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Kenneth J. McKenzie

Department of Economics
University of Calgary

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Institute for Advanced Policy Research
University of Calgary
Calgary, Alberta
Canada

http://www.iapr.ca
iapr@ucalgary.ca

Correspondence: Kenneth J. McKenzie, Department of Economics, University of Calgary, kjmckenz@ucalgary.ca

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Kenneth J. McKenzie

Department of Economics and
Institute for Advanced Policy Research
University of Calgary

EnCana Scholar, C.D. Howe Institute

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I. Introduction

In its inaugural May 2, 2006 budget the Conservative Government of Canada announced a significant decrease in the tax rate on dividends received from large public corporations. The tax cut was motivated in large part by the growth of income trusts and concerns over the potential erosion of the corporate income tax base associated with this phenomenon.[1]

In implementing the dividend tax cut, the Conservative government followed up on an initiative announced by the predecessor Liberal government in November 2005 to fully integrate dividends from large corporations. Prior to this the Liberal government had imposed a moratorium on advanced tax rulings for income trusts, intended to stem the

[1] The cost to the federal government from the reduced tax rate on dividends from large corporations announced in the budget is estimated to be $375 million in 2006-07 (Department of Finance Canada (2006), Table A3.1, page 202). In its 2005 consultation paper on income trusts and other flow-through entities (such as limited partnerships), the federal Department of Finance (2005) estimated that in 2004 its revenues were $300 million lower than they would have been if the flow-through entities had been structured as corporations.

growth of the vehicle pending further consultation and review. The November 2005 announcement, followed shortly by the call of the January 2006 election, and finally by the newly elected Conservative's May 2006 budget put an end to the consultation process.

The tax cut is substantial. For a high income shareholder in Ontario the personal tax rate on dividends received from a large corporation is almost cut in half, falling from 32.5 percent to 17 percent; the total (personal plus corporate) effective tax rate on corporate income distributed as dividends falls from 56 percent to 46 percent.[2] The implications of such a large cut in the taxation of dividends are significant, and go well beyond issues related to income trusts. The budget documents indicate that aside from making "the total personal and corporate income tax on earnings distributed as dividends more comparable to the income tax paid on interest payments and income trust distributions", the "tax reduction will encourage savings, investment and economic growth (page 77, The Budget Plan 2006).

The purpose of this paper is to examine the state of the art of the academic research regarding the economic effects of dividend taxation, and analyze the impact of the decrease in the tax rate on dividends implemented by the budget in light of this research. Will the tax cut curtail the growth of income trusts? Can we expect the reduction in taxes on dividends to encourage savings and investment? Will the changes enhance economic efficiency? It turns out that the answers to these questions are not straightforward and depend critically upon several unresolved issues involving our understanding of taxation and capital markets. These uncertainties suggest that some prudence is called for in assessing the potential impact of the dividend tax cut.

II. Brief Sketch of the Relevant Law

To begin, a brief summary of the law as it relates to the taxation of investment income earned via corporations and income trusts will set the stage for the ensuing discussion. This is not intended to be an in-depth review of the intricacies of the relevant tax law, but rather simply provides the background necessary to discuss the economic issues.

Corporations

Corporations have two basic ways to finance investment – debt and equity. Equity finance, in turn, comes in two primary forms – retained earnings and new share issues. Corporate earnings are then provided to investors in three basic forms – as interest paid to corporate debt holders, and as dividends and capital gains accruing to corporate equity holders. The taxation of each type of income varies.

Income earned by public corporations is taxed at the corporate level at the relevant corporate income tax rate. The federal rate is currently 22.12 percent (which includes a 1.12 percent surtax). Provincial rates vary, with a current weighted average general rate

[2] See later in the text for details regarding these calculations.

of around 13 percent, giving an average combined federal-provincial rate of 35.12 percent. The federal government has announced that the surtax will be eliminated by 2008 and the corporate income tax rate reduced to 19 percent by 2010. Barring any changes in provincial taxes, this will lower the average federal-provincial corporate income tax rate to 32 percent.

When a corporation distributes earnings to shareholders in the form of dividends, the income is taxed again at the shareholder level at the applicable marginal tax rate.[3] In the absence of special provisions this would result in the double taxation of corporate income – once at the corporate level because dividends are paid out of after-corporate-tax earnings and again at the shareholder level. Domestic shareholders in Canada are, however, given credit for some of the corporate income taxes that have been paid on their behalf. This credit is granted on a notional basis by way of the dividend tax credit. Prior to the May 2006 federal budget, the credit was based on a presumed combined federal-provincial corporate income tax rate of 20 percent, which was intended to approximate the small business rate for privately held corporations (Canadian Controlled Private Corporations – CCPCs). The policy intent was to achieve the full integration of dividends paid by small privately held businesses.[4] Dividends received by shareholders are grossed-up to the pre-corporate tax level suggested by this notional tax rate, subject to tax at the shareholder's marginal tax rate, and a credit is granted on the basis of the notional dividend tax credit rate.[5] Since the federal-provincial tax rate for large public corporations (just over 35 percent) was greater than the notional 20 percent rate, prior to the budget the dividend tax credit removed some, but not all, of the corporate level tax levied on dividends paid by public corporations. Thus, while some relief from double taxation was granted to domestic shareholders of large public corporations prior to the budget, dividends distributed by fully taxpaying corporations in Canada were subject to some amount of double taxation and the tax system was underintegrated.[6]

The May 2006 federal budget announced an increase in the dividend tax credit rate for dividends received from public corporations. The dividend tax credit rate was increased to reflect a notional federal-provincial corporate income tax rate of 32 percent for dividends received after 2005 from large public corporations, rather than 20 percent under the previous system. This rate is intended to reflect the reduction in the corporate tax rate to 32 percent which will be fully implemented by 2010. The intention is to approximate full integration for fully taxpaying public corporations at that time.[7]

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[3] Intercorporate dividends are tax free.

