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CORPORATE TAXATION IN THE UNITED STATES: THE POST-WAR EXPERIENCE

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WORKING PAPERS FOR THE INDIV PROJECT

(B) GREGORY I. NORTH

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CORPORATE TAXATION IN THE UNITED STATES:
THE POST-WAR EXPERIENCE

A WORKING PAPER FOR:

THE INDIV PROJECT

Director: J. C. R. Rowley

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G. I. North

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J.C.R.R.

The area of corporate taxation has stimulated a great deal of debate in both academic and political circles. On the political side, there have been those who argue that a corporation is only a legalistic creation and should not be regarded as a "flesh-and-blood" person.[1] Thus it should be completely immune from any taxation, since the revenues that a government collects should be only from the income or material wealth of its citizens. On the academic side, writers have criticized corporate taxation both in its entirety because it may lessen competition in the economy and in specific areas where it is viewed to be ineffective or inefficient in terms of some conceptual or "perfect" model.

Before an adequate analysis and empirical investigation of the effects of corporate taxation can be undertaken, and before useful proposals for changes in the tax structure can be offered, it is necessary that a relatively comprehensive knowledge be attained of the present structure. The purpose of this paper is to provide such an exposition for the United States with particular emphasis upon the post-World War II period. As much of the following is simple a survey of tax changes, it will appear in "point-form" for the ease of comprehension and reference which results. No attempt will be made to interpret the possible effects of individual changes, nor will the author attempt to rationalize the reasons for these changes. Indeed, such an attempt is felt to be largely superfluous and arbitrary to this author under any circumstances.

This paper shall be concerned only with Federal taxes on

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1. Cf. W.A. Paton, Corporate Profits, Homewood, Ill.: Richard D. Irwin, Inc., 1965, chapter 1.

corporations, although it is recognized that the system of dual sovereignty has raised questions of constitutionality in taxation areas between the Federal and state governments. A result of this has been the developing importance of the judicial branch of government in the taxation field, along with the legislative branch, as an interpretive body of no small significance.[2]

It may be useful for the reader to consider three general principles which it is asserted should be of importance when changes in taxation policies are under consideration. These principles are:[3]

(1) taxes should impose the least possible restriction upon enterprise, production and employment;

(2) taxes must be adequate for revenue purposes;

(3) taxes must be equitable.

The second and third principles may well be viewed as constraints upon the achievement of the first, although conflicting policies will not necessarily be produced.

The corporation excise tax of 1909 embodied the "dominant view of the corporation in the United States tax structure"[4] and was an excise tax on income. The "temper" of the nation was such that the corporation was viewed in a harsh manner as controlling great wealth and, in some "evil" way, as preventing the continuance of the Horatio Alger myth, on which many American dreams and lifestyles were (and are) based.

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2. R.N. Corley and R.L. Black, The Legal Environment of Business, New York: McGraw-Hill, 1963, chapter 8.

3. E.G. Keith, "Repercussions of the Tax System on Business" in K.E. Poole (ed.), Fiscal Policies and the American Economy, New York: Prentice-Hall, Inc., 1961, p. 322.

4. W.L. Raby, The Income Tax and Business Decisions, Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1964, chapter 3.

The Revenue Act of 1913 carried over the essential features of the excise tax on corporate income and merged it with the income tax[5] (the imposition of which was allowed by the Sixteenth Amendment to the Constitution in 1913).

The corporation income tax[6] produced more revenue than the individual income tax in seventeen of the twenty-eight years prior to 1941. In the post-war period, it has been the second largest source of federal government revenues, accounting for 20 to 22 percent of these cash receipts.

Some Provisions to Note

With the exception of the deduction for charitable contributions, the deductions allowed under the corporation income tax are confined to expenses incurred in doing business. However, this is not to imply that this tax is a simple instrument -- indeed it is complicated by the necessity of applying it to a wide variety of firms doing business in a corporate form. Although a more detailed presentation of corporate taxation policy in the United States will be presented later in this paper, a number of significant provisions of the present tax structure will be noted here.

1. Capital gains realized on assets held more than six months are taxed at a maximum rate of 25 percent. Corporations are allowed to offset capital losses only against capital gains, with any remaining losses carried forward for five years to be offset against capital gains in future years.

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5. Ibid.

6. Much of the following discussion is based on an excellent and concise analysis by J. A. Pechman, Federal Tax Policy, Washington, D.C.: The Brookings Institution, 1967, chapter 5 ("The Corporation Income Tax").

2. Net operating losses may be carried back and offset against taxable income of the three preceding years. In effect, this provides a nine-year period for offsetting losses against gains.

3. Generous provision is made for recovery of capital. In the case of plant and equipment, the original cost may be amortized over the useful life of the asset. New depreciation methods were permitted by the Internal Revenue Code of 1954, in particular the double-declining-balance and the sum-of-the-year-digits methods, both of which result in larger depreciation allowances in the early years of an asset's life than under those produced by use of the straight-line method.[7] In addition to depreciation, an investment credit of 7 percent against tax liability was enacted in 1962 for purchases of new equipment, excluding buildings. For minerals and gas and oil, the law allows deductions for exploration, discovery, and depletion which often exceed the cost of the mine or oil or gas fields.

4. All current outlays for research and development may be deducted in full in the year they are made. Taxpayers may elect to capitalize such expenditures and, if regular depreciation cannot be used because the useful life cannot be determined, the expenditures may be written off over a period of five years.

5. Intercorporate dividends paid by one corporation to another are subject to tax at a relatively low rate. Corporations are allowed to deduct 85 percent of the dividends they receive from other domestic corporations[8] -- resulting in intercorporate dividends being subject to an extra

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7. N. B. Ture, Accelerated Depreciation in the United States: 1954-60, New York: National Bureau of Economic Research, 1967, (see introductory chapter).

8. Op. cit., Raby, chapter 3.

tax of 7.2 percent (the regular 48 percent rate multiplied by 15 percent). The tax on intercorporate dividends is waived, however, if the two corporations are members of a group of affiliated corporations claiming only one surtax exemption.

6. Corporations are subject to United States tax on foreign as well as domestic income. Income received from foreign branches is included in the corporation's tax return in the year it was earned. Credit, however, is allowed against the domestic tax for foreign income taxes paid on earnings and dividends received from abroad. A reduction in the corporation income tax of 14 percentage points is granted to domestic trade corporations conducting 95 percent of their business outside the United States, but in the western hemisphere.

7. Corporations with no more than ten shareholders may elect to be treated as partnerships for tax purposes.

TAX RATES

Since corporations do not have "ability to pay" in the same sense as individuals, the corporation income tax is levied at a flat rate on most corporate incomes. As a concession to small business, a lower rate is applied to the first $25,000; the remainder is taxed at one rate.

In 1967, the corporate tax consisted of a 22 percent normal tax and a 26 percent surtax, with an exemption of $25,000 for the surtax only. Thus, the combined rates were 22 percent on the first $25,000 and 48 percent on the excess over $25,000. Roughly 88 percent of the corporate taxable income was subject to the 48 percent rate. (See Appendix - Table 1).

TAX PAYMENT

Corporations, until 1950, paid their tax in four installments in the year following the tax year. In 1950 and over a period of five years payments were gradually shifted to two installments to be paid in the first six months of the year following the tax year.

Further acceleration of corporation tax payments was legislated in 1954. After another transition of five years, corporations were required to pay half of their estimated tax over $100,000 in September and December of the tax year, and the remaining liability in two installments in March and June of the following year.

The final step to place corporations on a current payment basis were taken in 1964 and 1966. After an additional transition of four years (originally seven years under the 1964 legislation, corporations pay their estimated tax (in excess of 100,000) in four installments in the current year. (see Appendix: Table 2).

Numerous changes have thus been made in the structure of the corporation income tax since the end of World War II.[9] Foremost among these have been the liberalization of depreciation and the addition of the investment credit to encourage investment. Revisions have also been made to prevent tax avoidance by tax-exempt organizations, mutual financial institutions, and cooperatives.

Before proceeding to a more detailed list of taxation changes for corporations after World War II, it may be of some use to note the

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9. Op. cit., Pechman, p. 140.

climate of opinion caused by the major tax changes precipitated by the war.[10] At the conclusion of the war, tax reform was discussed within the framework of a substantial tax reduction. The war had brought about three major changes in the Federal tax system:

(1) The individual income tax was converted into a mass tax, based largely on collection at the source of wages and salaries with a relatively high initial rate and a relatively steep progression of bracket rates.

