SOME INDIRECT EVIDENCE ON EFFECTIVE CAPITAL GAINS TAX RATES

by

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Working Paper No. 19-82

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Revised, July 1982

I would like to thank Ms. Leslie Forster for her able and patient assistance, without which this project would have never been completed. I would also like to thank Professors Marshall Blume, Mark Flannery, Robert Inman, and an anonymous referee for extensive comments which have improved the paper. Naturally, all remaining errors and shortcomings are my responsibility.

INTRODUCTION

This paper presents estimates of effective marginal tax rates on capital gains, excluding housing, between 1960 and 1978, in the United States. Concern that the inflation of the 1970s may have worked through the tax system to reduce incentives to produce and save has focused attention on the effective marginal tax rates that apply to various sources of income. Joines (1981) sheds light on this issue by calculating the historical effective marginal tax rates on factor incomes for the United States. Part of the recent debate, however, has focused specifically on capital gains taxes and the desirability of reducing them to spur incentives for saving and investment. The effective marginal tax rate on capital gains (henceforth EMTG) may be the most difficult rate to measure. In addition to the usual problems of how to attribute deductions, exclusions, and tax credits, further adjustment must be made because investors pay taxes only when they realize their capital gains[1]. The expected EMTG is an important determinant of the market price of assets that are likely to accrue capital gains, and it may have an important impact on the desired level of the capital stock.[2]

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[1]Feldstein and Poterba (1980) acknowledge these difficulties and simply assume the effective capital gains tax to be 5 percent (7.5 for 1969-78) in calculating total taxes on returns to capital.

[2]The sum of realized and unrealized capital gains in 1978 is approximately $93.4 billion and, very roughly, amounts to as much as 20 percent of net income to capital (see data appendix).

The expected EMTG depends on the expected marginal income tax rate of the investor, the applicable exclusions, deductions, and tax credits that additional capital gains will generate, and on the time period over which the investment is likely to be held before the capital gains are realized. The length of the expected holding period is important because it is the present value of expected taxes on capital gains that is relevant to the investor. It is convenient to define the EMTG ($\hat{\tau}$) as the tax rate on capital gains that, if levied continuously, would leave the investor with the identical wealth as a capital gains tax, τ, levied when the capital gains are realized. Purchasing a \$1 security that appreciates at the rate γ and realizing the capital gains at the end of N periods yields wealth

$$W = (1-\tau)(e^{\gamma N}-1) + 1. \tag{1a}$$

The EMTG ($\hat{\tau}$) can then be calculated as

$$W = e^{(1-\hat{\tau})\gamma N}, \quad \text{so that} \tag{1b}$$

$$\hat{\tau} = 1 - \frac{1}{\gamma N} \ln [e^{\gamma N} - \tau(e^{\gamma N} - 1)]. \tag{1c}$$

The EMTG falls as the expected holding period (N) increases because the present value of taxes falls, the further into the future they have to be paid.

Though it is the expected EMTG that is theoretically relevant, this paper only attempts to calculate ex-post EMTGs over the sample period. The hope, as usual, is that the actual experience bears a sufficiently close relation to that expected to be useful in

assessing the impact of these taxes. Furthermore, though the actual distribution of EMTGs may be of some importance, only the average EMTG is reported for each year.

The most straightforward way of calculating EMTGs is to calculate statutory average marginal tax rates on capital gains and adjust them according to (1c) by using average turnover of stock portfolios estimates, periodically provided by the IRS.[3] The statutory average marginal tax rate on capital gains can be calculated by applying the standard deduction to each bracket of income to find the corresponding marginal tax rate, and averaging these rates by the capital gains reported in each bracket. The resulting tax rates are reported in Table 1 (columns 1 and 2), and they provide a standard to which tax rates calculated with more sophisticated methods can be compared. This approach, however, seriously overstates EMTGs both because it ignores most of the tax law provisions concerning deductions, exclusions, and credits painstakingly enacted by our lawmakers. More important, it understates the average holding period since corporate stocks have a higher turnover than less liquid forms of capital.