[4] CCPC's are taxed by the federal government at a preferential federal rate of 12 percent on the first $300,000 of qualifying business income. Provincial rates vary, as do the thresholds. In most provinces the combined small business tax rate is in fact somewhat less than the 20 percent notional rate used in calculating the dividend tax credit, which means that the current tax system tends to be slightly over-integrated for many small businesses.

[5] The gross-up was 125 percent and the combined federal-provincial dividend tax credit was an average of 20 percent.

[6] Dividends received from tax loss corporations, who pay no corporate income tax, are still eligible for the dividend tax credit. As such, for these dividends the tax system is over integrated.

[7] Specifically, shareholders will include 145 per cent of the eligible dividend amount in income, and the federal dividend tax credit with respect to eligible dividends will be approximately 19 per cent of that grossed-up amount, reflecting the 19 percent general corporate tax rate that will apply beginning in 2010. It is assumed that

Dividends received from CCPCs will continue to receive the 20 percent dividend tax credit.

Of course corporations do not necessarily distribute all of their earnings as dividends to shareholders. Instead, they may choose to retain some of those earnings and reinvest them within the firm. If a corporation retains some of its earnings, the value of its stock will generally increase to reflect those earnings. When shareholders subsequently sell the stock, capital gains arising from the sale are taxed. Thus, like income distributed as dividends, retained corporate income is taxed twice – once at the corporate level by way of the corporate income tax and again at the investor level via the capital gains tax. Some relief from this double taxation is granted by the fact that only half of realized capital gains are included in taxable income at the shareholder level. Moreover, because capital gains are taxed on realization, and not as they accrue, the accrual equivalent effective tax rate declines in present value terms the longer shares are held.[8]

In the case of debt, unlike dividends interest is deductible for corporate income tax purposes. Interest income received by domestic lenders is taxed at their full marginal tax rate. Because interest payments are deductible at the corporate level and fully taxable in the hands of investors, unlike dividends and capital gains interest payments are only taxed once, at the investor level.

Tax-exempt entities supply a substantial portion of the corporate capital in Canada. These tax-exempt entities include pension funds and registered retirement savings plans, as well as educational, religious and other charitable organizations. These entities are not taxed on interest, dividends or capital gains. However, because the dividend tax credit is not refundable the corporate level tax applies to corporate income attributable to the equity capital supplied by tax-exempt entities. Thus, the equity investment income received by tax-exempt entities in the form of dividends and capital gains is not in fact tax exempt, as it is taxed once at the corporate level.

Income received by foreign shareholders and lenders from Canadian corporations is not subject to Canadian income tax but is subject to withholding taxes. In Canada a general withholding tax rate of 25 percent is applied to interest and dividends paid to foreigners. This general rate is reduced by various bi-lateral treaties. For example the Canada-U.S. tax treaty lowers the withholding tax rate to 15 percent on dividends paid to U.S. shareholders.[9] For interest payments to U.S. lenders the withholding tax rate is 10 percent. Interest and dividend payments received by U.S. residents are subject to U.S. domestic taxes, but Canadian withholding taxes are generally creditable against the U.S. tax liability. In principle this should effectively remove the Canadian taxes on dividend and interest income received by U.S. residents. However, U.S. tax is assessed on a global basis, which means that income and foreign tax credits are aggregated into various

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the provinces and territories will increase their dividend tax credits for eligible dividends to equal their general corporate income tax rates, presumed to be around 13 percent on average. This will raise the dividend tax credit to 32 percent.

[8] For more on the accrual equivalent effective tax rate on capital gains see Davies and Glenday (1990).

[9] The withholding tax rate on dividends is reduced to 5 percent in the case that the U.S. shareholder owns 10 percent or more of the voting shares. See Mintz (2001) for a discussion of withholding taxes.

"baskets." This means that even if Canadian taxes are less than the U.S. domestic tax on interest and dividends, it is possible that these taxes will not be fully credited against U.S. taxes if other foreign sources of income earned by the U.S. recipient are highly taxed.[10]

Income Trusts

While income trusts come in various forms, there are two basic structures – business income trusts and royalty trusts. Regardless of how they are structured, the salient feature of income trusts is that the income earned is generally not subject to corporate income taxes but rather is flowed-through to investors (unitholders) and taxed at the relevant rate at the personal level. Thus, all of the income earned within an income trust is taxed only once, at the unitholder level.

A typical structure for a business income trust involves a trust forming a subsidiary to acquire the assets of a company. The trust sells trust units to the public and uses the proceeds to acquire all of the debt and equity of the company. The trust then capitalizes the new operating company with non-arms length private market debt that generates tax deductible interest payments sufficient to eliminate corporate income taxes. In the case of a royalty trust – commonly used in the oil and gas sector – the trust purchases a royalty interest in the company. Since non-crown royalties, like interest, are tax deductible, corporate income taxes are eliminated in this way. In either case, or in some other manner (for example through leasing arrangements), the income trust eliminates or substantially reduces corporate income taxes and flows the income through to unitholders tax free.[11] The income received by unitholders is then typically taxed as ordinary income in the form of interest or royalties. Thus, income earned by way of an income trust is flowed-through tax free to investors and is only taxed once, in the hands of the unitholders. Foreign unitholders are subject to withholding taxes at the usual rates.

Capital gains on the sale of trust units are taxed in the hands of the unitholder at the relevant capital gains tax rate upon realization. If a trust does not distribute all of its income in a year to unitholders the undistributed amount is subject to taxation at the trust level at the usual corporate income tax rate. Distributions in excess of the income generated in the trust reduce the adjusted cost base of the trust units for capital gains purposes, which gives rise to higher capital gains taxes on the sale of the trust units.

III. The Distortionary Effects of Taxes on Corporate Income

The workhorse model used to analyze the distortionary aspects of taxes on corporate income is the neo-classical investment model, which gives rise to the idea of the cost of capital and the related concept of the marginal effective tax rate on capital.[12]

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[10] Ibid.

[11] See Agarwall and Mintz (2004), Hayward (2002), and Aguerrevere, Pazzagilia and Ravi (2005), for a discussion of the structure of income trusts.

[12] See Auerbach (1979, 1983) for the neo-classical investment model and Boadway (1987) and McKenzie, Mansour, and Brûlé (1998), for a discussion of the marginal effective tax rate methodolgy.