(2) The corporate income taxes were increased sharply. Besides serving as a convenient revenue producer, the taxes on corporate profits and especially on excess profits during wartime were a necessary condition for even a modest degree of wage control.

(3) The rates of excise taxes were increased and a great variety of goods was added to the list of taxable products largely as a means of discouraging the use of less essential peacetime goods and services during wartime scarcity.

Each of these significant changes in the tax structure were points of consideration in the period immediately after hostilities had ceased. The first change, dealing with the individual income tax, was made to a large degree a permanent feature of the structure. However, the development of the corporate tax as a separate and permanent tax source was, and is,

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10. Much of the brief discussion which follows is based on an article by Gerard Colm, "The Role of Income Taxes in the U.S. Tax System and The Scope of Tax Revision", in Tax Revision Compendium, submitted to the Committee on Ways and Means; Washington: United States Government Printing Office, 1959, pp. 169-180.

regarded with uneasiness:

> If one believed that the corporate tax could not be shifted, it appeared to place a discriminating burden on one kind of income; namely, dividends. If one believed the tax would be shifted, it appeared to be a kind of sales tax -- but imposed only on the sales of corporations and not on business in general. Thus, it appeared that the corporate income tax as a separate tax besides the individual income tax had no logical place in the tax system.[11]

However, the alacrity with which the corporate tax was opposed immediately following the war has lessened considerably, leading to debates on and urgings for technical and detailed alterations, rather than wholesale removal of the tax. As one author confidently asserted, "a tax on corporation profits is likely to be a major federal revenue source for a long time to come".[12]

During World War II, due to increases in corporate income tax rates, the imposition of an excess profits tax, and the expansion of economic activity, corporate taxes yielded about one-third of total federal receipts.[13] After the war, corporate tax rates and yields fell but increased again in response to the Korean emergency. In the postwar period, receipts from corporate taxes have usually ranged from one-half to two-thirds of receipts from the individual income tax (see Appendix: Table 3).

Corporate taxes have been an elastic and highly productive source of revenue. Rates have been adjusted to changing needs. Corporation

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11. Ibid., p. 170.

12. Op. cit., Pechman, p. 98.

13. Richard Goode, "Corporation Income Tax Rates", in Tax Revision Compendium, submitted to the Committee on Ways and Means, Washington, D.C.: United States Government Printing Office, 1959, p. 2281.

profits, which are the base of the tax, have been highly responsive to the secular growth of national production as well as to cyclical fluctuation in activity.

We now proceed to a more detailed enumeration of the major tax alterations affecting corporations in the post-war period.[14] Since the provisions of the Internal Revenue Code of 1939 as amended by the Revenue Act of 1945 continued in effect for the calendar year 1949 and fiscal years ending in the period July 1948 through June 1949, the study will begin with the changes implemented by the government in 1950.

The Revenue Act of 1950 increased corporate income tax rates for the calendar year 1950 to 42% (a normal tax rate of 23% and a surtax rate of 19% applicable to net income in excess of $25,000) from 38% in 1949; and for taxable years beginning after June 30, 1950, the Act increased the rates to 45% (with a normal tax rate of 25% and a surtax rate of 20%).

The Excess Profits Tax Act of 1950 imposed a tax at the rate of 30% on excess profits. The maximum combined rate for 1950 was 57% (23% normal, 19% surtax, and approximately 15% upon that part of the income representing excess profits) and the ceiling rate was approximately 52%.

The Revenue Act of 1951 increased the normal tax rate from 25 to 30%; made the surtax rate 22%; and made provision for an 18% ceiling on excess profits tax. For large corporations subject to the general combined normal and surtax rate of almost 52%, the new ceiling amounted

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14. The primary source of the following is Statistics of Income: Corporation Income Tax Returns, an annual publication of the United States Treasury Department, Internal Revenue Service, Washington, D. C.

to approximately 70%. The maximum rate on long-term capital gains was increased from 25% to 26%.

The next principal change in the Federal tax structure was the termination of the excess profits tax on December 31, 1953. The tax rate on adjusted excess profits net income was 30%, and was effective fully for all 1953 returns but not for any part of 1954. Also, the Technical Changes Act of 1953 provided a special amortization deduction to alleviate what was a critical shortage of facilities for storing grain. It permitted complete amortization over a period of 60 months in lieu of depreciation over the life of the facility.

A major development in the corporate tax field occurred with the enactment of the Internal Revenue Code of 1954 which, on August 16, 1954, superseded the Code enacted February 10, 1939. The more important changes in revenue law brought about this legislation will be summarized.

Turning first to income and excess profits taxes, the normal tax rate of 30% and the surtax rate of 22% on income in excess of $25,000 were unchanged. The maximum tax on long-term capital gains was reduced from 26% to 25% for taxable years beginning on or after April 1, 1954. The deductions for dividends were now not subject to the limitation based on net income if the sum of the dividend deductions was greater than the net income.

The 1954 Code removed any limit on the credit against income tax which might result from foreign losses when operations are carried on in more than one foreign country.

For tax purposes, a net operating loss can be used to reduce

taxable income of certain preceding and succeeding tax years. Under the 1939 Code a loss could first be carried back one year and then forward 5 years. The 1954 Code extended the carryback period to two years. Tax-exempt interest and depletion adjustments were abolished, and dividend deductions were made fully effective.

With regards to depreciation, the 1954 Code specified four methods of measurements which may be used in determining a reasonable depreciation allowance for tax years ended after December 31, 1953. These are:

(a) the straight line method -- used under prior law, which may be used for any property and, in general, results in equal annual deductions over the life of the property.

The next three specified methods of depreciation may be used only for new tangible property with a useful life of 3 years or more. These accelerated methods permit the write-off of a large portion of the cost or other basis of new property in the early years of its life, about 40% during the first quarter and about two-thirds during the first half of estimated service life.

(b) the declining balance method -- depreciation is computed by applying a uniform rate, not exceeding two times the applicable rate under the straight line method, to the cost or other basis of the property reduced by the amount of depreciation allowed in prior years.

(c) the sum-of-the-years-digits method -- the cost or other basis, reduced by estimated salvage, is multiplied by a changing fraction. The numerator of the fraction changes each year to a number corresponding to the remaining useful life of the asset. The denominator remains

constant and equals the sum of all the years' digits corresponding to the estimated useful life of the asset.

(d) any other consistent method -- which does not result, at any time during the first two-thirds of the useful life of the property, in an accumulated allowance greater than the amount allowable for the same period under the declining balance method above.

Under the 1954 Code research and experimental expenditures could either be treated as ordinary business expenses, deductible in the year incurred, or capitalized. The Code provided, for the first time, a method of charging off capitalized research and experimental expenditures which could not be recovered through depreciation or depletion -- such expenses could be deferred expenses subject to amortization over a period of not less than 60 months beginning with the first month that benefits from the expenditure is realized.

Several other changes, pertaining to exploration expenditures, conservation expenditures, pension funds and personal holding companies were activated by the enactment of the 1954 Code. These particular areas will not be discussed in this paper.

The provisions of the 1954 Code remained substantially unaltered for some time, although some relatively minor alterations were introduced in various years. The first was a new departure in the taxation of small business in subchapter S of chapter 1 added to the Internal Revenue Code by the Technical Amendments Act of 1958. Under this subsection, certain corporations could forego payment of corporate income tax if all shareholders consented to the taxation of corporate profits at the shareholder

level. Owners of small businesses may thus have the benefits of incorporation without being subject to both the corporation and individual income tax, if they qualified. Some of the qualifications were that it must be a domestic corporation with no more than 10 shareholders and must have only one class of stock. Another change to the 1954 Code was that the carryback period for net operating losses was increased from two to three years, effective for losses sustained after December 31, 1957.

Special provisions concerning the taxation of life insurance companies, which will not be enumerated in this paper, were introduced in the Life Insurance Company Income Tax Act of 1959.

An amendment to the Internal Revenue Code of 1954 with respect to foreign tax credits (section 904(c)) provided for a carryback and carryforward of that portion of foreign taxes paid or accrued which could not be used in the current year's credit by reason of the per country limitation. The carryback period was two years and the carryforward was five succeeding tax years.