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[3]The IRS has published such data for 1973 and 1962. In both cases, the average holding period for corporate stock, weighed by reported net capital gains, is 17 years. Reported net capital gains are the difference between gross gains and gross losses. The calculations assume an average holding period of 22.5 year for the "over 20 years" category and 7.5 years for the "not determinable" category.

A better approach is to estimate the actual marginal tax rates of investors reporting capital gains (henceforth the AMTG) with methods similar to Joines (1981) and Seater (1982), and to adjust these AMTGs by estimating an average holding period, as attempted by Bailey (1970). Data necessary to estimate both the AMTG and an average holding period are readily available. The following section fully describes the above approach. Table 1 (columns 3 and 4) reports the results of these calculations. Implementing this approach necessarily involves several simplifying assumptions explained more fully below, so that the estimated EMTGs cannot be viewed as precise numbers. But the magnitude of the estimates leads to the conclusion that the EMTGs have been rather small and have been on average smaller in the 1970s than in the 1960s.

This conclusion supports the Miller and Scholes (1978) contention that the U.S. tax system is evolving into a pure consumption tax, because sufficient elasticity has been built in to the tax code to allow savings to escape taxation altogether. It also supports the view advanced in Miller (1977) that low effective capital gains tax rates allow common stock to be a viable financial instrument. Furthermore, it suggests that any wedge between before-tax and after-tax real rates of return which may be caused by capital gains taxes has not increased substantially with rising inflation.

It is, however, incorrect to conclude that small EMTGs imply the distortions caused by the tax code are small as well. Distortions induced by taxes on capital gains are measured not only by their

effect on net investment and the aggregate capital stock, but also by the misallocation of aggregate investment caused by differential tax treatment, and by the resources devoted to the invention of tax-minimizing strategies and to the securing of preferential tax treatment. For instance, the statutory average marginal tax rate for capital gains in 1978 is 21.5 percent, compared to an average of 5.7 percent reported in Table 1 (column 4). Table 1 (Column 3) shows that taxpayers reduce the 1978 marginal tax rate on capital gains (AMTG) from 21.5 percent to 12.3 percent by using the provisions of the tax code. Since the tax code changes the relative after-tax returns of investments compared to the before-tax returns, this reduction in AMTG implies some suboptimal allocation of resources. The remaining reduction--from 12.3 to 5.7 percent--is achieved by delaying the realization of capital gains. But Green and Sheshinski (1978) and Feldstein and Yitzhaki (1978) show evidence that holding periods for capital gains is longer than optimal, which implies further efficiency loss.

AN ALTERNATIVE APPROACH TO ESTIMATING EMTGs

The alternative approach outlined in the previous section consists of two separate calculations since it is necessary to obtain estimates of AMTGs, and an estimate of the average holding period to use for calculating EMTGs.

a. Actual Marginal Tax Rates on Capital Gains (AMTG). Since statutory marginal tax rates on income grossly overstate the actual marginal tax rates to which capital gains are subjected, one must

turn to the tax experience reported by the IRS for further clues as to the value of the AMTGs. Joines (1981) and Seater (1982) have used similar methods to compute the actual marginal tax rate for each income bracket. Both authors have defined the marginal tax rate as the increase in taxes to a representative taxpayer moving from one bracket to the next, divided by his increase in income. To get the AMTG, these marginal tax rates are weighted by reported net capital gains for each bracket. This concept of the marginal tax rate is an "average" concept in more than one sense. Not only is it weighted by the ex-post distribution of reported capital gains, but it also assumes that additional income from whatever source carries with it an average amount of tax relief. In other words the marginal tax rates reported here are averaged both over income groups and types of income.

Table 1 (column 3) reports AMTGs that use the marginal tax rates for each bracket as calculated by Seater (1982). The reported tax rates have already been divided by 1/2 to account for the 50-percent exclusion for capital gains. This series is not adjusted for capital gains taxes levied by states because treatment of capital gains is not uniform across states.

