the reinvestment has been made on the basis of information not shared by investors in general."<sup>9</sup> In either event, it appears that the loss may not be properly considered as an additional levy on stockholders. It seems more appropriate to attribute the loss to errors in judgment on the part of management. Such errors affect the income of shareholders in corporations that distribute earnings in full and also of those who, as owners of noncorporate business enterprises, are subject to the personal income tax. These taxpayers do not profit from any special tax law solicitude, except that because of their losses the capital gains they report may be smaller or the capital losses they deduct may be larger. An estimated overall loss on this account is taken into account by the variant 2 adjustment which reckons the future capital gains as 28 per cent less than they might have been.

Another possible explanation of the 28 cent attrition in capital value for every dollar of reinvestment may be the fact that standard accounting or tax law determinations of net income regularly result in overstatement. These determinations may fail to allow for competitive obsolescence, i.e. the degree of capital destruction caused by shifts in demand and changes in techniques of production, and do not, as a rule, take account of the higher cost of maintaining inven-

<sup>9</sup> William Vickrey, *Agenda for Progressive Taxation*, Ronald, 1947, p. 150.

## CONCEPTUAL FRAMEWORK

tories and replacing depreciable assets when price levels rise (except in the case of inventories for those corporations that use Lifo). Considerations of this sort, however, do not validate the variant 3 adjustment for our purposes, for the definition of income in our benchmark, the personal income tax system, is similarly "shortsighted," also failing to take account of these factors. So it may be concluded that on this score no special adjustment is required in the method.

While, for the reasons cited, variant 2 is preferable and is generally used in the text discussion, in recognition that, to some extent at least, the matters at issue are fuzzy enough to give rise to questions of taste as well as of logic, the differentials based on all three variant measures of the extra burden on earnings for retention have been computed for every year of the study and are tabulated in Appendix A. It will be noted, however, from an examination of these data that our argument remains basically the same no matter which variant is judged to be most appropriate; the pattern of the differentials is the same for all three variants.

## ORGANIZATION OF THE BOOK

It is hoped that the description of the procedures and concepts which underlie the whole study will serve for quick reference as the reader follows the detailed findings presented and discussed in the chapters that follow. In each, the limitations of the available data and the shortcomings of the findings are made explicit.

Chapters 2 and 3 approach the problem by discussing detailed quantitative findings. Chapter 4 examines the effects on the findings of some assumptions and procedures alternative to those used in our standard method.

The scene shifts in Chapter 5 to a consideration of the question of the progressivity effect of the corporation income tax. Chapter 6 is concerned with the effects on federal tax revenue and on distribution of stockholder income of the two types of tax structure which have been compared at other points in the study. Aggregate rather than average differential taxation of stockholders is computed by the existing system of corporate taxation and by a system which would extend to stockholders the tax treatment now applied to members of a partnership.

Chapter 7, on the basis of our findings, analyzes the provisions of the Internal Revenue Code of 1954 designed for relief of stockholders from double taxation. A brief summary of the findings is given in Chapter 8. Appendix A contains tabular summaries of the differentials; Appendix B sets forth particular features of the method in detail.