Trusts and associations qualifying as real estate investment trusts were provided special tax treatment under section 856 of the Internal Revenue Code effective for accounting periods beginning in 1961 and later years. A real estate investment trust was an unincorporated trust or association which derived most of its gross income from real estate investments and which, except for section 856, would have been taxed as a domestic corporation. Upon meeting certain conditions, real estate investment trusts were allowed to distribute income to their owners without paying income tax at the corporate level.

After the 1954 Code, the next major legislative change of the tax structure was the Revenue Act of 1962, enacted October 16, 1962. This Act allowed corporations a credit against income tax for investment in certain depreciable property acquired after December 31, 1961 for tax years ended after that date. The credit was allowed for the first year that the property was placed in service. The property eligible was defined as tangible personal property and tangible real property. The income tax against which the credit could be used was first reduced by foreign credit, and the credit could not exceed the income tax liability.

Any part of the investment credit which could not be applied as a credit against the current-year tax because of the limitations, could be carried back to the three preceding tax years and the balance that was still unused then could be carried forward to the five succeeding tax years, in succeeding order.

Revenue Procedure 62-21, applicable to income tax returns filed on or after July 12, 1962, set forth optional guidelines for depreciation and an objective test for use in determining the usefulness and reasonableness of the depreciation deduction. The central objective of the new procedure was to facilitate the adoption of useful asset lives even shorter than those outlined or currently in use, so long as the lives were consistent with retirement and replacement practices actually used by the company. Thus a "reserve ratio" test (equal to the current and prior year depreciation on the assets in each guideline class, divided by the cost of these assets) was included in the new procedure. In general, the slower the rate of asset replacement, the higher the ratio -- but the results of the reserve ratio test were not necessarily binding.

According to provisions added to Code section 167, by the Revenue Act of 1962, the estimated salvage value of certain depreciable personal property (other than livestock and buildings) having a useful life of three years or more and acquired after October 16, 1962, could be ignored up to an amount equal to ten percent of the cost or other basis of the property. If the salvage value exceeded ten percent of the cost, only the excess needed to be taken into account.

The Revenue Act of 1964 provided for a two stage reduction in corporation income tax rates which became fully effective on January 1, 1965 after the first stage was implemented on January 1, 1964. The rates applicable to corporations under the act are summarized in the following table.

TABLE 1 - CORPORATION INCOME TAX RATES BEFORE AND AFTER REVENUE ACT OF 1964

TAX RATE	TAX RATES (%)		
	Before January 1, 1964	January 1 - December 31, 1964	After December 31, 1964
COMBINED NORMAL AND SURTAX RATES	52	50	48
Normal Tax Rate	30	22	22
Surtax Rate on Taxable Income in Excess of $25,000	22	28	26
CONSOLIDATED RETURN ADDITIONAL TAX RATE ON TOTAL TAXABLE INCOME	2	-	-
MAXIMUM TAX RATE ON LONG-TERM CAPITAL GAIN	25	25	25

New provisions were added to the law to discourage the formation of multi-corporate enterprises and the splitting of medium and large size corporations into smaller ones under common ownership in order to take advantage of the reversal in the normal tax and surtax rates. These new provisions (sections 1561 and 1562 of the 1964 law) modified the effect of the reduction in income tax rates as they applied to "controlled groups".

In addition to the general business deductions used in arriving at net income, there were four statutory special deductions used to determine income subject to tax, and three of them were computed using percentages based on the combined normal tax and surtax rates. As a result, the following deductions were affected by the 1964 changes in tax rates:

(1) The part of the dividends received deduction based on amounts received on certain preferred stock of public utilities;

(2) The deduction for dividends paid on certain preferred stock of public utilities;

(3) The deduction allowed Western Hemisphere Trade Corporations.

Also, domestic corporations that were members of the same parent-subsidiary group although filing separate income tax returns could elect to deduct the full amount of the dividends received from each other.

The Revenue Act of 1964 provided for annual increases in the percentage of estimated corporate tax due within the year of tax liability, with the purpose of establishing by 1970 a full "pay-as-you-go" plan for corporations, with equal installments in the fourth, sixth, ninth and twelfth month of the year.

Revenue Procedure 65-13 provided three measures designed to facilitate adoption of the depreciation guidelines implemented by Revenue Procedure 63-21. The overall effect of the 1965 provisions was to increase the amount of depreciation over what it would have been if the 1963 provisions were not modified.

Concerning the valuation of assets, Revenue Rule 65-193 asserted that the value of intangible assets could not be measured by the amount by which the appraised value of the tangible asset exceeds the net book value of such an asset.

The law relating to the acceleration of payments was added to by the enactment of Public Law 89-368. This law stated that for taxable years beginning after 1965, the percentage of estimated tax required to be paid by corporations with tax liabilities in excess of $100,000 would be increased. In 1966 such corporations were required to pay a total of 74% of their estimated tax, and in 1967 and later years (changed from the earlier 1970 deadline) they must pay 100%.

Also related to estimated tax, but dealing specifically with the merger of a subsidiary with its parent corporation, Revenue Rule 68-9 provided that where a subsidiary company is merged into its parent, the parent need consider only the tax shown on its own return for the preceding year in basing its deduction of estimated tax for the current year.

An interesting tax change designed to induce business location was attempted in Revenue Rule 68-558, which provided that the value of a property conveyed on behalf of citizen-grantors to a manufacturing

company to induce it to locate a plant on certain property is not taxable income to the grantee.

The corporation tax rates made applicable in the 1964 Act were altered in 1968. The normal rate was 24.2%, the surtax rate on income in excess of $25,000 was 28.6% and the total rate was 52.8%. These rates were in effect for 1968 and 1969. Unfortunately, a specific record of tax changes for 1969 and 1970 has not been published as far as this author is aware.

This paper has enumerated many of the important developments in the corporate taxation structure in the United States for the post-war period. It is hoped that this analysis will provide some basis for evaluating changes in corporate behaviour which may, to some degree, be precipitated by changes in the corporate tax burden.

APPENDIX

TABLE 1 - DISTRIBUTION OF CORPORATION TAXABLE INCOME, BY RATE BRACKETS, 1962

(Dollar amounts in millions)

Taxable Income Brackets	Tax Rate	Number of Corporations	Taxable Income	Tax
		AMOUNT		
Normal tax and surtax				
Under $25,000	30%	487,011	$ 5,872	$ 1,761
$25,000 and over	52	111,027	41,558	21,610
Subtotal	49*	598,038	47,430	23,371
Add: Long-term capital gains subject to alternative tax	25	---	2,157	539
Add: Mutual insurance company gross income subject to special tax	1	---	2,136	21
Totals before credits ..	46*	598,038	51,723	23,930
Less: Foreign tax credit ...	--	---	---	1,564
Less: Investment credit	--	---	---	834
Totals after credits ...	42*	598,038	51,723	21,533
		PERCENTAGE DISTRIBUTION		
Normal tax and surtax				
Under $25,000		81	12	8
$25,000 and over		19	88	92
Total		100	100	100

Source: Statistics of Income, Corporation Income Tax Returns, 1962. Figures are rounded and will not necessarily add to totals.

* Computed effective in taxable income.

TABLE 2 - SCHEDULE OF TRANSITION TO THE CURRENT PAYMENT SYSTEM FOR CORPORATIONS

(In percentages)

Income Year	Income Year				Following Year				
	April	June	Sept.	Dec.	April	June	Sept.	Dec.	Total
1949	--	--	--	--	25	25	25	25	100
1950	--	--	--	--	30	30	20	20	100
1951	--	--	--	--	35	35	15	15	100
1952	--	--	--	--	40	40	10	10	100
1953	--	--	--	--	45	45	5	5	100
1954	--	--	--	--	50	50	--	--	100
1955*	--	--	5	5	45	45	--	--	100
1956*	--	--	10	10	40	40	--	--	100
1957*	--	--	15	15	35	35	--	--	100
1958*	--	--	20	20	30	30	--	--	100
1959*	--	--	25	25	25	25	--	--	100
1960*	--	--	25	25	25	25	--	--	100
1961*	--	--	25	25	25	25	--	--	100
1962*	--	--	25	25	25	25	--	--	100
1963*	--	--	25	25	25	25	--	--	100
1964*	1	1	25	25	24	24	--	--	100
1965*	4	4	25	25	21	21	--	--	100
1966*	12	12	25	25	13	13	--	--	100
1967* and later years	25	25	25	25	--	--	--	--	100

Sources: 1949-65: The Federal Tax System, p. 266 (See Table A-1); 1966 and later years: Tax Adjustment Act of 1966, H. Report 1285, 89 Cong. 2 sess. (1966), p. 29.