The AMTGs reported here move much the same way as the statutory rate series. The major tax code revision in 1963-64 is apparent in both series, and the two tax rates decline and rise together from 1972 through 1978. The level of the AMTGs is approximately 58 percent that of the statutory rates and reflects the impact of the

tax code provisions and the way in which they are used by taxpayers. The ratio is higher in the second half of the sample period relative to the first.[4] This increase may be due to the various reforms and attempt to close "loopholes" in the tax code or to the impact of the higher inflation on tax shields.

b. Estimates of the Holding Period (N). The IRS makes available short-term and long-term reported capital gains and losses by individuals and fiduciaries annually, and data on estate taxes periodically (see data appendix).

The ratio of reported capital gains to capital gains generated during any year provides information about the average holding period. In an economy that generates capital gains on average, a small ratio of reported capital gains, R(t;N), to all capital gains generated during that year, CG(t), indicates a long holding period, N, and vice versa.

Appendix 1 describes a simple model used to derive an analytic expression for this ratio,[5]

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[4]These differences are statistically significant at the 1 percent level under the assumption that the ratios are independent drawings from one distribution for 1960-69 and another for 1970-78. The means and standard errors of the distributions are, respectively, .56 and .03 for 1960-69, and .60 and .01 for 1970-78.

[5]δ is the real growth of the capital stock, α is the proportion of new investment financed by issuing new securities; $\mu = \delta + \pi$ and $\gamma = (1-\alpha)\delta + \pi$ where π is the growth rate of the nominal market price of capital.

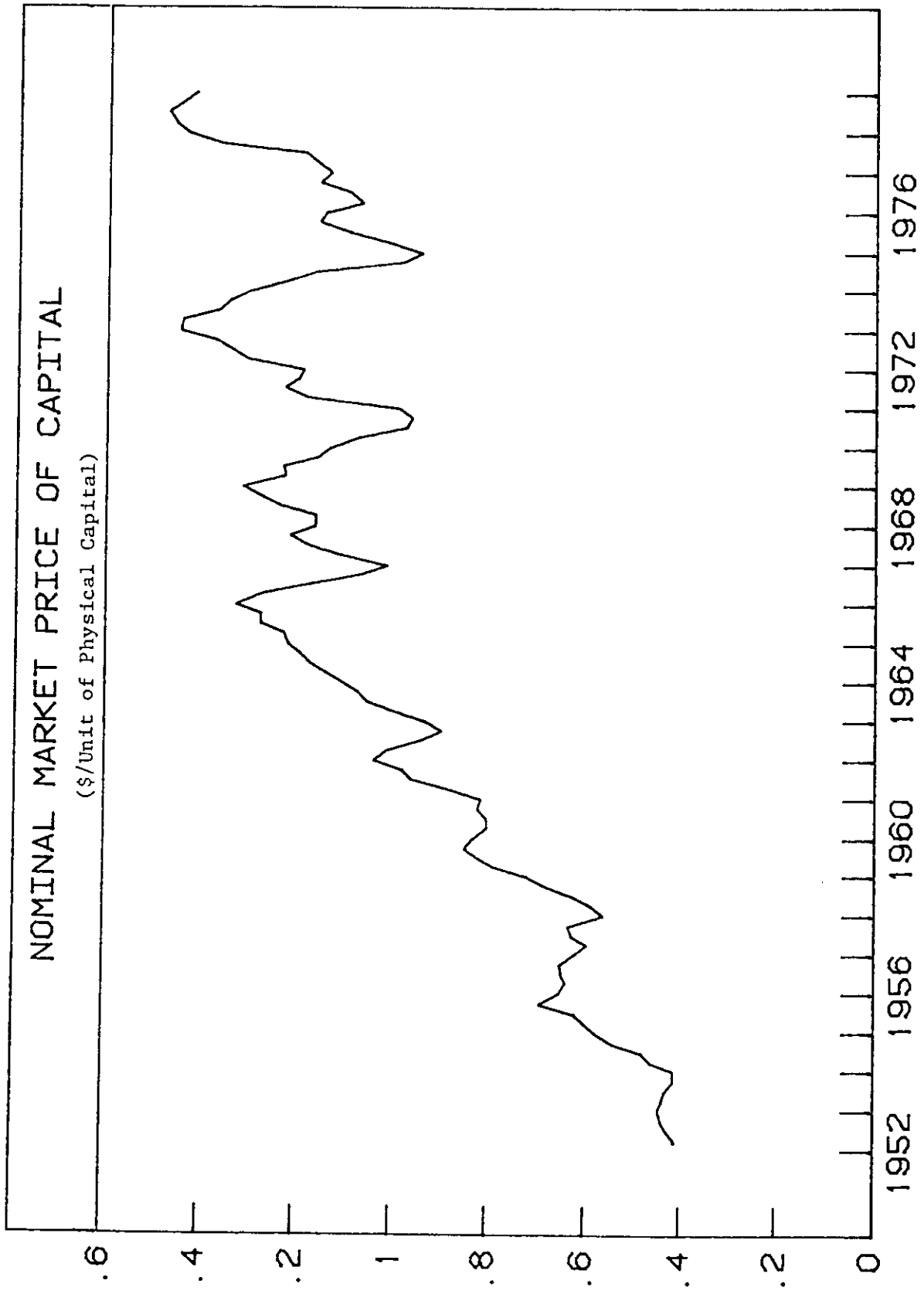
$$(2) \qquad \rho(N) \equiv \frac{R(t;N)}{CG(t)} = \frac{e^{-\mu(N-1)}}{e^{\gamma}-1} \{(1-e^{-\alpha\delta})e^{\gamma N} + (e^{\gamma N}-1)\frac{e^{-\alpha\delta N}}{N} - \frac{\alpha\delta}{\mu}(1-e^{-\mu})\}.$$