In deciding whether to undertake an investment, firms require that the investment provide a sufficient after-tax return to compensate investors. The cost of capital is the pre-tax rate of return that is sufficient to cover operating expenses, taxes, economic depreciation, and the investor's required after-tax rate of return. Thus, the cost of capital depends in part on the return firms must pay to suppliers of debt and equity capital to attract funds. The cost of capital also depends on such factors as tax rates, the investment's economic depreciation rate, capital cost allowances (tax depreciation) on the investment, the inflation rate, and the source of financing for the investment. Because a higher cost of capital makes certain investments unprofitable, corporate and individual income taxes may reduce investment incentives by raising the cost of capital.

The concept of the marginal effective tax rate is related to the cost of capital in so much as it measures the percentage difference between the pre-tax rate of return on an investment and the post-tax rate of return required by lenders and shareholders. The marginal effective tax rate is typically normalized with respect to the required pre-tax rate of return, and can then be thought of as the share of the pre-tax rate of return accounted for by the taxes associated with the investment.

III.1 The Standard Story

A simple stylized example, which will be carried throughout much of the discussion, illustrates what might be thought of as the standard story, as reflected in public discussions, regarding the impact of corporate taxation on organizational form, investment and savings.[13] The calculations in this stylized example implicitly assume that investments are made in physical capital. The corporate tax system is assumed to be such that tax depreciation is equal to economic depreciation and no other taxes are levied on capital at the corporate level. Inflation is ignored and the calculations reflect the "closed-economy" assumption regarding the capital market, where domestic investment is financed by domestic saving, and the so-called "traditional view" of dividend taxation whereby dividend taxes affect investment and payout decisions. These assumptions simply and focus the discussion at this point. Other considerations, in particular a richer and more realistic representation of the corporate tax system, an analysis of the implications of Canada as a small participant in an open international capital market, and an alternative view of dividend taxation, are discussed later.

Suppose that an investor requires an after-tax rate of return of 8 percent and the investor's marginal tax rate is 46 percent.[14] Consider an investment made in a non-corporate enterprise not subject to the corporate income tax. This may be an income trust, or any other non-corporate form that allows income to be flowed to investors in a tax free manner, such as a limited partnership. The investment in the non-corporate enterprise must earn a return high enough to pay tax at the investor's rate (46 percent) and still yield the required 8 percent after-tax rate of return. The non-corporate investment must therefore earn a pre-tax rate of return (net of depreciation) of 14.8 percent in order to cover the investor's income taxes and meet the required after-tax rate of return of 8

[13] See, for example, Department of Finance (2005).
[14] This is the marginal tax rate on ordinary income for a high income earner in Ontario.

percent (0.148(1-.46)=.08). The marginal effective tax rate on this investment is equal to the difference between the pre- and post-tax required rates of return as a percentage of the pre-tax rate of return, which in this case is, not surprisingly, simply equal to the individual's statutory tax rate of 46 percent ((.148-.08)/.148=.46).

Now consider an equity investment made in a corporation instead. Assume for now that all of the earnings are distributed as dividends. The corporate income tax rate is 35 percent. Under the pre-May 2006 budget system, when the dividend tax credit rate of 20 percent was less than the corporate income tax rate of 35 percent, the investor level marginal tax rate on dividends for this example is 32.5 percent.[15] In this case the cost of capital for an equity financed investment in the corporate sector is 18.2 percent. This 18.2 percent pre-tax rate of return yields an 8 percent rate of return after paying both the corporate tax and the investor level tax on dividends (0.182(1-0.35)(1-0.325) = 0.08). The marginal effective tax rate in this case is 56 percent ((.182-.08)/.176=.56).

Since fewer investments can earn the higher required return (18.2 percent as opposed to 14.8 percent), the standard story suggests that the lack of full integration in the taxation of corporate income and discourages investment in the corporate sector vis-à-vis the non-corporate sector by raising the cost of capital.

Now consider the same example, but this time assume that the tax system is fully integrated via an enhanced dividend tax credit equal to the corporate income tax rate of 35 percent. This is in the spirit of the May 2006 budget proposal.[16] Everything is as above, except that the investor's marginal tax rate on dividends drops to 17 percent due to the higher dividend tax credit.[17] With a corporate tax rate of 35 percent the cost of capital drops to 14.8 percent (.148(1-0.35)(1-.17)=.08), and the marginal effective tax rate declines to 46 percent, which is exactly the same as the effective tax rate on non-corporate investment. Thus, in the case of a fully integrated tax system there is no difference in effective tax rates between corporate and non-corporate investments. As indicated in the budget, the decline in the personal tax rate on dividends appears to equalize the effective tax rate on investments made via corporations and income trusts by lowering the marginal effective tax rate on corporate investment.

Under the standard story, the reduced cost of capital faced by corporate form entities resulting from the dividend tax cut will encourage more investment and saving by lowering the cost of capital and the marginal effective tax rate. Moreover, by eliminating distortions in the cost of capital between the corporate and non-corporate sectors it will generate efficiency gains. Beginning with Harberger (1962) economists have argued that a less than fully integrated corporate tax system misallocates capital between the

[15] This is the marginal tax rate on dividend income for a high income earner in Ontario under the pre-May 2006 system. It is calculated as (.46-.20)/(1-.20)=.325, where 46 percent is the individual's tax rate and the notional corporate tax rate that determines the dividend tax credit is 20 percent.

[16] The actual proposal is for a dividend tax credit of 32 percent, reflecting the proposed reduction in the corporate income tax from 35 percent to 32 percent over the next four years.

[17] This is calculated as (.46-.35)/(1-.35)=.17, where the notional corporate tax rate used to calculate the dividend tax credit is 35 percent, which is equal to the corporate tax rate. With a dividend tax credit of 32 percent the marginal tax rate on dividends would be 20 percent.

corporate and non-corporate sectors and gives rise to efficiency costs. Traditionally the focus has been on non-corporate entities such as sole proprietorships or partnerships that do not realize the benefits of incorporation such as limited liability, the ability to access liquid capital markets and exploit economies of scale and the centralized management found in the corporate structure. Some of these issues may not be relevant to enterprises organized as income trusts, but other issues arise.