* Applicable only to tax liability in excess of $100,000. The first $100,000 of a corporation's tax liability is paid in equal installments in March and June of the following year.

TABLE 3 - FEDERAL RECEIPTS FROM THE PUBLIC, BY SOURCE, 1945-65

FISCAL YEAR	AMOUNT (millions of dollars)			PERCENTAGE OF TOTAL		
	Total	Individual	Corporation	Total	Individual	Corporation
1945	50,162	18,412	15,146	100	36.7	30.2
1946	43,537	16,157	11,833	100	37.1	27.2
1947	43,531	17,835	8,569	100	41.0	19.7
1948	45,357	19,305	9,678	100	42.6	21.3
1949	41,576	15,548	11,195	100	37.4	26.9
1950	40,940	15,745	10,448	100	38.5	25.5
1951	53,390	21,643	14,106	100	40.5	26.4
1952	68,013	27,913	21,225	100	41.0	31.2
1953	71,499	30,108	21,238	100	42.1	29.7
1954	71,627	29,542	21,101	100	41.2	29.5
1955	67,836	28,747	17,861	100	42.4	26.3
1956	77,087	32,188	20,880	100	41.8	27.1
1957	82,105	35,620	21,167	100	43.4	25.8
1958	81,892	34,724	20,074	100	42.4	24.5
1959	81,660	36,719	17,309	100	45.0	21.2
1960	95,078	40,715	21,494	100	42.8	22.6
1961	97,242	41,338	20,954	100	42.5	21.5
1962	101,865	45,571	20,523	100	44.7	20.1
1963	109,739	47,588	21,579	100	43.4	19.7
1964	115,530	48,697	23,493	100	42.2	20.3
1965	119,699	48,792	25,461	100	40.8	21.3

Sources: 1945-55: Worksheets of the Bureau of the Budget and the Treasury Department; 1956-65: The Budget of the United States Government, 1967, p. 439.

Note: Receipts are net after refunds.

EXISTING STUDIES OF THE RELATIONSHIP BETWEEN DIVIDEND AND REAL INVESTMENT EXPENDITURES

A Working Paper For:

THE INDIV PROJECT

Director: J. C. R. Rowley

June 12, 1970

G. I. North

A considerable amount of theoretical and empirical investigation has been conducted in an attempt to specify with some degree of accuracy the relationship between dividend and real investment expenditures by a corporation. This paper shall attempt to outline the major studies, noting the significant theoretical and empirical constributions of each. All the works considered shall be presented in chronological order respectively, although this is not meant to imply that subsequent authors have necessarily improved the earlier works.

The business corporation presents a real and definite problem for economists investigating the savings - investment dichotomy, and thus for the relationship between dividend and investment behavior. If corporations did not save a substantial fraction of their net income, this sort of problem might not present itself. "Corporations would finance increases in their net assets through the capital markets and pay out all net income as dividends".[1]

But corporations do save. In the early 1960's, net corporate saving averaged about half of total personal saving and gross corporate saving was roughly twice the rate of personal saving in the United States.[2] Dobrovolsky's competent and useful study of the American manufacturing sector from 1915 to 1943[3] indicated that there was in existence a concept

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1. Edwin Kuh, "Theory and Institutions in the Study of Investment Behavior", American Economic Review, May, 1963, p. 261.

2. Ibid., p. 260.

3. S. P. Dobrovolsky, Corporate Income Retention: 1915-1943, New York: National Bureau of Economic Research, 1951.

that might be labelled the "corporate saving function"; thus, the marginal corporate propensity to retain income could indeed be measured, and this measure appeared to exhibit a high degree of constancy for the period measured.

Before a survey of the theoretical work is presented, it should be noted that there appears to be little common ground between the empirical and theoretical approaches to the subject of investment behavior. This has been argued to be a desirable state of affairs, as "it would be harmful to force the two together at the present stage in the development of our science".[4] However, Jorgenson criticizes the view that theoretical and empirical research should be carried out in isolation on two grounds.[5] These are:

(1) far from forcing empirical studies into a theoretical straitjacket, judicious use of a theoretical framework is essential to the proper direction of empirical work;

(2) the use of economic theory as a source of possible explanations for investment behavior frees econometric work from reliance on empirical generalizations that have not been subjected to rigorous econometric tests.

It is important to note that above discussion reflects a major shift in the emphasis of the research on investment behavior which took

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4. Karl Borch, "Discussion", American Economic Review, May, 1963, p. 274.

5. Dale Jorgenson, "The Theory of Investment Behavior", in R. Ferber, (ed.) Determinants of Investment Behavior, New York: NBER, 1967, pp. 130-131. This author feels that Jorgenson's points possess intuitive relevance, whereas Borch seems to be preaching "measurement without theory" only because an immediately obvious theory of investment behavior is not available.

place in the early 1960's. Until then much of the econometric work had paid little attention to economic theory. Jorgenson and others argued strongly that any further progress in this area of economic thought could best be made by comparing econometric models within a theoretical framework. A thoroughgoing reconstruction of the theory of investment was required, but before this work is evaluated, the earlier research needs to be recognized.

THE THEORY

> Economics, we like to think, should provide a coherent explanation of the determinants of business investment demand. Starting with first principles pertaining to the decision-making process of the firm, it should proceed to a quantitative statement of the influence of major social changes on the total amount of investment undertaken in an economy.[6]

In their comprehensive and exhaustive survey of the determinants of investment by businesses,[7] Eisner and Strotz attempt to analyze the formal theory by grouping the various problems discussed by authors up to 1960 under two headings. The first embodies (a) an "interequilibrium approach"[8] and involves the concepts of an initial equilibrium position of the firm and of a final equilibrium position which differs from the previous one as a result of some change in external circumstances, and involving the further dynamical notions of the adjustment of the firm from its initial to its final

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6. R. Eisner and R. Strotz, "Determinants of Business Investment", in Impacts of Monetary Policy, Commission on Money and Credit, Prentice-Hall Inc., Englewood Cliffs, N. J., 1963, p. 61.

7. Ibid., pp. 61-233. Much of the following discussion is based on this article.

8. Ibid., p. 63.

equilibrium state. The second heading considers (b) models primarily concerned with "intertemporal allocation"[9], in which the firm is seen as choosing among a variety of investment projects available to it, the choice being in accordance with some criterion of maximization.

Under (a), the changes which would produce a new long-run equilibrium position for the firm would be (1) changes in demand, (2) changes in factor costs or conditions of supply, and (3) changes in technology. Although it is difficult to state the effects of any of these changes upon the equilibrium position of the firm, Eisner and Strotz feel that it is safe to say that, regardless of the form of industrial organization, "an increase in demand facing the firm will, as a general rule, bring about a rise in the equilibrium level of output for the industry as a whole".[10]

The acceleration principle is related directly to the next assertion concerning the effects of a change in market conditions upon the equilibrium position of the firm -- the desired stock of capital is assumed to be positively related to the level of expected demand for output. The authors explicitly note that the acceleration principle has always been based on the "law of derived demand", and the output changes which were considered relevant were those resulting from changes on the side of demand, not on the side of cost, including technology.

Another general rule is that whatever causes firms to desire an increase in output also enhances their present profits. However, according to the conventional theory of the firm, investment is motivated by profit

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9. Ibid., p. 64.

10. Ibid., p. 65.

maximization, but this does not imply by logical necessity either a profit or an acceleration theory of investment. Nevertheless, under reasonable assumptions and assuming that changes in demand are of most importance, Eisner and Stortz would expect to find output, profits, and investment moving together over time.

There have been models which contradict the hypothesis of profit maximization by asserting that "entrepreneurs may take pride in the size of their establishments".[11] If the entrepreneur receives satisfaction from the size of his firm, then the greater the amount of profit relative to the cost of using capital, the more capital the entrepreneur will be willing to use at the expense of lower profit.