Since this ratio can be calculated from available data for each year, (2) can be used to estimate N. (2) is derived from a one-sector model, with a smooth growth of the capital stock and money prices. Firms retain some of their earnings and pay the rest out in dividends. Any additional financing is obtained by issuing new shares continuously, and all shares are unlevered equity. Investors hold shares for N periods (holding period) and then sell them at their market value and report the capital gains.

The model admits no uncertainty or fluctuation in the rate of growth of any of the magnitudes. Consequently, capital gains generated each year are calculated as if the nominal market price of the capital stock was growing smoothly every year.[6] An examination of the nominal market price of capital, p(t), reveals that the series appears to be growing at a much higher rate up to about 1964 than in the subsequent period (see Figure 1). Furthermore, after 1964 the series exhibits larger fluctuations than in the previous period. To obtain a better estimate of N, equations (1c) and (2) are adjusted to

[6]The data used are described fully in the data appendix.

FIGURE 1


NOMINAL MARKET PRICE OF CAPITAL
($/Unit of Physical Capital)
1.6
1.4
1.2
1
.8
.6
.4
.2
0
1952
1956
1960
1964
1968
1972
1976
QUARTERLY OBSERVATIONS

take account of the change in the average growth rate.[7] No attempt has been made, however, to take into account either the observed fluctuations or the impact of uncertainty. To do this would immensely complicate the task at hand. Furthermore, it is not at all clear, given the aggregate nature of the data and the approximations involved in the estimates, that the complications introduced by such a refinement will significantly increase precision.[8]

To use equation (2) the proportion of net investment financed through issues of new securities, α, must be estimated. α is calculated as one minus the average of the yearly ratios of retained earnings (adjusted for capital consumption) to new business investment, including inventories. This estimate is rough at best, because retained earnings in any one period need not be used to pay for physical capital acquisitions in that period, and because cash flows can be generated or absorbed through changes in balance sheet

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[7]The average annual growth rate before 1964 is $\pi_1 = .084$ while the rate after 1964 is $\pi_2 = .008$. By contrast, the growth of the physical capital stock is very steady throughout the period at $\delta = .039$. It turns out that incorporating the difference in growth rates increases the estimate of the average holding period by approximately 10 years.

