

# XIII

The Royal Commission on Taxation, generally known (after its chairman) as the Carter Commission, produced for Canada in 1966 one of the most profound and comprehensive proposals for general tax reform that has ever been issued. It is rare that a public document should itself stand as a landmark in the intellectual development of a subject, but this one surely does. This final chapter gives my overall appraisal of the report and then engages in a rough, empirical exercise which attempts to estimate the potential capital-market effects of the Carter Commission proposals.

## Chapter 17

### A Landmark in the Annals of Taxation

The Report of the Royal Commission on Taxation is without doubt a landmark among public documents — of any nation — setting forth policy prescriptions in the tax field. No such document, to my knowledge, has ever equalled its combination of positive attributes — scope, comprehensiveness, consistency, depth of theoretical and empirical analysis, and respect for the basic economic criteria of efficiency and equity. The Commission and its staff deserve our greatest respect and admiration for a monumental achievement. If their Report leads, as it should, to the kind of basic reform of the Canadian tax system which it recommends, they will have performed a tremendous service for the Canadian economy and society. Moreover, I am confident that adoption of their proposals will make the Canadian tax system one that will be emulated by other countries all over the world. Movements for tax reform are powerful in many areas — especially in the Latin American countries which I know at first hand. The economics profession is gaining strength and influence in these countries, and their political climate is increasingly favorable to changes aimed at strengthening and revitalizing their economies. I am sure that, seeing the proposed Canadian system in operation, more than one or two of these countries will find in it the type of reform — even-handed in its equity and conducive to economic efficiency and growth — that they are seeking. And I myself would hope that the new Canadian system would also stimulate my own country to surmount the many political obstacles that stand in the way of fundamental tax changes, and introduce reforms moving our tax system in the direction so clearly and cogently signalled by the Royal Commission's Report.

#### I. A GENERAL OVERVIEW

It is not easy briefly to characterize a report of such scope, but I would venture to say that its keystones are the recommended integration of the corporation and personal income taxes on the one hand and the recommended adoption of

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the comprehensive income tax base on the other. The first of these key recommendations entails, for all practical purposes, the abolition of the corporation income tax, and it is to this aspect that I will turn first. It has always been a source of puzzlement to me how the income from equity capital invested in corporations ever came to be chosen as the relevant base for any tax at all, let alone a tax with rates of the order of magnitude of 50 percent. One might argue on grounds of equity that wealth as well as income is relevant as a measure of ability to pay, and thus justify a special tax, in addition to the ordinary income tax, falling on wealth. In the same vein one might justify a special tax striking the income from wealth rather than wealth itself. But this latter system would be a far cry from the corporation income tax, which isolates just one component of the income from wealth — corporate net earnings — and levies on it a discriminatory tax at a high rate.

Sometimes one hears the argument that the corporation income tax is justified as a payment to the government for the privilege of incorporation. The only sense that can be made of this argument — if it is regarded as justifying the tax from a social welfare point of view — is that corporations engender external diseconomies in amounts which are proportional to their profits — clearly an absurd contention! Indeed, it is highly likely that the use of capital in the corporate sector, far from producing external diseconomies, generates external benefits on a scale far surpassing that of other uses of capital. The corporate form enables large sums of capital to be assembled, permits the exploitation of economies of scale which would otherwise remain unexploited, fosters the development of a capital market in equities which otherwise would not exist, and prevents the type of monopoly power that extremely wealthy families would have in its absence. Moreover, the corporate sector has clearly been one of the principal generators of technical advance, which in turn has been one of the major forces of economic progress in all modern economies, and has been responsible for a considerable share of the rise in living standards of consumers. In so far as consumers have obtained very substantial benefits from technical progress, it is clear that the economic agents responsible for generating such progress have not enjoyed the full fruits of their efforts; an externality of major proportions is present here.

For the reasons just stated, it is clear that the integration of the corporate and personal tax system would be a major achievement which would promote a more rational allocation of resources within Canada and provide a climate more conducive to economic growth.