The income trust structure effectively places another administrative layer between investors (unitholders) and the operating company. Rather than a board of directors, a board of trusties represents the interest of unitholders. Moreover, income trusts fall under a different code of law than corporations, which gives rise to several governance issues. For example, King (2003, page 22), referring to (Erlichman 2002), points out that:

> . . . while income trusts resemble corporations . . . (they) were not designed to accommodate active shareholder input, leading to a deficiency in the disclosure and transparency of income trusts relative to corporate entities . . . (T)here is no legislation enforced in Canada that requires trustees of an income trust to be independent, or that requires a majority of the trustees to be independent . . . In many cases, the trustees may be appointed without the approval of unitholders, are responsible for drafting disclosure and insider trading policies, and are responsible for auditing the management of the operating company. More importantly, in the case of many income trusts, some or all of the trustees of the income trust are the managers of the operating company. This situation creates a number of potential conflicts of interest that investors must take into account when they evaluate an income trust.

Moreover, while King (2003, page 21) reports that the legal consensus is that practical probability of unitholders being held liable for the actions of the operating company is very low, there is still some uncertainty regarding the limited liability of unitholders.

There are thus "governance costs" associated with organizing a business entity as an income trust rather than as a corporation. Indeed, and importantly, in the absence of tax considerations it is extremely unlikely that many, or any, businesses would choose to organize themselves in this form. Thus, to the extent that the tax system causes a misallocation of capital between the corporate and non-corporate form, in particular income trusts, this generates efficiency costs.

A related issue concerns distortions in the cost of capital within an industry. If businesses organized as income trusts face a lower cost of capital than competing businesses organized as corporations this can result in a competitive advantage for some businesses over others for tax reasons alone, leading to more distortions and efficiency costs. This may be particularly problematic for infant firms competing against mature, established firms, as the latter are better able to organize themselves as income trusts than are the former.

The tax cut on dividends received from large public corporations announced in the May 2006 federal budget goes some way toward addressing these issues. As the stylized effective tax rate calculations suggest, for fully taxpaying public corporations held by non-tax exempt shareholders the marginal effective tax rate on investments in the corporate and non-corporate sectors are equalized at 46 percent. The expectation is that this will lower the overall cost of capital, increase investment and savings, and reduce the incentive for business entities to organize themselves in non-corporate form, thereby reducing the associated efficiency costs resulting from the misallocation of capital between the corporate and non-corporate sectors.

Note, however, that an incentive to organize in the non-corporate form, such as an income trust, still exists when investors are tax exempt or tax sheltered. The above calculations assume that the investor is a taxpaying entity, or does not hold the investment within a tax sheltered pension plan or RRSP. If the investment is held in tax exempt form there is no tax at the shareholder level. In this case the marginal effective tax rate under the non-corporate flow-through form is zero, as no taxes are paid at either the corporate or investor level. The marginal effective tax rate under the corporate form (under the assumptions underlying this stylized example) is equal to the statutory corporate tax rate of 35 percent both before and after the May 2006 budget. This is because the dividend tax credit is not refundable, and therefore does not remove the corporate income tax levied on the dividends for tax exempt investors. Thus, pension plans and other tax exempt investors, as well as those who invest through RRSPs, will continue to prefer income trust distributions over corporate distributions for tax reasons. Non-resident investors will also prefer non-corporate form trust distributions as they will be taxed at a 15 percent withholding tax rate rather than the higher corporate and withholding tax rates on dividends.

Data presented in Aggarwal and Mintz (2004) suggests that in 2003 about 40 percent of the distributions of income trusts went to tax exempt domestic investors (pension funds, tax exempt mutual funds, tax exempt retail investors via RRSPs), and about 30 percent were to non-resident unit holders. Thus, 70 percent of income trust distributions were to investors who will continue to prefer distributions via the non-corporate form rather than the corporate form.

This means that while the increase in the dividend tax credit in the May 2006 budget will alleviate some of the efficiency costs associated with distortions to organizational form and investment under the standard story, they are by no means eliminated altogether, as a sizable clientele for income trusts will continue to exist. One possibility is that the capital market will segment, with tax exempt and tax sheltered investors primarily holding income trusts and taxable investors holding corporate shares. Indeed, Klassen and Mescall (2006) have identified the presence of this sort of clientele effect in the income trust market even prior to the changes to the dividend tax credit. As expected in a segmented capital market, they find that the implicit tax rate on the marginal investor in income trusts is substantially lower than corporate shares, suggesting the presence of a significant clientele effect.

To summarize, under the standard story the increase in the dividend tax credit for dividends received from large corporations will increase investment and saving by lowering the cost of capital facing businesses organized as corporations. This will alleviate some of the inefficiencies arising from the presence of income trusts due to the misallocation of resources between the corporate and non-corporate sector and level the competitive playing field within industries with both income trusts and corporations. The dividend changes will not, however, eliminate income trusts altogether. This is because tax-exempt investors and foreigners will continue to prefer distributions via income trusts over corporate distributions. A segmented capital market may exist with, all else equal, taxpaying clienteles preferring the corporate form and tax exempt clienteles preferring income trusts.

III.2 Non-Standard Stories

A key feature of the standard story is that taxes on dividends discourage investment and saving by raising the cost of capital faced by corporations. While intuitive, it turns out that this may not in fact turn out to be the case for two reasons, both of which have to do with the nature of capital markets.