Eisner and Strotz develop a simple model which indicates that the effect of an increased desire for capital may lead to expansion at either a decelerating or accelerating rate.[12] Where c is the cost of expansion, t is the date at which the expansion actually occurs, p is rate of profit for a stationary plant, and s is a given size, much depends on the role of the magnitude of the terms $\frac{\partial c}{\partial(\frac{ds}{dt})}$ and $\frac{\partial^2 c}{\partial(\frac{ds}{dt})\,\partial t}$ compared to $\frac{dp}{ds}$.

Under the second heading, (b), the intertemporal allocation models are not truly dynamic. They do not explain how investment varies over time but are concerned essentially with describing the criteria by which intertemporal allocations are rationally made. An expected stream of returns

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11. L. R. Klein, "Notes on the Theory of Investment", Kyklos, 2, 1948, p. 101.

12. Op. cit., Eisner and Stortz, p.379.

associated with a given investment programme is evaluated by discounting it at some appropriate rate of interest, thereby giving the present value of the investment programme.

It is important to emphasize that the future returns are expected returns so that the investment demand schedule (which might also be thought of as a marginal efficiency of investment schedule) reflects expectations. No explicit account is taken here of the investor's feelings about the probability distribution of the possible returns stream. One might slide past this problem to some extent, by supposing that the investor is interested only in the mathematical expected return of each given date or that the returns which enter into the formulations are "certainty equivalents" to the probability of returns.

Ultimately, the only valid criterion for the case of certainty (and assuming that the firm can be regarded as a single decision maker) is for a utility function of the decision maker to be maximized subject to constraints displaying both the internal investment opportunities of the firm and the external market opportunities to invest and to raise funds. This has been developed by Hirshleifer.[13]

To explain investment decisions it is important to know something about attitudes towards risks, uncertainties, and how potential investors come to form judgements as to the probabilities of various possible outcomes of investment decisions - how expectations are formed. Unfortunately there is little deductive theory in these areas. "To the extent that

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13. J. Hirshleifer, "On the Theory of Optimal Investment Decision", Journal of Political Economy, Vol. 16, 1958, pp. 329-352.

business expectations have been related to economic variables, the hypotheses have been 'ad hoc' and the research empirical."[14] Economists have attempted to search for plausible "proxy" variables to substitute for the expected values of other variables. However, the merits of past and present profit or profit change, sales or sales change, asset value or asset value change, etc. as proxies for the expected return on additional plant and equipment must be appraised in the light of the empirical work to be looked at later.

Eisner and Strotz assume that a firm may invest for two different purposes: to replace relatively fixed capital such as plant or heavy equipment and to build up relatively liquid assets to meet short-term requirements, such as inventories. This may be represented by

$$I_t^* = I_t^F + I_t^V$$

where I_t^* is the planned investment expenditure for the period t; I_t^F is the amount to be allocated to fixed capital investment; and I_t^V is the amount to be allocated in inventories. This equation is in money terms. This paper has considered I_t^F and some of the theoretical work done on this particular form of investment. Now a brief look at the growing area of inventory investment is in order.[15]

It may be useful at this point to clarify the motives behind the holding of inventories, and then to consider several costs. Four motives which are plausible are: (1) technological reasons reflecting

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14. Op. cit., Eisner and Strotz, p. 101.

15. Cf. L. A. Metzler, "Factors Governing the Length of Inventory Cycles", Review of Economics and Statistics, Vol. 29, Feb. 1947. Metzler has presented several models of inventory investment and investigated them using time series data.

work already in progress (V_w); (2) procurement and production reasons reflecting work not in progress (V_n); (3) precautionary reasons (V_p); and (4) speculative reasons (V_s). The first two motives do not allow much flexibility for inventory policy, but the latter two allow for the importance of changes in the interest rate and changes in input costs or product prices. A possible model that might be developed to explain a desired level of inventories ($\hat{V}$) would be

$$\hat{V} = V_w + V_n + V_p + V_s$$

but this is dangerous as it does not allow for the strong possibility that some physical goods may serve different purposes -- especially those being held for speculative purposes. Elsewhere the present author has asserted that the firm will react, in its inventory decisions, to short-run changes in business conditions, as reflected in contemplated changes in sales, expected price changes, and actual changes in the interest rate. Thus the model for intended inventory investment may be given by

$$\hat{V} = V_w + V_n + [S_e - S_{-1}] + f(\frac{r}{\dot{p}})$$

where $\hat{V}$ is the desired level of inventories in the forthcoming period, S_e is the expected sales of that period, S_{-1} is the actual sales of the immediately preceding period, and $\frac{r}{\dot{p}}$ is the interest rate deflated by the expected change in prices.

Certain costs of holding inventories should be recognized. The cost of storage of inventories is an obvious cost and includes warehouse space and labour costs for precautionary purposes. In fact, storage space may place a definite limit on the amount of investment that may be undertaken, a fact that is especially true with regards to the production of

large size products such as automobiles. Another possible cost of holding inventories may be physical deterioration over time, such as with coal. An interesting inventory cost which may be of some importance in particular industries is the cost of maintaining storage space even when inventories are low. All of these are considerations that must be looked at when developing a theory of inventory investment.

Working from this purely theoretical analysis of the determinants of any form of business investment, certain propositions may be seen to emerge. Strictly speaking, four categories are sufficient to account for changes in the equilibrium amounts of capital. These are as follows:[16]

(1) A first major component of investment demand appears as a "replacement" need. This is because production inevitably involves the wearing away of capital.

(2) Within the limits of an economy that appears stationary at the macroeconomic level there may be microeconomic changes which generate investment such as changes in specific product demand or in the supply of specific factors of production.

(3) A third cause from which may be derived determinants of investment is that involving the values of the relevant aggregative variables. Of key concern would be changes in the level of demand for total output and the total supply of factors of production.

(4) Investment will be generated by independent or exogenously determined changes in the process of production. These are generally included under the label of "technological change".

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16. Op. cit., Eisner and Strotz, p. 117.

However, since the total stock (and composition) of capital is rarely the equilibrium amount, it must be recognized that explaining the rate of investment involves the dynamic problem of rates of adjustment of the capital stock to an ever changing equilibrium demand.

The following succinctly articulates a central aspect of the theory of capital and investment; namely, the maximization of a future payoff and the process of production:

> It is likely that a theory that will be useful in predicting investment must recognize fundamental differences between the behavior that might occur on the basis of known values of explanatory variables and that which occurs in consequence of what decision makers infer from past or current values about the unknown values that are relevant ... Recognition of the stochastic nature of economic experience forces one to think in terms of businessmen seeking to optimize currently parameters of probability distributions of future variables ... Whatever the nature of the optimization, or the function that businessmen may be most usefully considered to maximize, we can readily indicate some of the constraints under which they operate.[17]

Decision makers may desire, however, to optimize other parameters of the probability distribution of expected returns, such as minimizing large losses. Stated simply, they may be expected to either maximize some utility function or minimize some disutility function.

Eisner and Strotz, in discussing the role of profits, make the following statement:

> It is frequently suggested that investment is a positive function of profits and that the way to increase the rate of investment is to increase the rate of profits. Careful analysis indicates that this is not a hypothesis that can be easily proved.[18]

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17. Ibid., p. 118.

18. Ibid., p. 124.

This assertion is of importance to this paper, as it is related to the distribution or retention of income by the firm -- the former being the paying out of dividends to shareholders. Current profits as a source of funds may be very important to the individual firm in an imperfect capital market; but the role of profits might then be primarily to determine which firms may invest. Also, for lack of perfect information, investors of funds may be guided considerably by current and past profits as indicators for their estimates of the return and risk on contemplated investment.

This paper has sketched briefly several of the main theoretical underpinnings of investment studies up to the exhaustive review of Eisner and Strotz. Before going on to look at several of the more recent attempts to reconcile theory and empiricism, several of which explicitly relate investment to dividend behavior, a brief summary of investment theory, with its main contributors recognized, may be useful.