The Report's recommendation of a comprehensive personal income tax base is equally deserving of our applause. Economists have long recognized that the most consistent and relevant definition of income is the amount which the unit in question could consume while conserving the value of its capital assets. This obviously includes income in kind, accruing capital gains, and gifts and inheritances received. The Report attempts to incorporate all of these items in the income tax base, permitting an ample resort to averaging in order to avoid discrimination against households with volatile income streams. The only serious compromise reflected in the Report's recommendations in this regard is its opting for the taxing of capital gains on realization rather than on accrual.

The reasons for the Report's position on this matter are administrative convenience and political acceptability. It is indeed difficult for the tax authorities to verify whether reported accruals for tax purposes were approximately equal to movements of market values of assets, except for such assets as corporate securities with regularly quoted market prices. Moreover, the prospective burden on taxpayers of estimating for tax purposes the changes in their asset values each year would surely detract some political support from the proposal as a whole. And, indeed, the best approach to accrual taxation of capital gains — self-assessment by the taxpayer with a commitment to sell to anyone who bids a certain percentage over the taxpayer's declared value — would probably raise serious legal problems as well as alienate many potential supporters of the program.

One should also note that the Report does go part of the way toward accrual taxation, for corporate savings are indeed to be included in the personal tax base, and reflected in a corresponding change of the taxpayers' "cost basis" for the purpose of computing subsequent capital gains or losses. Thus a stockholder whose shares had gained in value an amount reflecting the cumulated retained earnings per share over the period he had held the stock would have, on the sale of the stock, neither a capital gain or loss for tax purposes. He would, in effect, have paid tax on his capital gains, roughly as they accrued.

Compromise is evident, too, in a few other areas. Though the Report recommends tightening the taxation of mineral industries, the proposed treatment for these industries is still significantly more favorable than that accorded to others. Likewise, the recommended tightening of the limits of bank reserves for bad debts, while a step in the right direction, still permits deduction for tax purposes of up to three times the amounts that would reflect the actual loss experience of the banks for certain classes of loans. In a similar vein, we have the recommended exemption from tax of capital gains on the sale of houses, up to a lifetime limit of \$25,000, and the recommended annual (\$100 for children and \$250 for adults) and lifetime (\$5,000 per individual) exemptions of gifts from outside the family unit. Strict economic considerations could never justify these decisions, particularly when it is recognized that the value of the exemptions to the taxpayer is proportional to his marginal tax rate.

Compromise of a sort is also involved in the Commission's recommendations of five-year block averaging and of the institution of non-interest-bearing income adjustment accounts. Cumulative lifetime averaging is evidently fairer than the proposed system and is no more difficult to administer. And it has the great advantage of eliminating the necessity for the taxpayer with windfall gains to opt for an averaging strategy — a strategy which entails, among other things, predictions as to what will be the future course of the taxpayer's income and which therefore can prove to be against the taxpayer's best interest if his expectations are not in fact fulfilled. The compromise in this case stems from the fact that Canada already has block averaging for fishermen and farmers; the public is therefore likely to be less distrustful of a system whose workability has been proved than of a better system which is completely new.

In using the word compromise in connection with the above imperfections of the proposed system, I do not mean to criticize the Commission for having

opted as it did. Compromise is often essential for reaching political decisions, and the imperfections referred to are certainly of minor importance compared with the vast superiority of the proposed system, taken as a whole, over the present one. I mean instead to indicate that from a purely technical point of view the Commission's Report, in the minor ways in which it can be faulted, must be faulted for not going quite far enough rather than for going too far.

## II. A KEY MACROECONOMIC ISSUE

In this part, rather than investigate details of the proposed reform, I would like to turn attention to one key macroeconomic issue which is critical to foreseeing the ultimate consequences of adopting the Commission's proposals. This issue is, in brief, what will happen to interest rates and stock prices in Canada? In section A I explore the probable consequences of a situation in which interest rates are unaffected by the tax change; in section B I pursue the implications of stock prices being unaffected by the change; and in section C I attempt a judgment as to the likely course of interest rates and stock prices if the Report's recommendations are adopted.