The "New View" of Dividend Taxation

The tax system may distort a corporation's incentive to distribute or retain earnings. As will be elaborated on below it turns out that this is not a straightforward issue, however the nature of the potential distortion is easy to see using the stylized example employed above. As shown, for this example under the pre-budget system the cost of capital for an equity financed investment where the earnings are distributed as dividends is 18.2 percent, which generates a marginal effective tax rate of 56 percent. If, on the other hand, the earnings are retained within the firm and generate a dollar for dollar increase in the market value of the firm, the resulting capital gain is taxed at half of the investor's full marginal tax rate (23 percent in the example). For a top rate taxpaying investor with a one year horizon, the cost of capital for an equity financed investment where the earnings are retained is 16 percent (.16(1-.35)(1-.23)=.08), generating a marginal effective tax rate of 50 percent. This suggests an incentive to retain corporate earnings rather than paying them out as dividends. Indeed, the incentive is even stronger than this. Since capital gains are taxed on realization, delaying the sale of shares lowers the effective capital gains tax rate on an accruals basis. For example, if shares are held for an eight year holding period the accrual equivalent capital gains tax rate declines from 23 percent to about 12 percent, which generates a cost of capital of 14 percent (.14(1-.35)(1-.12)=.08) and a marginal effective tax rate of 43 percent, which is even lower than the effective tax rate on debt financed investment and investment in a non-corporate entity.[18]

While the decrease in the tax rate on dividends alleviates the tax penalty on distributions to some extent, a key question then is why corporations pay dividends at all when such a

[18] The implicit assumption here is that capital gains are realized for non-tax reasons. This may not be the case, as the realized based taxation of capital gains in and of itself introduced distortions due to the lock-in effect.

penalty exists? There is actually a good deal of controversy in the public finance literature regarding this question. The two competing explanations are referred to as "new view" and the "traditional view" of dividend taxation.[19] The traditional view, which is implicitly reflected in the standard story developed above, holds that dividends offer nontax benefits to shareholders that offset their tax disadvantage. For example, in the presence of informational asymmetries between investors and management, dividends may signal investors about a corporation's relative financial strength or future prospects. Alternatively, dividend payouts may reduce managerial discretion over internal funds, lowering agency costs. According to the traditional view, corporations set dividend payments so that, for the last dollar of dividends paid, the extra benefit of dividends just equals their extra tax cost. The need to maintain dividend payments for these non-tax benefits constrains the use of retained earnings as the marginal source of equity financing for new investments, suggesting that new share issues are the marginal source of funds. Thus, under the traditional view, the relevant investor level tax rate on equity financed investment is a weighted average of the tax rate on dividends and the accrual equivalent tax rate on capital gains. In this case, taxes on dividends (and capital gains) increase the cost of capital and discourage investment and savings, as in the standard story recounted above.

Under the new view, dividend payments offer no nontax benefits to shareholders relative to retentions. However, because corporations are presumed to be constrained in their ability to use other ways to distribute earnings to investors (such as share repurchases) they have no alternative but to use dividends. Dividends are therefore determined residually after the firm makes all profitable investments and dividend taxes act as a lump-sum tax on corporate equity. Retained earnings (and debt) are the marginal source of funds, and the relevant investor level tax rate in just the capital gains tax rate. Investor level taxes on dividends therefore reduce the value of the firm but have no impact on the firm's cost of capital and therefore have no bearing on dividend or investment policies. Although the dividend tax does not affect investment incentives, the capital gains tax does because retentions increase the value of shares which is taxed as a capital gain.

Unfortunately, there is little in the way of empirical evidence that allows us to say definitively which view of dividend taxes is correct. Some research finds evidence in support of the traditional view and other research finds evidence in support of the new view.[20] In a recent paper Auerbach and Hassett (2003) suggest that both views may in fact be relevant, depending upon the firm – they find that about half of the firm's in the U.S. can be viewed as traditional view firms and the other half as new view firms.

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[19] For a general discussion see McKenzie and Thompson (1996), Poterba and Summers (1985), and Zodrow (1991). The new view is associated with King (1977), Auerbach (1979) and Bradford (1981). The traditional view comes in many forms. For example, Easterbrook (1983) and Jensen (1986) sketch out some agency models, while Miller and Rock (1985), Bernheim (1991), and Bernheim and Redding (2001) look at signaling.

[20] See McKenzie and Thompson (1996), Zodrow (1991) and Auerbach and Hassett (2003) for a summary of the empirical research.

The question of which view of dividend taxation is correct therefore remains unsettled. Unfortunately it has important implications for the economic impact of the cut in dividend taxes contained in the May 2006 budget. To see this, pre- and post-budget marginal effective tax rate calculations are presented for equity financed investment under both views in Table 1.[21] These calculations differ from the stylized example utilized to this point in that they allow for different types of investment (buildings, equipment, land, inventories), incorporate a richer formulation of the tax system (by allowing for deviations between economic and tax depreciation, provincial capital taxes, and implicit sales taxes on capital due to provincial sales taxes), and reflect the presence of inflation. More details on the formulas and data used in the calculations are provided in an appendix.

Under the traditional view of dividend taxes the marginal effective tax rate for a large public corporation is just under 62 percent prior to the May budget. The increase in the dividend tax credit lowers the marginal effective tax rate significantly, with the total rate declining to just over 57 percent. Under the new view the pre-budget total marginal effective tax rate is lower at about 57 percent (because of the irrelevance of dividend taxes under the new view) and remains unchanged when the dividend tax credit is increased. Thus, under the traditional view the dividend cut will lower the marginal effective tax rate by five percentage points, stimulating both saving and investment. Under the new view, however, although the marginal effective tax rate is lower to begin with, the tax cut on dividends will have no impact on either savings or investment.

A Small Open Capital Market with Internationally Mobile Capital

To this point the discussion has assumed that the Canadian capital market is closed, with domestic investment financed by domestic saving. This suggests an equivalence between taxes on the supply side of the capital market (taxes on interest, capital gains and, under the traditional view, dividends) and the demand side of the market (corporate income taxes, provincial capital taxes, implicit sales taxes on capital) in terms of their impact on savings and investment. This can be illustrated in simple diagram. In Figure I initially, with no taxes, demand and supply for a homogenous investment good are equilibrated at rate of return on capital of r^0 at $S_0=I_0$. Demand side taxes shift the demand curve down and supply side taxes shift the supply curve up, resulting in a new equilibrium with a before-tax (gross) rate of return of r^g, an after-tax (net) rate of return of r^n, and savings and investment of $S_t=I_t$. The marginal effective tax rate on capital is the tax wedge (r^g-r^n) divided by r^g, and as above is the share of the before-tax rate of return on a marginal investment accounted for by taxes. This marginal effective tax rate reflects both supply and demand side taxes on capital. Importantly, in a closed capital market, taxes levied on *both* the demand side and the supply side of the capital market affect *both* savings and investment. In particular, under the traditional view, a reduction in supply side taxes due to an increase in the dividend tax credit will shift the supply curve down from the post-tax equilibrium of $S_t=I_t$, lower the marginal effective tax rate and stimulate both investment and saving. As discussed above, under the new view there is no shift in the supply curve associated with a dividend tax cut and there will be no impact on savings

[21] The calculations in Table 1 are for a closed capital market.

and investment. However, note that a reduction in the capital gains tax will stimulate both investment and savings in a closed capital market under the new view.