A brief and concise review of developments in the investigation of business investment behavior has been presented by Kuh:[19]

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19. Op. cit., Kuh, p. 260. Several of the more relevant references cited by Kuh will be given here: J. M. Keynes, The General Theory of Employment, Interest and Money (1936); P. A. Samuelson, "Interactions Between the Multiplier Analysis and the Principle of Acceleration", Rev. of Economics and Statistics (1939); J. M. Clark, "Business Acceleration and the Law of Demand: A Technical Factor in Economic Cycles", J.P.E. (1917); H. B. Chenery, "Over-Capacity and the Acceleration Principle", Econometrica, (1952); L. M. Koyck, Investment Analysis and Distributed Lags (1954); T. Haavelmo, A Study in the Theory of Investment (1960); Dale Jorgenson, "Anticipations, Appropriations, and Investment Behavior in U.S. Business: Quarterly 1947-60", University of California, (Ditto)(1962). For other references cited in the passage, the interested reader is referred to Kuh's article.

> A theory of investment purports to explain the rate of change in physical capital in order to achieve a desired stock. While Keynes gave only an informal outline, a dynamic cycle theory of saving and investment was stated by Harrod in 1936. This was made precise in the Hansen-Samuelson 1939 paper on the multiplier-acceleration principle, an approach which was constructed at the macrolevel although it seemed compatible with microbehavior. Saving depends on income alone and the equilibrium capital stock is unrelated to interest rates. The parentage of the acceleration component in fully developed form goes back to J. M. Clark's 1917 article ... In the Clark formulation the optimal stock of capital is taken to be a datum and proportional to output. The present versus future choice element so prominent in Irving Fisher's theory was completely thrust aside ....
>
> Deficiencies in the dynamic adjustment process of the original acceleration principle formulation have since been largely cleared up, partly through the distributed lag accelerator of Hicks, but more particularly through the work of Richard Goodwin, Hollis Chenery, and L. M. Koyck. They have elaborated an adjustment process designed to erase gradually a disequilibrium between desired and actual capital stock according to a distributed lag pattern rather than instantaneously according to the rigid original acceleration theory ... A variety of complex issues usually submerged in deriving the adjustment process have also been analyzed by Haavelmo. Finally ... Dale Jorgenson has sought to generalize the adjustment lag structure and at the same time to take explicit account of entrepreneurial net worth maximization subject to a production function constraint.

This paper has attempted, to this point, to provide a framework of reference with respect to some of the past work on investment behavior. It is now necessary to investigate in some detail the relationship of specific aspects of corporate behavior, in particular the paying-out of dividends, to the decisions by firms to invest. The concept of dividends is closely related to that of retained earnings in that the portion of net profits (plus depreciation) not distributed to the shareholders is retained by the corporation.

As a point of interest, corporate savings are regarded as an important aspect in the process of economic development.[20] This importance

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20. Ibid., p. 262

is based on the hypothesis that high marginal corporate or entrepreneurial propensities to save out of profits are likely to provide the main source of private abstinence required to generate capital in the poverty stricken regions of the world.[21]

Widespread empirical observation of the real world, much of it of a casual, almost theoretical type[22] and some of it quite intense and systematic[23] led economists in the early 1960's to the view that corporate decision makers have a definite preference for internally generated funds (as supplied through retained earnings) than for external funds. The implications of management acting as if the imputed cost of internal funds is less than the cost of external funds are reflected in two main propositions:

(1) The greater are gross profits, the greater will be the level of internally generated funds, given normal dividend behavior.

(2) The greater are internal funds, the greater will be the rate of investment.

It can be seen that dividend behavior may thus be expected to be of some importance to investment decisions. However, before the studies relating to dividend behavior are recognized, several aspects of the above

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21. Cf. P. N. Rosenstein-Rodan, "International Aid for Underdeveloped Countries", Rev. of Econ. and Statistics, May, 1961.

22. See, for example, Edgar M. Hoover, "Some Institutional Factors in Business Investment Decisions", A.E.R., Papers and Proceedings, May, 1954, Vol. 44, pp. 201-13.

23. See, for example, J. R. Meyer and Edwin Kuh, The Investment Decision, 1957.

propositions should be clarified.

As Kuh points out, "there is reason to believe that corporate income retention is motivated by expected favourable investment opportunities and, further, that the extent to which firms do in fact use external funds depends upon the rate of output growth and its profitability".[24]

An examination of the studies which attempted to test the two above propositions concurrently leads to the following main conclusion: "Capacity accelerator motivation is more important than profits or internal funds in explaining the cyclical path of investment although profits still have a significant, if secondary, role to play."[25] The usual statistical measures indicate that the greater part of the explanation of investment behavior lies in the gradual adjustment of the capital stock to a desired level dependent on expected output levels and lagged capital stock. Also, interest rates began showing up, in the early 1960's as statistically significant investment determinants. Nevertheless, internally generated funds or profits appear to have an observable effect on investment for given levels of output, capital stock, and interest rates, although the effect is a subordinate one.[26]

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24. Op. cit., Kuh, p. 264. See also Dobrovolsky's study of corporate saving behavior, 1915-1943.

25. Ibid., p. 264.

26. The suggested conclusions of the statistical tests are derived from several empirical studies, such as: Robert Eisner, "A Distributed Lag Investment Function", Econometrica, Jan., 1960; Robert Eisner, "Capital Expenditures, Profits and the Acceleration Principle", NBER Conference on Research in Income and Wealth, 1962; E. C. Brown, R. M. Solow, A. Ando, J. Kareken, "Lags in Fiscal and Monetary Policy", Commission on Money and Credit, 1963; J. R. Meyer and Robert Glauber, Investment Decisions, Economic Forecasting, and Business Policy, 1963; Edwin Kuh, "The Validity of Cross-Sectionally Estimated Behavior Equations in Time Series Applications",

Jorgenson, as referred to earlier in this paper, made a relatively significant departure from the traditional approach to investment theory by comparing econometric models within a theoretical framework based on purely neoclassical considerations. He has stated his conception of the situation as follows:

> Ideally, each model should be derived from a common set of assumptions about the objectives of the business firm. Differences among alternative models should be accounted for by alternative assumptions about the behaviour of business firms in pursuing these objectives. It will undoubtedly be surprising to some that a theoretical framework is implicit in the econometric models of investment behavior currently under study.[27]

A brief summary, in words, of his model has been presented by Jorgenson and bears repetition here:

> To summarize, we consider a version of the neoclassical theory in which the objective of the firm is maximization of its present value. This may be derived from the objective of maximizing the utility of a consumption stream subject to a fixed set of production possibilities and to fixed current and future prices and interest rates. Since the choice of a production plan is entirely independent of the corresponding choice of a consumption stream, two individuals with different preferences among consumption streams will choose the same production plan. Secondly, we consider a description of technological possibilities in which output at each point of time depends on the flow of labour and capital services at that point of time, the flow of capital is proportional to the stock of capital goods, and replacements are also proportional to the stock of capital goods. The essential justification for this specialization is that the resulting theory of optimal capital accumulation is sufficiently broad to include the principal econometric models of investment behavior as special cases.[28]

Econometrica, Apr., 1959; Frank deLeeuw, "The Demand for Capital Goods by Manufacturers: A Study of Quarterly Time Series", Econometrica, July, 1962; Edwin Kuh, Capital Stock Growth, 1963; James J. Diamond, "Further Development of a Distributed Lag Investment Function", Econometrica, 1962; M. Brown and H. Roseman, "A Cross-Section Analysis of Manufacturing Investment During 1951-1955", Proceedings of the Business and Economics Section of the American Statistical Association, 1957.

27. Op. cit., Jorgenson, p. 131.

28. Ibid., p. 140.

The approach utilized by Jorgenson, may well prove fruitful to the theoretical economist who hypothesizes that the firm derives utility by attempting to maintain a stable and constantly growing dividend payout stream, although to this author's knowledge, little work has been done in this direction. A plausible justification for such corporate behavior might well be its desire to maintain shareholder security and thus sustain a secure corporate image. Indeed, if such behavior were a significant aspect of the firm's objectives, the importance of dividends in influencing investment demand might be more adequately ascertained than has been done to date.