*A. Assuming Interest Rates Unaffected.* At the present time, I believe that something close to equilibrium prevails in the securities markets of Canada and the United States, in the sense that the relationship between earnings yields on stocks and interest rates on bonds in each of the countries appears to have reached something close to its long-run equilibrium. Both types of yield are modestly higher in Canada than in the U.S., the premium perhaps reflecting the price that must be paid by Canada to attract American capital. The available evidence indicates that the net flow of capital to Canada is highly responsive to small changes in the premium.

In this section we make the extreme assumption that the supply of debt capital to Canada, at the prevailing premium of interest rates, is essentially infinitely elastic. We assume, both here and in subsequent sections, that the over-all equilibrium of the capital market requires that the after-tax earnings yield on stocks be closely related to (though not identical with) the after-tax yield on bonds for the typical shareholder. It follows from these assumptions that there would be a clear tendency for the prices of Canadian equities to rise, as a result of the proposed effective abolition of the corporation income tax as far as Canadian shareholders are concerned.

This rise in equity prices would take place in advance of the actual entry into force of the new tax laws. It would begin as soon as a significant group of owners of capital was ready to bet on the possibility of adoption of the Report's proposals, and it would surely be virtually complete by the time most people were convinced that the proposals would be adopted. During the interval, anyone who believed that the Report's recommendations would be implemented would have an incentive to speculate on the expected rise of Canadian share prices. Canadian bondholders would tend to switch to stocks; Canadians with investments abroad would tend to repatriate capital for investment in the

stock market; and foreigners willing to speculate on the anticipated rise of the Canadian market would bring in new funds for that purpose.

If the inflows from abroad were considerable, there would be a correspondingly great readjustment in the composition of Canada's balance of payments, the equity inflows being counterbalanced by reductions in Canada's foreign indebtedness (under the assumption of an infinitely elastic supply of debt capital to Canada).

Once the rise in share prices had taken place, foreigners would tend to sell their holdings of Canadian equities. Under the proposed tax set-up, these shareholders would face a tax regime essentially the same as the one prevailing today. The rise in share prices would present them with a capital gain, and in this sense they have no grounds to argue that they would be treated unfairly under the new system. But their earnings per share (unlike those of Canadian stockholders) would be no different under the new system than under the old. The possibility of selling Canadian shares with earnings/price ratios of, say, 4 percent, and of buying, say, shares in United States companies with earnings/price ratios of 6 percent, would surely be attractive to these foreign shareholders. Thus, the benefit of the new system to them consists only of the prospective rise of Canadian share prices. Once this had taken place, it would be to their advantage to sell to Canadians.

A similar change would take place in the incentives for Canadian capital to be held abroad, once the rise in share prices had taken place. The Report proposes that portfolio investors in foreign securities be given the option of claiming a 30 percent arbitrary gross-up and tax credit. "Because United States and United Kingdom corporations would ordinarily be deemed to have paid foreign taxes at least to the extent of 30 percent, Canadians holding portfolio investment in (such) corporations . . . could in general obtain 30 percent credit. . . . The dividend return from these shares would become more attractive than it is now, and this would mitigate the effect of full taxation of share gains."<sup>1</sup> Thus a Canadian shareholder of an American company with earnings (after United States corporation tax) of \$10 per share, would have to pay Canadian tax on the basis of earnings of \$13 per share, with a tax credit of \$3. A Canadian holder of a Canadian share with earnings of \$10 would simply pay income tax on that amount (owing to full integration). Thus if earnings after United States corporation tax are capitalized into share prices at the same rate as Canadian earnings before the Canadian corporation tax (which, after all, is no tax at all to Canadian shareholders but simply a withholding device), there would be no incentive for Canadians to repatriate their foreign investments and there might indeed be an incentive for Canadian capital to move abroad.