[8]The net effect of taking into account the observed fluctuations is likely to be a reduction in the variance of $\rho(N)$ as calculated from the data. The reason is that assuming smooth growth understates the true $\rho(N)$ by overstating true capital gains when the price of capital is rising slowly or falling, and vice versa. An offsetting correction to (2) would result, however, because this formula overestimates reported capital gains arising from periods of small capital gains or capital losses. The absence of these corrections is less likely to cause serious bias on the average N calculated from (2).

items not included in retained earnings.[9] Holding period estimates are therefore reported for a range of α's.

Since data on capital gains are available annually, it is possible to estimate an implied N from equation (2), for each year (conditional on α). The average of these annual estimates is taken to be the holding period in the calculations below. Holding periods estimates from (2) range from 36 years ($\alpha = 0.05$) to 24 years ($\alpha = 0.35$).[10] Since it is highly unlikely that $\alpha = .05$, the EMTGs reported in Figure 1 (column 4) are for N=31 and 24. These holding period estimates are higher than the IRS estimate of 17 years for corporate stock portfolios.

There are two principal reasons why the economy-wide average holding period is larger than that for corporate shares. The first is that non-corporate capital is generally less liquid than corporate capital and thus likely to have a much longer holding period. And within corporate capital, publicly traded shares will have the shortest holding period. The second is that some realized capital gains are not reported because of tax evasion. (See Bailey (1970) for a discussion of the impact of tax evasion.) BLS data show that approximately 36 percent of the non-residential capital stock is non-

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[9]For example, new investment can be financed by decreasing accounts receivable or cash or by increasing accounts payable.

[10]The results were: (standard errors in parentheses)

α:	0.05	0.15	0.25	0.35
N:	36	31	27	24
	(1.70)	(1.70)	(1.90)	(2.00)

corporate. Assuming the extreme case that non-corporate capital gains are never realized but that there is no tax evasion at all, the holding period estimates here imply a holding period for corporate capital between 15 and 13 years. This is slightly less than the IRS estimate of 17 years, suggesting that the holding period estimates reported above are reasonable and possibly underestimate the true holding period.

In fact, the method described here is likely to underestimate the holding period. This is because the value of shares includes the value of all firm assets, but the measure of the capital stock used here does not include accounts receivable, cash, and the value of brand names, patents, and other proprietary technological knowhow. Thus the measure here understates total capital gains because it underestimates the total value of firms (basis) on which capital

gains are computed.[11] This in turn overstates the ratio, $\rho(N)$, which results in an underestimate of the holding period.

Table 1 (column 4) lists the range of EMTGs using the holding period estimates of 31 to 24 years and the AMTGs as calculated by Seater. These numbers are much lower than the statutory rates and the difference is evenly divided between the effect of the tax code on the marginal tax rates applicable to realized capital gains (column 3) and the effect of the holding period. The EMTGs reported are small, suggesting that capital gains are not heavily taxed. This implies that the contribution of inflation to the difference between before and after tax real rates--the tax wedge--is modest. The hypothetical example in Table 2 illustrates this point.

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[11] An alternative way to measure the basis for capital gains is to use the value of the stock market together with an estimate of the proportion of total gains generated by the stock market. This measure, however, overestimates the basis, because it double counts shares held by other corporations. Bailey (1970), in a study covering 1925 thru 1961, uses a 1959 IRS estimate that 48.8 percent of all capital gains are from corporate shares and finds the average holding period to be in excess of 100 years. To assess the impact of the different methods of determining the basis, I estimated the holding period from 1952-61 using the methodology of this study but Bailey's data. The holding period estimates range from 81 to 111 years, somewhat smaller than his. Using both the methodology and the data of this study, the holding period estimates for 1952-61 range from 29 to 37 years. This indicates that holding periods in 1952-61 were somewhat longer than in 1960-78, but that the major difference in the results is due to the different methods of determining the basis.