If the capital market is open to international financial flows, and Canada is a small participant in the sense that domestic savings and investment have no impact on the international interest rate, then the equivalence between supply and demand side taxes on capital breaks down, with significant implications for tax policy. Boadway and Bruce (1992) were the first to argue that efforts to mitigate the double taxation of dividends at the shareholder level (via a personal dividend tax credit) would have no effect on investment in an open economy. This is because the dividend tax credit is applied on a residence basis, and foreign shareholders do not receive the credit. Devereux and Freeman (1995) extend Boadway and Bruce (1992) and examine other assumptions regarding the characteristics of marginal investors in a small open economy. They show that the impact of the dividend tax credit on investment depends upon whether the marginal shareholder is domestic or foreign. They also show that the Boadway and Bruce results are a special case of a more general model. In particular, in a "not so small" open economy, dividend taxes on domestic investors can affect investment.

Figure 2 illustrates the open capital markets case when the marginal shareholder is a foreigner. The internationally determined required after-corporate-tax rate of return to capital is r^i. Prior to the imposition of taxes domestic investment is I_0 and the domestic supply of savings is S_0. The key insight here is that the link between the supply and demand side of the capital market is broken in a small open economy with perfectly mobile capital. For the case drawn, the domestic demand for capital exceeds the domestic supply, with the residual (I_0-S_0) provided by foreign investors. The imposition of demand side taxes on corporations shifts the demand curve down, yielding a before-tax rate of return of r^g and a reduction in domestic investment to I_t. Supply side taxes shift the supply curve up, yielding an after-tax rate of return of r^n and a reduction in domestic savings to S_t. The marginal effective tax rate on *investment*, due to demand side taxes at the corporate level, is $(r^g-r^i)/r^g$. The marginal effective tax rate on *savings*, due to supply side taxes at the personal level, is $(r^i-r^n)/r^i$. The distinction between the marginal effective tax rate on investment and savings reflects the disconnect between investment and savings in a small open capital market. Importantly, demand side taxes have no impact on savings and supply side taxes have no impact on investment in this case. Thus, while a reduction in the tax rate on dividends will encourage domestic savings (by shifting the supply curve to the right from the post-tax equilibrium) it will have no impact on domestic investment.

The closed and open economy models are, in many ways, caricatures. There are reasons to believe that neither characterization is in fact perfectly applicable to Canada. Feldstein and Horioka (1980) were among the first to question the mobility of capital internationally, and therefore the notion of a fixed international interest rate, by noting the high correlation between savings and investment within countries. In the small open economy model with perfectly mobile capital, because of the disconnect between the supply and demand sides of the capital market there is no reason to expect savings and

investment to be correlated at all. While in a closed economy savings and investment would be perfectly correlated.

Feldstein and Horioka interpret the high, though not perfect, correlation between savings and investment within countries as indicative of economies that were "more like" closed economies than open economies. However, several authors have questioned this interpretation, arguing that a high correlation between savings and investment is still consistent with internationally mobile capital if, for example, country specific shocks affect both savings and investment.[22]

Evidence in support of Feldstein and Horioka's explanation that the correlation between domestic savings and investment is due to less than perfect international capital mobility is provided by Helliwell and McKitrick (1999). They argue that if this explanation is correct, then the correlation should be smaller, or even vanish entirely, across provinces or regions within a country. Helliwell and McKitrick combine Canadian provincial savings and investment rates with national data from other OECD countries and find that the strong correlation at the national level is completely absent among the provinces, thus providing support for the view that capital is not perfectly mobile internationally.

Perhaps a more likely possibility is that there is a segmented capital market in Canada, where some investors and some companies access international markets, and for whom the open economy characterization roughly applies, and where other investors do not access international markets, and for whom the closed economy characterization applies.

Table 2 contains marginal effective tax rate calculations for equity financed investments in the open capital market case. The calculations reflect the traditional view of dividend taxation and, aside from the open capital market, reflect the same underlying data as Table 1. See the appendix for details. Prior to the budget the total marginal effective tax rate on investment is 47.2 percent and the marginal effective tax rate on saving for a high bracket taxpayer in Ontario is almost 39 percent.[23] The increase in the dividend tax credit lowers the marginal effective tax rate on savings to 25.4 percent, thereby stimulating domestic saving. There is no impact, however, on the marginal effective tax rate on investment, which remains unchanged at 47.2 percent in aggregate because of the disconnect between the demand and supply sides of the capital market in a small open economy. In this case, the dividend tax cut will do nothing to stimulate domestic corporate investment.

IV. Summary and Conclusions

This paper has considered the state of art in the academic literature related to the economic effects of dividend taxation to evaluate the significant reduction in the tax rate on dividends announced in the May 2006 federal budget. Several questions were posed at the outset. Will the tax cut curtail the growth of income trusts? Can we expect the

[22] See Sachs and Warner (1995), Obstfeldt and Rogoff (2000).

[23] This reflects a weighted average of the tax rate on dividends and the accrual equivalent tax rate on capital gains, as well as the lack of inflation indexing in the taxation of investment income.

reduction in taxes on dividends to encourage savings and investment? Will the changes enhance economic efficiency? Unfortunately, our understanding of taxation and capital markets is such that the answers to these questions remain somewhat unsettled, and in each case the best answer is an unsatisfactory "perhaps" or "it depends."