Turning now to foreign direct investments in Canada, two cases should be distinguished: (a) those foreign companies which, because of the scale of their operations, their "know-how," or the degree of differentiation of their products, possess enough monopoly power to preclude any reasonable possibility of serious competition by Canadian companies, and (b) those which are vulnerable to Canadian competition. The former group, if they maintain existing earnings

<sup>1</sup> IV, 535-536.

rates on invested capital, will be able to function much as they do under the present system. The latter group will, over time, be under pressure from Canadian competition to "go Canadian." This pressure will arise because Canadian companies will have access to a market for cheap equity capital. Earnings on Canadian equities, not being subject to corporation income tax, will reach an equilibrium level too low to attract foreign capital into competitive ventures in which its earnings would continue to be subjected to double taxation. By "going Canadian" the foreign companies could take advantage of the Canadian equity market, and restore their competitive position vis-à-vis local firms. As compared with the alternative of their drawing their new equity capital from abroad, this would of course entail a falling off in the rate of foreign direct investment, and indeed quite probably a significant shift of existing foreign companies to Canadian ownership. The reduction of inflow of direct investment is likely to be abrupt for the "competitive" companies, as they will be faced with prospects of declining net earnings over time. The tendency to liquidate foreign direct investments and to shift the operations to Canadian ownership is likely to be more gradual, as existing earnings rates are reduced through time in the face of expanded Canadian competition.

One can anticipate, therefore, rather volatile balance-of-payments movements at the outset; first a speculative inflow of equity capital as stock prices are bid up, and then an outflow as foreign portfolio investments in stocks are liquidated and as direct investment in "competitive" foreign companies falls sharply. The flow of direct investment over the longer term will probably remain substantially below current levels, in part because of a tendency to shift existing foreign companies more and more into Canadian hands. In this longer-term situation, the incentives affecting the choices of Canadian investors abroad are not likely to produce a reduction in outflow nearly sufficient to offset the other items mentioned. On the assumption of an elastic supply of foreign debt capital, of course, the flows of equity capital described above would be offset by opposite flows on debt capital account.

The major distributive consequences of implementing the Carter Commission's recommendations are to be found in (a) the capital gains and losses that will be generated by the shift, and (b) the reduction in the rate structure of the personal income tax. If, as we assume in this section, the interest rate remains unchanged, recipients of interest income will be benefited by having to pay lower rates of personal tax on that income. Thus the after-tax interest rate, which is the rate at which after-tax income is capitalized into bond prices, will rise, and the capitalization rates relevant for setting the prices of other capital assets such as stocks and real estate will increase correspondingly.

If the prices of all capital assets were to be unaffected by the tax change, the effects of the change on Canadian owners of capital would be limited to those stemming from the reduced rate structure. But asset prices will surely change under the assumption of constant interest rates. On the one hand, real estate prices are likely to fall, owing to the fact that capital gains on real estate, previously untaxed, would be treated as income under the proposed system. On the other hand, as has been indicated earlier, stock prices are likely to rise as a result of the net effect of (a) elimination of the corporation income tax as

far as Canadian shareholders are concerned, and (b) the taxation as income of capital gains on shares. In so far as capital gains on equities are a reflection of retained earnings, the net effect of (a) and (b) must be positive, for under this assumption retained earnings under the present system are taxed at the corporate tax rate of 50 percent, while under the proposed system they would be taxed at the shareholder's personal marginal rate, which would be less than or equal to the maximum proposed personal rate of 50 percent.

*B. Assuming Stock Prices Unaffected.* In making the assumption that stock prices are unaffected, I mean it to apply to the broad average of such prices, not to those of individual classes of equities. This clarification is necessary, for it is clear that the proposed changes will tend to have a greater positive effect on the prices of shares which up to now have had high dividends relative to earnings and consequently small expectations of capital gains than on the prices of shares with low pay-out ratios and high capital gains prospects. We assume, then, that the price of the "representative" share will not be influenced by the change, and that the representative share equally well reflects the portfolios of foreign and domestic shareholders.