TABLE 2

THE INFLATION-INDUCED TAX WEDGE

Before-tax Real Rate	Inflation Rate	Capital Gains	Capital Gains Tax Rate	After-tax Real Return	Tax Wedge as a Percent of Before-tax Real Rate
.02	0	.02	.20	.016	20%
.02	.10	.12	.20	-.004	140%
.02	0	.02	.05	.019	5%
.02	.10	.12	.05	.014	35%

Furthermore, since the effective marginal tax rate depends in part on the inflation rate (through the implied discount factor γ in 1c), the effect of inflation on the after-tax real rate of return will be even smaller than shown in Table 2.

As discussed in the introduction, the low EMTGs reported in Table 1 are not evidence that the capital gains tax law provisions cause small distortions. They are only evidence that the tax code allows economic actors to choose labor supply, consumption, and investment strategies which effectively reduce capital gains taxes.

The distortions caused by the capital gains tax provisions can be separated into two parts. The first relates to the impact of the marginal income tax rates on the holding period. The higher these rates the longer the holding period is likely to be. The size of the distortion then depends on the nature of available investment opportunities and the restrictiveness of the tax code. The second

part relates to the wedge between the price of current and future consumption and it depends on the size of the effective marginal tax rate on capital gains.

To take an extremely simple example, consider an economy with only one type of investment available and with inelastic supplies of savings and labor. Output and the capital stock would be unaffected by the magnitude of the capital gains tax in such an economy. If an alternative investment opportunity which is tax exempt but yields less than the current pretax return becomes available, the economy will become less productive, because new resources will be diverted to the less productive investment. Thus lower productivity will coincide with lower effective capital gains tax rates. If, on the other hand, the alternative investment opportunity was equally productive, the effective capital gains tax rate would fall but without a decrease in productivity. Estimating the effective marginal tax rate on capital gains is only a first step in assessing the distortionary impact of capital gains taxes.

APPENDIX

Let $k(t)$ be the real capital stock and δ its growth rate, $p(t)$ the money price of capital and π its growth rate, $s(t)$ the number of shares outstanding and β their growth rate and $\sigma(t)$ the price per share. The economy is in steady state.

(A-1a) $$p(t)k(t) = p_o k_o e^{\mu t}, \text{ where } \mu \equiv \delta + \pi.$$

(A-1b) $$s(t) = s_o e^{\beta t}.$$

(A-1c) $$\sigma(t) = \sigma_o e^{(\mu-\beta)t}.$$

If α is the proportion of new investment financed by issuing new shares, then

(A-2) $$s(t) = s_o e^{\alpha\delta t}, \text{ and } \sigma(t) = \sigma_o e^{\gamma t},$$

where $\gamma \equiv (1-\alpha)\delta + \pi$, and $p_o k_o = \sigma_o s_o$. (2) can be derived by equating the market value of the new investment to be financed through security issues to the market value of the new securities, $p(t)k(t) = \delta(t)s(t)$, which shows that necessarily $\beta = \alpha\delta$.

The capital gains generated between $\hat{t} - 1$ and $\hat{t}$ are

(A-3)
$$CG(\hat{t}) = s(\hat{t}-1)\,[\sigma(\hat{t}) - \sigma(\hat{t}-1)].$$
$$CG(\hat{t}) = \sigma_o s_o e^{\mu(\hat{t}-1)}[e^{\gamma}-1].$$

To calculate <u>reported</u> capital gains at t_o, assume that an individual in the economy holds assets for N periods. At t_o+N, she sells the assets purchased at t_o, and realizes her capital gains over the whole period. At time t_o assets available for purchase, $\tilde{s}(t_o)$, are composed of those assets which investors sell in order to realize their capital gains (one Nth of the assets that existed N period ago, $\frac{1}{N} k_o e^{\alpha\delta(t_o-N)}$), plus the newly issued securities during the previous year (from t_o-1 to t.).