In terms of curtailing the growth of income trusts, the reduction in the tax rate on dividends does go some way towards making, as stated in the budget documents, "the total personal and corporate income tax on earnings distributed as dividends more comparable to the income tax paid on interest payments and income trust distributions." However, this is only true for taxpaying shareholders. Tax exempt shareholders (pensions funds, individuals investing via RRSPs, etc.), will continue to favour non-corporate flow-through vehicles such as income trusts. The reason for this is that while these investors are exempt from tax at the shareholder level, dividends continue to be taxed at the corporate level because the non-refundabilty of the dividend tax credit results in a failure to eliminate the corporate tax. Given the importance of tax exempt investors in Canadian capital markets, a sizable clientele will continue to exist which favours non-corporate flow-through forms such as income trusts. This suggests that efficiency costs associated with distortions between the corporate and non-corporate forms will continue to exist, though they will be somewhat moderated.

Will the "tax reduction . . . encourage savings, investment and economic growth", as indicated in the budget plan? Here the answer depends critically upon two things – whether the new or traditional view of dividend taxation is true, and whether Canada is best thought of a small open economy on international financial markets or as a closed capital market. Under the traditional view of dividend taxation, in a closed capital market the tax cut will reduce the marginal effective tax rate on capital and cause both savings and investment to increase, as claimed in the budget documents. If the new view of dividend taxation holds, however, the tax cut will result in a revaluation of corporate shares with no associated increase in savings or investment. Even under the traditional view, if Canadian capital markets are open and capital is perfectly mobile, while the dividend tax cut should expand saving it will do little to encourage new investment.

While the ubiquitous call for more research clearly applies here, what can tax policy makers do in the mean time? If an expansion of saving and investment is the goal, given the uncertainty surrounding our understanding of taxes and capital markets a sensible approach would be to work upon several margins on both sides of the market. This involves lowering both supply side taxes on equity, including taxes on both dividends and capital gains, as well as demand side taxes such as the corporate income tax and corporate capital taxes. If an elimination of tax motivated income trusts is the objective, while the increase in the dividend tax credit helps in this regard, consideration may also be given to making tax exempt entities truly tax exempt by removing corporate as well as shareholder taxes on corporate distributions by making the dividend tax credit refundable. Interestingly, all of these initiatives involve moving the tax system closer to a regime which does not tax capital income at all but rather taxes consumption.