Once it is assumed that stock prices are unaffected, we must abandon the assumption of section A regarding interest rates, for it was shown there that if interest rates remained constant, the prices of equities would tend to rise. In order for equity prices to be unaffected, Canadian interest rates must therefore rise relative to those in the United States. Such a rise is, of course, fully consistent with a high (though not infinite) elasticity of supply of foreign debt capital to Canada.

Under these circumstances, the process of adjustment to the tax change is quite different from that outlined in section A. Foreign portfolio investors now have no special incentive to invest in Canadian shares in anticipation of a capital gain, and since there is no change in share prices relative to the yields that foreign shareholders receive, there is no direct pressure for them to divest themselves of their Canadian equity holdings once the process of capitalizing expected changes in net-of-tax earnings into stock prices is complete.

Canadians, however, will have an incentive to shift from bonds to stocks, and foreigners to divest themselves of their existing holdings of Canadian bonds, in anticipation of the fall in the prices of these bonds which is implied by the expected rise of Canadian interest rates. Once the capitalization process is complete, the relative attractiveness of bonds and stocks for Canadians will be the same as before, but for foreigners Canadian bonds (which have risen in yield) will be relatively more attractive than Canadian stocks. Perhaps on this score there will be some reduction in foreign holdings of Canadian equities to counterbalance their increased holdings of Canadian bonds. There should also be some repatriation of Canadian capital held abroad as a consequence of the higher yields available in Canada.

The pressures on foreign companies competitive with Canadian ones to "go Canadian," which were potentially powerful under the assumptions of section A, are here non-existent; indeed, the competitive position of these foreign companies may be enhanced. If for given gross-of-tax earnings Canadian share

prices do not rise, the cost of equity capital to Canadian companies will remain as before; since foreign companies will under the proposed system be subject to essentially the same tax treatment as now exists, their cost of equity capital will also be unaffected. On the debt capital side, however, Canadian companies will face higher interest rates, while foreign companies, to the extent that they can raise debt capital for their Canadian operations in foreign markets, may be able to avoid some or all of this increase in the cost of such capital. Foreign direct investments are therefore in a distinctly superior position under the assumptions of this section than under those of section A.

Movements in the capital account of the balance of payments are likely to be significantly less if equity prices remain constant than if they rise significantly. To verify this, assume that as expectations of the tax shift develop, investors anticipate a rise in the prices of stocks which is significantly smaller than that implied in section A by the assumption of constant interest rates. There would now be an initial speculative inflow of capital from abroad, but of smaller magnitude than that anticipated in section A. The balance-of-payments pressures at this point would lead to a reduction of the Canadian short-term interest rate so as to induce a compensating movement in the foreign debt capital account. Once equity prices had risen, there would be an outflow of foreign equity capital similar to, but smaller in magnitude than, that envisaged in section A. This would be counterbalanced by a rise in the inflow of foreign debt capital, the attraction of which would require a rise in Canadian interest rates, granted that we are now supposing that the supply of debt capital to Canada is not infinitely elastic. The case covered explicitly in this section can be viewed as the limiting case of the present example, in which the rise in stock prices is negligible in magnitude.

The distributive consequences of the assumptions of this section are more adverse to capital in the short run, and more favorable in the long run than would be the case if interest rates were unaffected. Real property values will fall more sharply, and bond prices will now fall rather than remaining stable. In the long run, of course, the higher yield on savings will benefit capitalists on whatever new savings they place in the market and on the reinvestment of the proceeds of maturing bonds.

*C. Prospects for Interest Rates and Share Prices.* We take as the cornerstone of our assessment of the prospects for the future the strong link between the bond markets of New York and Toronto. At the time of writing (Spring 1967) the yields of long-term Canadian obligations average about 6 percent, with government obligations yielding about 5 1/2 and private bonds about 6 1/2 percent. These yields exceed those on comparable U.S. securities by something less than 1 percent, a relationship that has characterized the two markets for some time. The premium of Canadian rates over American rates is, of course, not constant, variations in this premium being the principal instrument by which the Bank of Canada controls the country's balance of payments.