Before we proceed to discuss explicitly how dividends have been included in models of investment determination, some of the research on dividend behavior itself should be recognized. The standard dividend function was developed by Lintner, who states:

> The question that comes up first -- and usually continues to be the dominant issue -- is "Is there any sufficient reason to change it, and if so, by how much?"not "How much should we pay this quarter (or this year)?" considered 'de novo' .... Current dividend distributions are primarily determined by last year's dividends and current profits. The net effect of other factors, insofar as not systematically reflected by current profits and lagged dividends, is small and random.[29]

Writing current dividends as D, profits as P, lagged dividends as D_{-1} and the unexplained error term as u, the relation estimated by Lintner was

$$(1) \quad D = a + \alpha_1 P + \alpha_2 D_{-1} + u$$

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29. J. Lintner, "Determinants of Corporate Savings" in W. Heller et. al. (eds), Savings in the Modern Economy (Minneapolis: University of Minnesota Press), 1953.

A more detailed theoretical rationale for (1) is the speed-of-adjustment model suggested by Lintner and backed by behavioral claims made by interviewed firms:

$$(2) \quad D - D_{-1} = a + c(rP - D_{-1}) + u$$

where r is a "target" payout ratio applied to current earnings, P, and c is a speed-of-adjustment coefficient indicating a conservative bias against large revisions in dividend pay-outs.[30] Thus we would expect c to be greater than zero but less than one.

Lintner's model "provided an impressive explanation of interwar dividends and performed well when applied to the postwar period".[31] However, it has been criticized as being too aggregative and fails to explain the target ratio itself.[32]

Darling has suggested that profits plus depreciation is a more reasonable variable than profits alone, since it is total cash flow upon which firms base their decisions to pay-out dividends.[33] He argues that this adjustment would explain the supposedly low dividend/profit ratio in

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30. J. Lintner, "Distribution of Incomes of Corporations Among Dividends, Retained Earnings, and Taxes", American Economic Review, Vol. 46, No. 2, May, 1956.

31. J. A. Brittain, Corporate Dividend Policy, Washington, D.C.: The Brookings Institution, 1966, p. 20.

32. Jacob Michaelsen, "Determinants of Corporate Dividend Policy", unpublished doctoral thesis, University of Chicago, 1961.

33. P. G. Darling, "The Influence of Expectations and Liquidity on Dividend Policy", Journal of Political Economy, Vol. 65, No. 3, June, 1957, pp. 209-224. John Brittain feels that this is an important step, op. cit. Other studies of dividend behavior which will not be considered here are S. Dobrovolsky, Corporate Income Retention, 1915-43 (1951); S. J. Prais, "Dividend Policy and Income Appropriation" in Studies in Company Finance, B. Tew and R. F. Henderson, (eds), (1959); S. J. Prais, "Some Problems in the Econometric Analysis of Company Accounts", unpublished, (1956).

the early postwar period.

> Due to rapid inflation, depreciation (based on original cost) was well below replacement prices, so that accounting profits were much higher than true profits. However, the ratio of dividends to profits plus depreciation was actually slightly higher in the early postwar period than it is currently. The use of profits plus depreciation also gives a much more reasonable short-run marginal payout ratio and a long-run marginal payout ratio very close to the average ratio, which seems quite reasonable.[34]

The empirical estimate of this function is[35]

$$(15.34)\quad D_v = 0.17 + \underset{(0.0122)}{0.1103}\,(P_{ca} + D_m + D_r + D_c) + \underset{(0.0576)}{0.5289}\,\frac{1}{4}\sum_{i=1}^{4}(Dv)_{-i}$$

$$\bar{R}^2 = 0.990$$

where D_v = corporate dividend payments, billions of current dollars (BCD)

P_{ca} = corporate profits after taxes (BCD)

D_m = depreciation for manufacturing investment (BCD)

D_r = depreciation for regulated and mining investment (BCD)

D_c = depreciation for commercial and other investment (BCD)

Dhrymes and Kurz, in an interesting and well-done study, question this generalized sort of dividend hypothesis.[36] Their argument is that the maximization of profits through optimal hiring of factor resources (labour and capital) is more important than keeping the dividend constant in the short-run. Their study indicates one way of considering the role of

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34. M. K. Evans, Macroeconomic Activity, New York: Harper & Row, 1969; p. 286.

35. Ibid., p. 286.

36. P. J. Dhrymes and M. Kurz, "Investment, Dividend, and External Finance Behavior of Firms" in Determinants of Investment Behavior, New York: NBER, 1967, pp. 427-467.

internal funds in the investment function; namely, considering the fact that these funds are used for other purposes besides investment.

Dhrymes and Kurz argue that the investment function should be considered one of several simultaneous decisions made by top management of corporations. Firms make decisions to invest in plant and equipment and inventories, pay dividends, and borrow through the bond and stock markets at the same time. Thus investment decisions should be estimated as one of a number of jointly determined functions, and not in isolation.

Basically the method they use is to estimate investment as a function of profits, sales, and alternative sources and uses of funds, which are dividends, external finance through borrowing, and short-term investment (mainly inventories). They then proceed to estimate dividends as a function of the same jointly determined variables and also estimate external borrowing in a similar way. In symbolic notation we have:[37]

$$\frac{D}{S} = g_1\left(\frac{I}{S}, \frac{EF}{S}, \frac{\pi}{K}, \frac{N}{K}\right)$$

$$\frac{I}{S} = g_2\left(\frac{D}{S}, \frac{EF}{S}, \left(\frac{\pi}{K}\right)_{-1}, \frac{N}{K}, \frac{S-S_{-3}}{S_{-3}}\right)$$

$$\frac{EF}{S} = g_3\left(\frac{D}{S}, \frac{I}{S}, \frac{\pi}{K}, \frac{A}{K}, \frac{R}{LTD}, \frac{LTD}{K-LTD}\right)$$

where the terms are defined as follows:

S - sales, undeflated

EF - long-term borrowing; external finance

D - dividends, common

I - gross fixed investment

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37. R. W. Resek, "On Dhrymes-Kurz and Anderson", in Determinants of Investment Behavior, New York: NBER, 1967, p. 471.

K - book value of the capital stock

π - net profits (after taxes), undeflated

LTD - net long-term debt outstanding, in nominal terms

A - depreciation allowances

N - net current position of the firm (defined as the excess of inventories, cash, short-term securities, and accounts receivable over accounts payable and other short-term liabilities)

R - interest payments at the time (a measure of the relevant interest rate).

Resek points out several peculiarities with this particular specification of the model, which shall be enumerated here:

(1) the normalization of variables is half related to sales and half to capital stock;

(2) one can question the lag structure used in the model -- especially in light of the evidence indicating that there is a sizable lag between decisions to invest and the specific expenditure;

(3) the difference in the lag given to $\frac{\pi}{K}$ is not explained;

(4) the specific choice of variables can be questioned.

Very briefly, the major findings of the Dhrymes-Kurz study are as follows:[38]

(a) A strong interdependence is evident between the investment and dividend decisions; the external finance activities of firms seem to

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38. Op. cit., p. 428. The interested reader is also referred to the "Special Note" series of this author for the INDIV project, in particular, "Notes" 11 and 13.

be affected by the other two aspects of the firm's operation but do not seem to affect them much, except possibly during upswings or peaks. The implication here is that if dividend policies are very rigid, the investment requirements of firms tend to have a significant effect on their dividend behavior.

(b) There is compelling evidence to suggest that in estimating the structure one ought to use full information methods.

(c) There is considerable evidence that elements of the accelerator theory of investment are empirically quite relevant. This is not a denial of the usefulness of the profits version. The manner in which profits affect investment is quite complex.

The Dhrymes-Kurz study is notable as it attempts to delineate clearly the chain of causality between dividends and investment as both are related to profits. Their study indicates that, "other things equal", an increase in profits will increase investment; but "other things equal" may be an invalid statement if alternative uses of funds are needed. Evans notes that the answers to these problems must await future results, such as work now underway by Dhrymes.[39]

A further aspect of the relationship between investment and dividend expenditures by a corporation is the effect of investment outlays on dividend payments. Brittain found that current investment expenditures do not play an active part in the determination of current dividend payments.[40] An explanation for this result was provided by Lintner, who

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39. Op. cit., Evans, p. 127.