The newly issued securities between t_o-1 to t_o are

$$\int_{t_o-1}^{t_o} \dot{s}(t)dt = [1 - e^{-\alpha\delta}]s_o e^{\alpha\delta t_o}.$$

Thus the total number of securities purchased by investors at t_o is composed of the "new" securities that were issued during the year and the "old" securities that existed N periods ago,

$$\tilde{s}(t_o) = [1 - e^{-\alpha\delta}]s_o e^{\alpha\delta t_o} + \frac{1}{N}s_o e^{\alpha\delta(t_o-N)}.$$

(A-4)

$$\tilde{s}(t_o) = [1 - e^{-\alpha\delta} + \frac{1}{N}e^{-\alpha\delta N}]s_o e^{\alpha\delta t_o}.$$

The aggregate capital gains on these assets over N (N > 1 year) periods are given by the change in the market value of the securities purchased at t_o and sold at t_o+N. In addition, since the new securities are issued continuously, these is a small capital gain that accrues only to the new securities and is the gain that accrues to them between the time they are issued and t_o, $\Delta(t_o)$.

(i) $$\Delta(t_o) = \int_{t_o-1}^{t_o} \dot{s}(t)dt \; \alpha(t_o) - \int_{t_o-1}^{t_o} \dot{s}(t)\,\alpha(t)dt.$$

(ii) $$\Delta(t_o) = \sigma_o s_o e^{\mu t_o}[1 - e^{-\alpha\delta}] - \sigma_o s_o e^{\mu t_o}[1 - e^{-\mu}]\frac{\alpha\delta}{\mu}.$$

(iii) $$\Delta(t_o) = \sigma_o s_o e^{\mu t_o}[1 - e^{-\alpha\delta} - \frac{\alpha\delta}{\mu}(1 - e^{-\mu})].$$

Capital gains reported at t_o+N then are,

$$R(t_o+N) = \hat{s}(t_o)[\alpha(t_o+N) - \alpha(t_o)] + \Delta(t_o),$$

(A-5)

$$R(t_o+N) = \sigma_o s_o e^{\mu t_o}\{(1 - e^{-\alpha\delta})e^{\gamma N} + (e^{\gamma N}-1)\frac{e^{-\alpha\delta N}}{N} - \frac{\alpha\delta}{\mu}(1 - e^{-\mu})\}.$$

The ratio of capital gains reported at $\hat{t}$ (5) to capital gains generated between $\hat{t}-1$ and $\hat{t}$ (3) can be found by substituting $t = t_o+N$ and taking the ratio of (3) to (5).

$$\rho(N) = \frac{R(t_o+N)}{CG(\hat{t})}$$

(A-6)

$$= \frac{e^{-\mu(N-1)}}{e^{\gamma}-1} \{(1 - e^{-\alpha\delta})e^{\gamma N} + (e^{\gamma N}-1)\frac{e^{-\alpha dN}}{N} - \frac{\alpha\delta}{\mu}(1-e^{-\mu}) \}$$

which is equation (2) in the text, used to estimate N.

DATA APPENDIX

1. Annual reported capital gains are collected from IRS publications and include capital gains by individuals and fiduciaries. Capital gains for fiduciaries are available only for 1960, 1965, 1970, 1974.[1] Missing data were interpolated. The net short term and long term capital gains are adjusted by the carry-over to derive the capital gains and losses actually reported in each year. This adjustment is equivalent to assuming that each taxpayer can write off all losses against gains each year so that no carry-over is generated.

A detailed analysis by the IRS (1973) shows that housing gains reported in the capital gains data were only 4 percent of the total for that year. Since more recent estimates are not available all reported gains are multiplied by .96 in an attempt to isolate the holding period of nonresidential capital stock.