It is clear from the preceding two sections that the likely direction of movement of interest rates will be upward. Section B's assumptions directly implied a higher rate, and section A's implied a substantial increase in the flow of

debt capital to the U.S. assuming an infinite elasticity of supply of such capital. Since we know that the relevant elasticity is not infinite, it is clear that the actual production of an increased flow of funds would require an increase in the premium of Canadian over American rates.

We now introduce the judgment that the increase in the premium could not plausibly be more than one full percentage point. In the context of today's bond market, this would mean an average long-term bond rate in Canada of some 7 percent, compared to a U.S. average rate of a little over 5 percent. This is clearly an extremely large (and to my knowledge unprecedented) value of the differential.

Finally, we make two alternative assumptions about the relationship between net-of-tax bond yields and net-of-tax stock yields for the typical stockholder. These are (a) that net stock yields are some multiple,  $m$ , of net bond yields, and (b) that net stock yields are equal to net bond yields plus an additive risk premium,  $a$ . Under the first assumption, the current relationship between gross-of-tax bond yields,  $r_B$ , and gross-of-tax earnings-price ratios on equities,  $r_E$ , will be

$$(17.1) \quad \begin{aligned} mr_B(1-t) &= .5r_E[\delta(1.2-t) + (1-\delta)] + \gamma \\ &= .5r_E[1 + \delta(.2-t)] + \gamma. \end{aligned}$$

The .5 factor preceding  $r_E$  reduces the earnings rate before corporation income tax to an earnings rate after corporation taxes. The dividend payout ratio,  $\delta$ , is augmented by 20 percent to reflect the existing 20 percent tax credit accorded to dividends, and the marginal personal tax rate,  $t$ , is then applied to dividends. Retained earnings [equal to  $.5r_E(1-\delta)$  per dollar of stock held] are assumed to generate normal capital gains of like amount. Capital gains over and above the amounts generated by retained earnings (what the Report calls "goodwill gains") are reflected in the additive term  $\gamma$ , which is the percentage per year by which stock prices are expected to rise due to causes other than retained earnings.

Similarly, the prospective relationship between bond yields and earnings-price ratios (designated by primes) under the proposed system will be, on assumption (a):

$$(17.2) \quad mr_B'(1-t') = r_E'(1-t') + \gamma(1-\lambda t').$$

Here  $t'$  is the marginal tax rate of the typical shareholder under the proposed system; equation (17.2) reflects the fact that this rate applies equally to interest received from bonds and to corporate earnings on equities owned by the taxpayer. Goodwill gains would also be subject to tax under the proposed system, but only upon realization; hence a discount factor  $\lambda$  is applied to reflect the fact that the present value of the taxes to be paid on capital gains accruing today is less than the undiscounted value of such taxes.<sup>2</sup>

<sup>2</sup> If a stock is gaining in value at 2 percent per year, the stockholder can actually consume this amount by selling 2 percent of his holdings each year. If he does this each year, even though he in effect consumes the entire amount of accruing capital gain, he only pays tax on 2 percent of his as-yet-unrealized gains.

If corporate earnings before taxes, accruing on the basis of shares currently outstanding, are (as is to be expected) unaffected by the tax change, we can substitute  $E/P$  for  $r_B$  in (17.1) and  $E/P'$  for  $r_B'$  in (17.2), thus deriving expressions relating stock prices ( $P$  and  $P'$ ) to their relevant determinants:

$$(17.3) \quad P = \frac{.5E[1 + \delta(2 - t)]}{mr_B(1 - t) - \gamma}$$

$$(17.4) \quad P' = \frac{E}{mr_B' - [\gamma(1 - \lambda t')/(1 - t')]}$$

We assume that the typical shareholder<sup>3</sup> now has a marginal tax rate of 50 percent, and that the typical company pays out 40 percent of its after-tax earnings in dividends. We take .06 as an approximation of the current level of  $r_B$ , and .125 as our estimate of the current ratio of before-tax corporate earnings to share prices for the typical corporation. It is difficult to estimate  $\gamma$  — the goodwill-gains term. In principle this should reflect expected rises in the value of real property held by the corporation, plus expected gains due to future inflation, plus gains stemming from investments with greater-than-normal real yield. The rise of stock prices in the last two decades should probably not be taken as a guide for estimating  $\gamma$ , as that rise mainly reflects a reduction in the risk premium on shares and hence a reduction in  $m$ . I shall tentatively assume that  $\gamma$  for the typical company is .005, but shall later make additional calculations for atypical companies for which  $\gamma$  can be greater.

We now insert the above values of the various parameters into (17.1) to obtain

$$m(.06)(.5) = .5(.125)[1 + .4(2 - .5)] + .005$$

or  $.03m = .06$ . The implied value of  $m$  is therefore 2.

<sup>3</sup> The term "typical shareholder" is a shorthand notation for a rather elusive concept. It refers to that class of shareholders which is at the margin determining the relative prices of securities. An example is the relationship between interest rates on tax-exempt bonds and those on taxable bonds in the U.S. If taxable bonds yield 6 percent and tax-free bonds yield 4 percent, the typical investor would have a marginal tax rate of 33 1/3 percent. The comparison between bonds and shares is somewhat more complicated because of the existence of a risk premium. We show in the text that with a ratio of 1:16 of after-corporation-tax earnings to share prices, a bond rate of 6 percent, and a dividend payout rate of 40 percent, a marginal tax rate of 50 percent implies indifference between stocks and bonds at the margin if the multiplicative risk premium is 2. Similarly, a marginal tax rate of 70 percent yields indifference at the margin when  $m = 3.05$ , and a marginal tax rate of 30 percent implies indifference when  $m = 1.5$ . In an oversimplified world in which all investors had the same  $m$ , equilibrium in the capital market would determine a marginal tax rate,  $t^*$ ; all investors with marginal tax rates above  $t^*$  would invest in shares; all with marginal tax rates below  $t^*$  would invest in bonds. The real world is more complicated, in that investors diversify their portfolios rather than concentrate them as they would if they operated on a strict criterion of expected net-of-tax yield. None the less, the basic idea of "typical" investors as comprising that group whose behavior determines the setting of security prices is a very useful concept for analysing security markets. The "typical" investor is not the average investor, and his tax rate is not the weighted average of the marginal tax rates of all investors. He is instead a member of that income group which is "at the margin" in determining security prices. It is to be presumed that this group will be somewhere near the middle of the population of shareholders, weighted by the number of shares they own; our assumed values of  $t$  and  $t'$  reflect this presumption.

Under the proposed tax regime, we assume that the marginal tax rate of the typical shareholder would be .4, and that  $\lambda$ , the discount factor applying to taxes paid on goodwill gains, would be .5. Terms  $E$ ,  $m$ , and  $\gamma$  are assumed to be the same as under the present system. Substituting the relevant values into (17.3) and (17.4), we find that  $P'/P$  is equal to 1.10. The rise in stock prices, which appeared on casual analysis in section A to be potentially very great in magnitude, turns out to be almost negligible, even if interest rates remain constant. And if  $r_B'$  rises to 7 percent (our upper limit),  $P'/P$  will be .935, and stock prices will actually fall.

For stocks with higher rates of expected goodwill gains, the prospects are even dimmer, for under the present system these gains are entirely exempt from tax, while under the proposed system they would be subject to tax. For the same values of the other parameters as were assumed above, a value of  $\gamma$  of .0175 will produce  $P' = P$  in the case where  $r_B'$  remains at .06. Any higher value for  $\gamma$  will produce  $P' < P$  even if interest rates remain constant. And if  $r_B'$  rises to .07,  $P' < P$  for all positive values of  $\gamma$ .