40. John A. Brittain, "The Tax Structure and Corporate Dividend Policy", American Economic Review, Vol. 54, May, 1964.

asserted that "the relative richness of investment opportunities, the character of the competitive and stochastic process within which the firm lives, and so on all affect what the target ratios are, but once set they are not changed lightly or frequently".[41] Lintner goes on to provide a summary of the general conclusions indicated by the current research:

> The evidence is growing that the dividend payment is a top priority item in the course of shorter-term swings, and that companies can and do pay the dividends implied by their relatively stable long-run oriented policies with considerable consistency over substantial periods of time, adapting other phases of their adaptive policies to this near requirement for dividend outflow over successive short-runs, and adapting the long-run dividend target itself only if and as there are major changes in environmental factors and trend-expectations or major adverse changes in the company's fortunes requiring a reorientation of the whole long-run financial strategy of the company.[42]

Some work has been done on particular or specific dividend effects, such as the extent to which dividend behavior influences investment value to the individual investor in stocks, who will become the receiver of subsequent dividend payments. For example, Walter attempts "to ascertain the maximum current price that a rational investor would pay for a given share of stock in the light of his individual circumstances".[43]

This paper has looked at several of the major studies on investment and dividend theory in economic literature. The fact that dividends are an alternative to investment as an expenditure of corporate

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41. John Lintner, "Discussion", AER, Vol. 54, May, 1964, p. 306.

42. Ibid., p. 306.

43. James E. Walter, Dividend Policy and Enterprise Valuation, Belmont, California: Wadsworth Publishing Co., Inc., 1967, p. 41.

income has led many to believe that dividends may be a major determinant of investment. Others, however, argue that dividends are a constant portion of income and thus exert little affect. Still others argue that the decisions concerning investments and dividends are interdependent and must be considered as being simultaneously determined. The reconciliation of these varied and diverse views is a task yet to be accomplished.

THE CARTER REPORT AND THE WHITE PAPER:
CORPORATE ASPECTS

A Working Paper for

THE INDIV PROJECT

Director: J. C. R. Rowley

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During the last ten years Canadians have witnessed, and participated in, a national debate on reform of the existing tax structure. This debate began with the meetings and hearings of the Royal Commission on Taxation, and has been extended and reborn with the publication of the White Paper on Tax Reform. This study shall investigate the corporate aspects of these two milestones in Canadian tax history.

The Royal Commission on Taxation, more commonly referred to as the Carter Commission, was appointed through an Order in Council of the Privy Council on the recommendation of Prime Minister Diefenbaker, in September, 1962. Mr. Kenneth LeM. Carter was appointed chairman of the Commission, and five other Commissioners were named in the original Order. The commission was appointed

> to inquire into and report upon the incidence and effects of taxation imposed by Parliament, including any changes made during the currency of the inquiry, upon the operation of the national economy, the conduct of business, the organization of industry and the positions of individuals; and to make recommendations for improvements in the tax laws and their administration that may be consistent with the maintenance of a sufficient flow of revenue.[1]

The Report finally tabled by the Commission in the House of Commons, February 24, 1967, called for widespread reform of the present Canadian tax system. Although the Commission's recommendations generated a great deal of concern among specific interest groups, there was general agreement on the need for reform. Indeed, some researchers have argued that it is wrong to call the present Canadian tax structure a system, "for it is anything

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1. "Tax Memo", Canadian Tax Foundation, CCH Canadian Limited, 1967, p. 5.

but systematic".[2]

The present system of taxation in Canada is a morass of complexities and subtleties built up in an 'ad hoc' manner through judicial interpretations, attempts to close loopholes, and other accidental developments. As such it "contains a number of implicit subsidies that on examination cannot be regarded as fair and cannot even be said to satisfy the objective of fostering economic growth".[3]

The Carter Commission attempted to investigate and scrutinize, in an organized manner, the Canadian tax structure. It then attempted to define or conceptualize what it referred to as an "ideal" tax system. From this frame of reference it made recommendations designed to bring Canadian tax laws as close to the ideal as possible, bearing in mind the limitations imposed by the need for a "sufficient flow of revenue".

The Carter Commission presented its recommendations in a great deal of detail. Essentially, there are four:

> (1) The personal income tax -- the principle tax based on ability to pay in Canada -- should be based on a comprehensive definition of income that would include all forms of receipts. (2) All other direct taxes on income (such as the corporation income tax and taxes on gifts and bequests) should be either eliminated or integrated with the personal income tax. (3) The tax unit whose income would be taxed should be defined as the family unit rather than the individual. (4) Sales Taxation should be reformed by substituting a general sales tax on all retail sales and services for the present federal manufacturing sales tax and provincial retail sales taxes.[4]

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2. John Bossoms, "The Objectives of Taxation and the Carter Commission Proposals", Reprint No. 10, University of Toronto, p. 153.
3. Ibid., p. 153.
4. Ibid., p. 154.

The detailed recommendations of the report touched on practically every aspect of the tax structure. As such it generated a great deal of debate on most of its proposals. The Government, in particular the Department of Finance, did not participate in this debate initially except to indicate that reform was necessary. Having considered the Carter proposals, as well as many submissions from interested parties, the Government made its position known in the "White Paper on Taxation", tabled by Finance Minister E. J. Benson in the House of Commons on November 7, 1969. This White Paper indicated the particular legislative reforms that the government intended to introduce, and called for public discussion of its specific proposals.

Although the Carter Report played an obvious role in the thinking behind the White Paper, many of its recommendations were not explicitly recognized or considered as practicable by the Government. This paper is concerned primarily with the corporate aspects of taxation, and thus shall investigate in turn the recommendations for reform made by the Carter Commission and the particular legislative changes proposed by the government in the corporate sphere. An investigation of the major recommendations of the Carter Commission pertaining to corporations provides a reasonable point of departure.[5]

The Commission asserted that its major aim was the attainment of equity, as determined by the "ability to pay", in the tax system. This ability to pay depends upon all receipts of income which leads to the

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5. Much of the following discussion is based on the summary of recommendations provided in the "Tax Memo" cited above, especially pages 7-11.

increasing of an individual's satisfaction. The Commission asserted that they

> do not believe it matters, from the point of view of taxation, whether he (the taxpayer) earned it through working, gained it through operating a business, received it because he held property, made it by selling property or was given it by a relative .... was expected or unexpected .... a unique or recurrent event.[6]

Thus, included in such a comprehensive definition of income would be capital gains, gifts and bequests, family allowances, strike pay, and all employee benefits, including non-cash ones, provided by the employers. The philosophy of the Carter Report has been succinctly, if not eloquently, described as "a buck is a buck is a buck".

The Report recommends that personal and corporate income taxes be integrated, which represents "a dramatic departure from the existing scheme of taxing both the corporation on profits as they are earned and .... the shareholder on the receipt of dividends".[7]

The Commission recommended that corporate profits be taxed at a flat rate of 50 percent, which is the maximum rate proposed for individual taxation. In effect the corporate tax would be paid for by the corporation on behalf of the shareholder. When the income of the corporation is either distributed or allocated to the shareholder, he would then be entitled to a full tax credit.

A simple numerical example may prove useful. If a corporation has pre-tax earnings of $100 it would pay $50 in tax. If it distributed $25 as a dividend, the shareholder would reflect the grossed-up amount of

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6. Ibid., p. 7.
7. Ibid., p. 8.

$50 in income but would be deemed to have paid tax of $25. In addition, if the shareholder is taxed at less than the maximum personal rate (of 50 percent) he would be entitled to a refund. Notional "allocations" of funds by the corporation to the shareholder are treated in the same manner.

The provisions relating to capital gains on the sale of shares are tied in with the integrated corporate tax. It should be noted that the Commission recommended full taxation of all capital gains, coupled with the full deductability of losses. It has been argued that "the basic tax system would be so radically altered (by the recommendations of the Report) that bringing capital gains into taxable income would be both fair and workable".[8]

The effect of the recommendations on capital gains on the sale of shares may be illustrated by an extension of the above numerical example. Assume that the shareholder acquired the shares for $1000 and, after the corporate distribution of $25 and a notional distribution of $20, sold them for $1090. The shareholder's gain of $90 would be reduced by $40 -- the gross-up amount allocated but not distributed -- and the remaining $50 gain would be reflected in income and taxed at ordinary personal rates. If the shareholder had disposed of his share for less than $1050, he would be entitled to a loss reduction.

As mentioned above, all corporation income would initially be taxed at the one flat rate of 50 percent. The existing tax rate of 21 percent on the first $35,000 of corporation income would be withdrawn. However, "the proposed integration of corporation and personal income taxes would mean that ultimately all business income would be taxed at the personal rate of the Canadian corporate shareholder or business

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8. Ibid., p. 9.