An additional adjustment had to be made because estates do not pay capital gains taxes. Thus, when an estate is probated, capital gains are not reported and capital gains taxes are not paid, whether or not stocks are sold. The IRS has published detailed estate tax data for 1976, 1972, 1969, 1965, 1962 and 1959. Since the total value of corporate stock held by estates is available, it is possible to estimate the capital gains that would have been reported had the estate portfolio been liquidated at death. I estimated these capital gains by assuming a holding period of 20 years (somewhat larger than the of 17 years estimated by the IRS) and using the growth rate of share prices applicable to each period. Estimated capital gains were

	1976	1972	1969	1965	1962
$billion	7.0	6.9	7.7	8.3	7.0

The missing data were interpolated. If capital gains from estates are not included, the holding period estimates rise by 7-10 years.

2. Capital gains generated each year are calculated by assuming smoothly growing capital stock and price of capital. The estimate of the replacement value of non-residential capital is from Musgrave (1976) (with the 1981 benchmark revisions) and has been adjusted by adding inventories. Inventories were added both because share prices

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[1]Realized Capital Gains for fudiciaries were:

	1974	1970	1965	1960
$billion	2.9	2.6	4.0	1.8

reflect the value of inventories, and because the real price of capital has been computed including all corporate assets except cash.

To get the market value of capital, the replacement value including inventories is multiplied by the real price of capital, Tobin's q. The estimates of q used here are from Ciccolo (1980) and are calculated from the ratio of the market value to the replacement value of 237 firms listed in the COMPUSTAT tapes. The Economic Report of the President publishes an alternative series which gives essentially the same results. To get the nominal market price of capital, p(t) in the model, the market value of the capital stock is divided by the physical stock of capital.

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TABLE 1

MARGINAL TAX RATES ON CAPITAL GAINS[a]

Year	(1) Statutory Average Marginal Tax Rates on Capital Gains	(2) EMTG range for Column (1). N = 17 years[b]	(3) Actual Average Marginal Tax Rate on Capital Gains (AMTG)	(4) EMTG range for Column (3). N = 31-24 years[b,c]
1960	26.1	12.8 - 13.4	14.6	4.3 - 5.6
1961	26.3	13.0 - 13.6	14.9	4.4 - 5.7
1962	27.1	13.4 - 14.0	15.0	4.4 - 5.7
1963	25.9	12.8 - 13.3	14.6	4.3 - 5.5
1964	24.3	11.8 - 12.4	11.8	3.4 - 4.4
1965	22.7	11.3 - 11.8	11.8	3.5 - 4.5
1966	22.1	11.2 - 11.7	13.1	3.9 - 5.2
1967	22.7	11.8 - 12.4	13.0	4.0 - 5.3
1968	25.2	13.7 - 14.3	15.2	4.8 - 6.4
1969	26.9	15.0 - 15.7	15.8	5.1 - 6.8
1970	22.7	12.8 - 13.4	13.7	4.5 - 6.0
1971	21.5	12.4 - 13.0	13.3	4.4 - 5.9
1972	22.3	13.3 - 13.9	13.3	4.5 - 6.1
1973	21.4	13.0 - 13.6	12.6	4.4 - 5.9
1974	20.1	12.5 - 13.1	12.1	4.3 - 5.8
1975	20.2	12.9 - 13.5	11.9	4.3 - 5.8
1976	18.1	11.8 - 12.4	11.1	4.1 - 5.6
1977	21.2	14.4 - 15.1	12.4	4.7 - 6.4
1978	21.5	15.0 - 15.8	12.3	4.8 - 6.6

[a] Housing is excluded from capital. For a discussion of the treatment of capital gains on housing, see the Appendix.

[b] The range reported is for values of γ that correspond to $\alpha = .15$, $\alpha = .35$. γ appears in (1c) and is defined in footnote 3.

[c] $\alpha = .15$, $N = 31$ gives the lowest tax rate, while $\alpha = .35$, $N = 24$ gives the highest rate.