Turning now to the model with an additive risk premium, we have the following basic equations:

$$(17.5) \quad r_B(1 - t) + a = .5r_E[1 + \delta(2 - t)] + \gamma$$

$$(17.6) \quad r_B'(1 - t') + a = r_E'(1 - t') + \gamma(1 - \lambda t')$$

Substituting  $r_B = .06$ ,  $t = .5$ ,  $r_E = .125$ ,  $\delta = .4$ , and  $\gamma = .005$  into (17.5) we obtain our estimate of  $a = .03$ .

Transforming (17.5) and (17.6) into a form similar to (17.3) and (17.4), we find

$$(17.7) \quad P = \frac{.5E[1 + \delta(2 - t)]}{r_B(1 - t) + a - \gamma}$$

$$(17.8) \quad P' = \frac{E(1 - t')}{r_B'(1 - t') + a - \gamma(1 - \lambda t')}$$

From these equations and the assumed parameter values, we estimate  $P'/P$  to be 1.21 on the assumption that  $r_B = r_B' = .06$ , and to be 1.10 under the assumption of  $r_B = .06$ ,  $r_B' = .07$ .

As we vary  $\gamma$ , holding the other parameters constant, we find that  $P'/P$  falls as  $\gamma$  rises, reaching unity when  $\gamma = .028$  under the assumption that  $r_B = r_B' = .06$ , and when  $\gamma = .017$  under the assumptions that  $r_B = .06$ ,  $r_B' = .07$ .

The picture that emerges from this analysis is indeed reassuring. In a general way, one cannot rule out that tax changes as far-reaching and revolutionary as those proposed in the Report could drastically upset price relationships in the capital market and at the same time engender massive movements in the capital account of the balance of payments which would be difficult indeed to cope with. We find, however, that the particular pattern of tax changes proposed will, under plausible assumptions about the capital market mechanisms of Canada and the United States, have only a minor impact on stock

prices in general.<sup>4</sup> The prices of particular securities will certainly move more than our estimates of the general average, those with currently high pay-out ratios rising more than the average, and those with currently very low pay-out ratios perhaps even falling. But the movement in the general level of the stock market promises to be no greater than 20 percent, and probably less than that, as a consequence of the tax shift. Movements of this kind have taken place in periods of less than a year many times in the past, creating no obvious trouble for the Canadian economy. There are no grounds to presume, therefore, that the capital market movements associated with the tax shift, or their balance-of-payments implications, ought to be matters of serious concern. It is a tribute to the perspicacity of the framers of the Report that the implementation of their recommendations promises to be so smooth.

### *III. CONCLUSION*

I must repeat at this point my profound regard for the monumental task that has been completed by the Commission and its staff. Implementation of the recommendations of their Report would make the Canadian tax system a model for the world, and would provide a framework for economic progress that is both equitable and conducive to the efficient functioning of the economy. Transitions from one tax system to another are bound to entail some problems of adjustment, and this case is no exception. But the problems in this case appear to be minor indeed, and the rewards to the economy from taking the steps recommended by the Commission are great — great enough to justify by far Canada's accepting the limited problems that the transition may entail.

<sup>4</sup> A question may arise in the minds of some readers as to whether pension funds (which would be tax exempt under the Royal Commission proposals) will not so dominate the securities market that they determine share prices. I doubt that this would be the case for two reasons: (a) pension funds do not typically concentrate their holdings in equities; hence the total volume of equity investment accounted for by the funds will be only a fraction of their total holdings, and (b) in order for pension funds to determine equity prices, if their risk premiums are comparable to those of private citizens, they would have to effectively drive private shareholders out of the market and essentially monopolize the holding of Canadian equities.

If the pension funds demand for holding equities risk premia that are substantially higher than those required by private investors, the two groups may simultaneously be "at the margin" between stocks and bonds, but in this case the calculations based on private investor equalization of net-of-tax yields will remain valid predictors of market behavior.