Figure 1: Tax Distortions in a Closed Capital Market

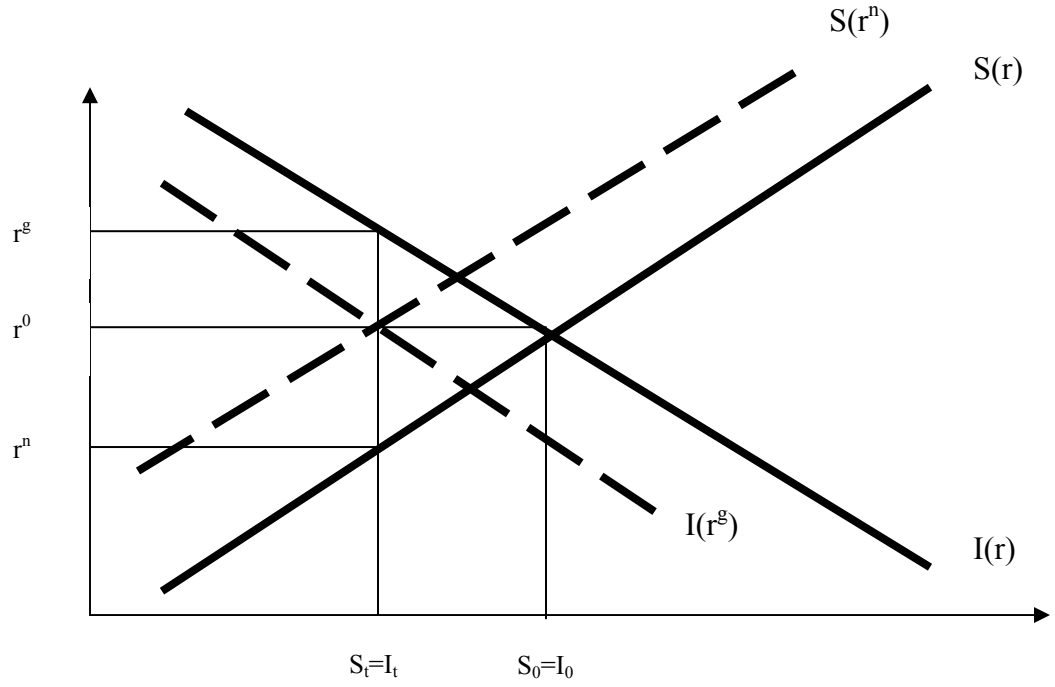

Figure 2: Tax Distortions in an Open Capital Market

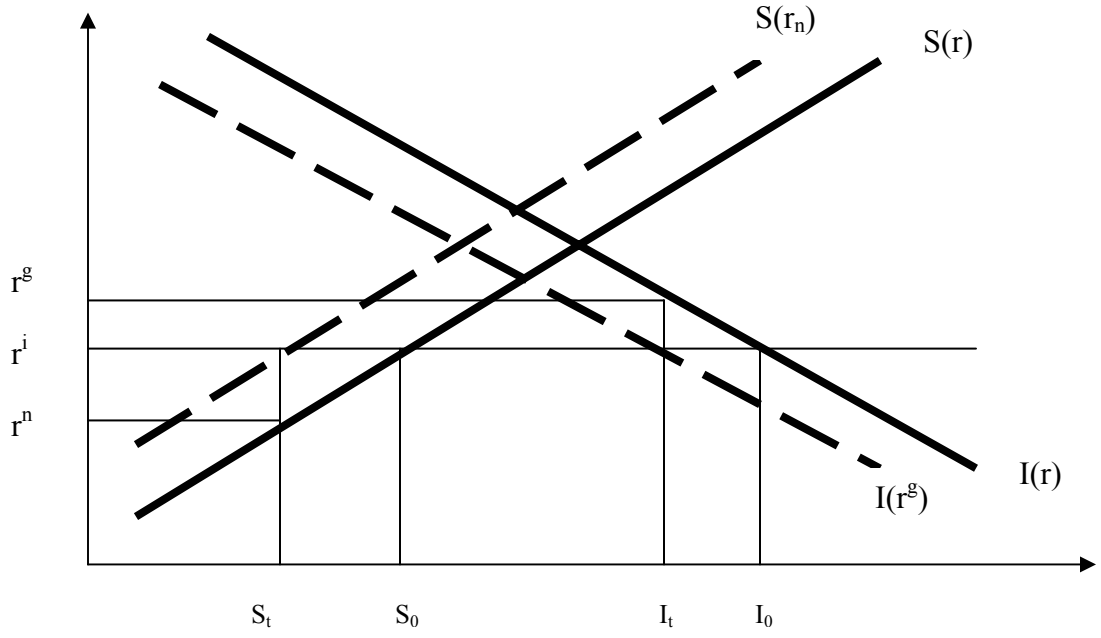

Table 1: Marginal Effective Tax Rates on Equity Financed Investments: Traditional vs. New View, Closed Capital Markets (percent)

	Pre-Budget		Post-Budget	
	Traditional	**New**	**Traditional**	**New**
Equipment	58.8	51.5	53.4	51.5
Buildings	65.4	59.7	61.2	59.7
Land	57.7	48.9	51.2	48.9
Inventories	64.2	58.2	59.8	58.2
Total	61.9	55.3	57.1	55.3

Table 2: Marginal Effective Tax Rates on Equity Financed Investments: Open Capital Market, Traditional View (percent)

	Pre-Budget	Post-Budget
METR on Investment		
Equipment	42.3	
Buildings	52.7	
Land	37.0	
Inventories	50.7	
Total	47.2	
METR on Savings	38.9	25.4

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Appendix: Formulas and Data for Tables 1 and 2

Following the basic methodology described in Boadway (1987) and elaborated on in McKenzie, Mansour and Brûlé (1998), the before-tax rate of return on capital (net of depreciation) required to cover the firm's opportunity cost of funds and the taxes associated with an investment in depreciable capital (buildings, equipment, land) is:

$$(1) \qquad r^g = (1+t_s)(r_c-\pi+\delta)(1-uZ+t_k(1-u)/(r_c+\delta))/(1-u) - \delta$$

where u is the corporate income tax rate, r_c is the firm's after-tax nominal discount rate (defined in more detail below), π is the inflation rate, δ is the economic depreciation rate, $Z=\alpha/(r_c+\alpha)$ is the present value of the tax depreciation deductions on $1 of capital where α is the appropriate CCA rate, t_s is the implicit sales tax rate on capital due to provincial retail sales taxes, and t_k is the provincial capital tax rate.

For inventory capital the equivalent expression is:

$$(2) \qquad r^g = (r_c-\pi+u\pi+t_k(1-u))/(1-u)$$

which reflects the inflation tax on inventories due to the use of FIFO accounting for corporate income tax purposes.

These expressions clearly reflect taxes levied on the demand side of the capital market, such as the corporate income tax, provincial capital taxes, and implicit sales taxes on capital. Taxes levied on the supply side of the market are reflected in the nominal discount rate r_c. The precise expression for r_c depends upon the marginal source of funds to the firm and the extent to which capital is internationally mobile.

Closed Capital Markets

If the after-tax real rate of return required by investors is r^n, the firm's discount rate is:

$$(3) \qquad r_c=(r^n+\pi)/(1-T_e)$$

where T_e is the marginal tax rate on equity income faced by the marginal investor.

As discussed in the text, T_e depends upon which view of dividend taxation is adopted. Under the traditional view the marginal source of funds is new share issues, and the marginal tax rate on equity income in equation (4) is a weighted average of the tax rate on dividends and the accrual equivalent tax rate on capital gains:

$$(4) \qquad T_e = \gamma\theta + (1-\gamma)c$$

where γ is the dividend payout ratio, θ is the investors dividend tax rate, and c is the accrual equivalent capital gains tax rate.

Under the new view the marginal source of equity funds is retained earnings and the marginal tax rate on equity income in equation (3) is:

(5) $T_e = c$

The marginal effective tax rate on investment and savings in a closed economy ($METR_C$) is the proportion of the firm's pre-tax rate of return that is needed to cover its total tax cost:

(6) $METR_C = (r^g - r^n)/r^g$

Open Capital Market

In the case of an open capital market with international mobile capital the firm's discount rate, r_c in the user cost of capital expression given in equation (2), is equal to the internationally determined real cost of funds, r^i, plus the domestic rate of inflation: $r_c=r^i+\pi$

The marginal effective tax rate on investment in a small open economy is then:

(7) $METR_I = (r^g - r^i)/r^g$

The weighted average real after-personal-tax rate of return on equity to domestic savers is:

(8) $r^n = (r^i+\pi)\ (1-\gamma\theta-(1-\gamma)c) - \pi$

and the marginal effective tax rate on savings is:

(9) $METR_S = (r^i - r^n)/r^i$

Data

To calculate the METR's in Tables 1 and 2 the following assumptions are made:

r^n (closed capital markets)	.04
r^i (open capital markets)	.04
π	.03
δ	.205 (equipment), .09 (building), 0 (land)
α	.322 (equipment), .048 (buildings), 0 (land)
u	.3512
θ	.325 (pre-budget), .17 (post-budget)
c	.12
γ	.5
t_s	.01 (equipment), 0 (buildings), 0 (land)
t_k	.003

To aggregate over the four types of capital to obtain a total marginal effective tax rate, an r^g is calculated for each type of capital and a weighted average r^g is then calculated using the weights .52, .28, .18, .02 for equipment, buildings, land and inventories.

These parameters are generally reflective of the Canadian economy and tax system on an aggregate basis. I thank the C.D. Howe Institute and Duanjie Chen for supplying the underlying data.